



Tobar Phádraig
PATRICKSWELL



DRAFT PATRICKSWELL LOCAL AREA PLAN

2024- 2030



VOLUME 2B

**APPROPRIATE
ASSESSMENT**

2ND SEPTEMBER 2023



Comhairle Cathrach
& Contae **Luimnigh**

**Limerick City
& County Council**

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Purpose

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Abbreviations

AA	Appropriate Assessment
BSBI	Botanical Society of Britain and Ireland
CDP	County Development Plan
CJEU	Court of Justice of the European Union
CIEEM	Chartered Institute of Ecology and Environmental Management
DoEHLG	Department of Environment, Heritage and Local Government
DoHLGH	Department of Housing Local Government and Heritage
EC	European Communities
EclA	Ecological Impact Assessment
EIA	Environmental Impact Assessment
EIS	Environment Impact Statement
EPA	Environmental Protection Agency
FRS	Flood Relief Scheme
EPA	Environmental Protection Agency
EU	European Union
FPO	Flora Protection Order
GSI	Geological Survey Ireland
IFI	Inland Fisheries Ireland
INNS	Invasive Non-native Species
IROI	Imperative Reasons of Over-riding Public Interest
LAP	Local Area Plan
LCCC	Limerick City & County Council
NIR	Natura Impact Report
NIS	Natura Impact Statement
NBDC	National Biodiversity Data Centre
NPWS	National Parks and Wildlife Service
OPR	Office of the Planning Regulator
QI	Qualifying Interest
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SFRA	Strategic Flood Risk Assessment
SPA	Special Protection Area
WFD	Water Framework Directive
WWTP	Waste Water Treatment Plant
ZoI	Zone of Influence

1 Introduction

1.1 Background

JBA Consulting Engineers and Scientists Ltd. (hereafter JBA) has been commissioned by Limerick City & County Council (LCCC) to prepare an Appropriate Assessment (AA) Screening Report for the proposed Patrickswell Local Area Plan (LAP) 2024 - 2030.

Screening for appropriate assessment is intended to be an initial examination which must be carried out by the Planning Authority or An Bord Pleanála as the competent authority. However, this screening is completed on behalf of the project proposer to show that likely significant effects have been considered in the project development and design, and where necessary progress with further assessment.

1.2 The 'Project'

The Proposed Plan is not directly connected with, or necessary to the management of any European Sites and may have potential adverse impacts upon the Natura 2000 sites identified in Section 4. Therefore, the proposed plan is subject to the requirements of the AA process.

1.3 Legislative Context

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora, known as the 'Habitats Directive' - provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Articles 3 - 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000 sites. Natura 2000 sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79 / 409 / EEC).

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

"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."

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

Article 6(4) states:

"If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted."

Where the site concerned hosts a priority natural habitat type and / or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission to other imperative reasons of overriding public interest."

The requirements of Articles 6(3) and 6(4) of the Habitats Directive have been transposed into Irish legislation by means of *inter alia* the European Communities (Birds and Natural Habitats) Regulations 2011-2015 (S.I. No. 477 / 2011) as amended.

1.4 Appropriate Assessment Process

Guidance on the Appropriate Assessment (AA) process was produced by the European Commission in 2002, which was subsequently developed into guidance specifically for Ireland by the Department of Environment, Heritage and Local Government (DEHLG) (2009, rev 2010). Office of the Planning Regulator (OPR) produced a Practice Note in 2021, PN01 - Appropriate Assessment Screening for Development Management (OPR, 2021). These guidance documents identify a staged approach to conducting an AA, as shown in Figure 1-1.

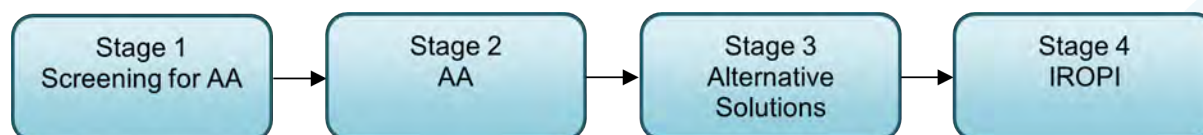


Figure 1-1: The Appropriate Assessment Process (from: Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities, DEHLG, 2009)

1.4.1 Stage 1 - Screening for AA

The initial, screening stage of the Appropriate Assessment is to determine:

- whether the proposed plan or project is directly connected with or necessary for the management of the European designated site for nature conservation
- if it is likely to have a significant adverse effect on the European designated site, either individually or in combination with other plans or projects.

For those sites where, potential adverse impacts are identified, either alone or in combination with other plans or projects, further assessment is necessary to determine if the proposals will have an adverse impact on the integrity of a European designated site, in view of the site's conservation objectives (i.e., the process proceeds to Stage 2).

1.4.2 Stage 2 - AA

This stage requires a more in-depth evaluation of the plan or project, and the potential direct and indirect impacts of them on the integrity and interest features of the European designated site(s), alone and in combination with other plans and projects, taking into account the site's structure, function and conservation objectives. Where required, mitigation or avoidance measures will be suggested.

The competent authority can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site(s) concerned. If this cannot be determined, and where mitigation cannot be achieved, then alternative solutions will need to be considered (i.e., the process proceeds to Stage 3).

1.4.3 Stage 3 - Alternative Solutions

Where adverse impacts on the integrity of Natura 2000 sites are identified, and mitigation cannot be satisfactorily implemented, alternative ways of achieving the objectives of the plan or project that avoid adverse impacts need to be considered. If none can be found, the process proceeds to Stage 4.

1.4.4 Stage 4 - IROPI

Where adverse impacts of a plan or project on the integrity of Natura 2000 sites are identified and no alternative solutions exist, the plan will only be allowed to progress if imperative reasons of overriding public interest can be demonstrated. In this case, compensatory measures will be required.

The process only proceeds through each of the four stages for certain plans or projects. For example, for a plan or project, not connected with management of a site, but where no likely significant impacts are identified, the process stops at stage 1. Throughout the process, the precautionary principle must be applied, so that any uncertainties do not result in adverse impacts on a site.

This report is in support of a Stage 1 Screening for Appropriate Assessment.

1.4.5 Recent judgements of the Court of Justice of the European Union (CJEU) and how they are used in this assessment.

The CJEU issued a ruling on the consideration of avoidance and reduction measures as a result of the case known as *People over Wind, Peter Sweetman v Coillte Teoranta* (Case C-323/17). This judgement stated that measures intended to reduce or avoid effects on a Natura 2000 site should only be considered within the framework of an Appropriate Assessment, and it is not permissible to take into account such measures at the screening stage. In practice, this means that any activities that are not integral to the project (i.e., the project could conceivably take place without them) and have the effect of avoiding or reducing an impact on a Natura 2000 site, cannot be considered at the screening stage.

The CJEU ruling in the case of *Grace & Sweetman* [2018] (C-164/17) clarified the difference between avoidance and reduction (mitigation) measures and compensation. Measures intended to compensate for the negative effects of a project cannot be taken into account in the assessment of the implications of a project, and instead are considered under Article 6(4). This means that any project where an effect on the integrity of a Natura 2000 site remains and can only be offset by compensation, would need to proceed under Article 6(4), demonstrating “imperative reasons of overriding public interest”.

The judgements referred to as the Dutch Nitrogen cases [2018] (C-293/17 and C-294/17) have important implications for projects that could potentially impact on sites that are exceeding critical thresholds for input of damaging ammonia (but could also reasonably apply where other nutrients are impacting Natura 2000 sites). The judgements state that the use of thresholds to exclude project impacts is acceptable in principle, and that strategic plans can be used as mitigation but only with consideration of the certainty (or otherwise) of the outcomes of those strategic plans. It clarifies that where the status of a habitat type is already unfavourable the possibility of authorising activities which increase the problem is necessarily limited.

The CJEU ruling in the case of *Holohan v An Bord Pleanála* (C-462/17) also clarified the importance in Appropriate Assessment of taking into account habitat types and species outside the boundary of the Natura 2000 site where implications of the impacts on those habitat and species may impact the conservation objectives of the Natura 2000 site. In this assessment functionally linked and supporting habitat for species outside of Natura 2000 sites are assessed where they could potentially impact the conservation objectives of any screened in European sites. European sites covers the Natura 2000 network, and the terms are interchangeable in this document.

1.5 Methodology

The Screening for Appropriate Assessment has been prepared having regard to the Birds and Habitats Directives, the European Communities (Birds and Natural Habitats) Regulations 2011-15 as amended and relevant jurisprudence of the EU and Irish courts. The following documents have also been used to provide guidance for the assessment:

- DEHLG (2009 rev 2010) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government (DEHLG, 2009).
- Office of the Planning Regulator (2021) OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management (OPR, 2021).
- European Communities (EC) (2018) Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission (European Commission, 2018).
- EC (2021) Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC. (European Commission, 2021)
- EC (2002) Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission (European Commission et al., 2002), and 2021 update (EC 2021) above.
- EC (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public

interest, compensatory measures, overall coherence, opinion of the commission. European Commission Management (European Commission, 2007).

1.5.1 Desktop study

A desktop study was conducted of available published and unpublished information, along with a review of data available on the National Parks and Wildlife Service (NPWS) and National Biodiversity Data Centre (NBDC) web-based databases, in order to identify key habitats and species (including legally protected and species of conservation concern) that may be present within ecologically relevant distances from the project as explained below. The data sources below were consulted for the desktop study:

- Aerial photography available from www.osi.ie and Esri World Imagery.
- NPWS website (www.npws.ie) where Natura 2000 site synopses, data forms and conservation objectives were obtained along with Annex I habitat distribution data and status reports.
- River Basin Management Plans (www.wfdireland.ie)
- NBDC Biodiversity Maps (maps.biodiversityireland.ie)
- Catchments (www.catchments.ie)
- Environmental Protection Agency Maps (<https://gis.epa.ie/EPAMaps>)
- Geological Survey Ireland (GSI) website (www.gsi.ie)
- GSI - Groundwater data viewer (<https://dcenr.maps.arcgis.com>)
- Planning Applications (myplan.ie)

1.5.2 Site Visit

A multidisciplinary walk over was undertaken on 29th March 2023 by the Limerick City and County Council Forward Planning team and heritage officer, the SEA consultants from Minogue Associates and the JBA Ecologist in preparation for the AA Screening report.

1.5.3 In-combination Assessment

The in-combination assessment followed the process for in-combination set out by the DTA Handbook (Tyldesley and Chapman, 2013). The in-combination impacts are considered only after the assessment of the project alone. If the result of this is that the project will have no effect at all on a European site, then no in-combination assessment would be necessary. However, where there is no adverse effect on site integrity, but some adverse effect an assessment of this adverse effect in-combination with other plans or projects is carried out. Other plans or projects were searched for using the National Planning Application Database, EIA portal and Myplan.ie databases all accessed online. If no other plans or projects are identified, then the assessment is complete. Where other plans or projects are identified then initially a review is made of its AA screening, or AA, and if the Competent Authority for the plan or project has made a final determination of no effect on the integrity of any European site, either alone or in-combination, this determination is used in this assessment. Where there is not a full AA, or the findings are unclear or out of date, the plan or project documentation is checked for credible evidence of real (not hypothetical) risk to a European site. Where these are identified then a detailed assessment is carried out. A summary of the approach is presented in Figure 1-2.

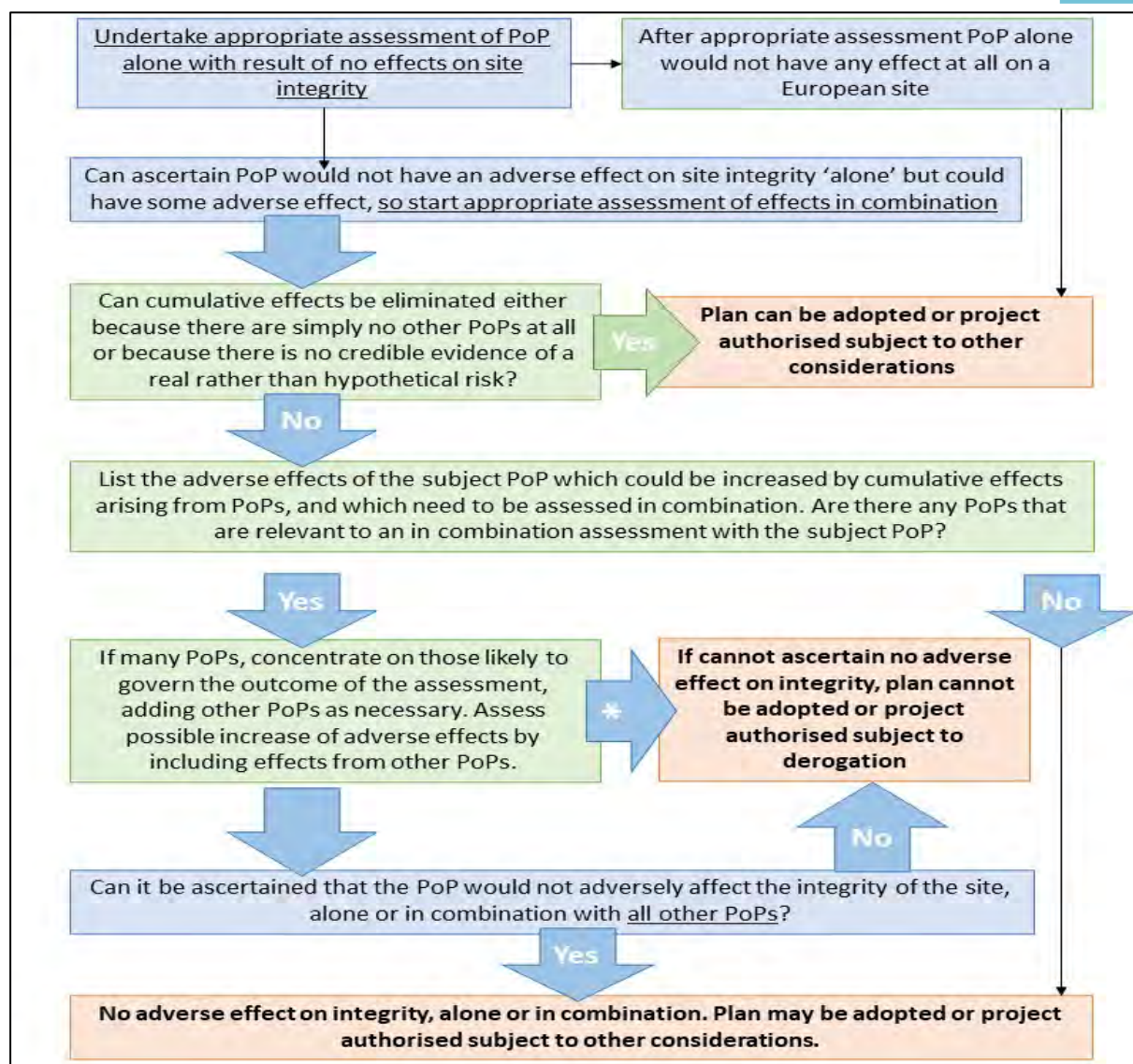


Figure 1-2: Flow diagram of process for in-combination assessment (modified from Tyldesley and Chapman, 2013)

Potential sources of cumulative impacts were identified based on the ecology of valued ecological features only for features where this is a residual or non-significant impact. Potential sources of cumulative impacts were sought within an area where there is the potential for a significant impact on relevant Natura sites identified in Section 4.

1.6 Limitations and constraints

The screening assessment necessarily relies on some assumptions, and it was inevitably subject to some limitations. These would not affect the conclusion, but the following points are recorded to ensure the basis of the assessment is clear:

- The LAP is a higher-level plan. Therefore, this assessment cannot include any detailed assessment of any projects that may arise as a result of implementation of this Plan. Where broad level assessments are required to determine the potential for cumulative or in-combination impacts, the precautionary principle is used.
- Much of the implementation and monitoring of the plan is dependent on collaboration with stakeholders and a range of agencies. The implementation of the Plan will also depend on the economic climate, political support, council funding and availability of funding from other sources. It is not possible to predict with certainty where these can be relied upon or where

unpredictable changes will occur. However, the assumption is made that in all instances legislation will be followed and further AA will occur where needed by the Competent Authority.

- Any changes to the Plan will require re-assessment by a suitably qualified Ecologist to determine if further screening and assessment will be required. In all instances of this assessment, the precautionary principle is used.

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2 Patrickswell Local Area Plan 2023 - 2029

2.1 Background

The Draft Patrickswell LAP sets out the overall development strategy and planning policy objectives for the town for coming years. The Draft LAP supports economic growth, education service and community related development in line with the principles of proper planning and sustainable development. The plan's policy objectives, and development management guidelines and standards have also been informed by best practice, national planning guidance and the GCDP, where appropriate. The Local Area Plan sets out a clear strategy for sustainable development that is closely aligned with sustainable transportation.

The Draft Plan is not directly connected with, or necessary to the management of any European Sites and may have potential adverse impacts upon the European sites identified in Section 4. Therefore, the Draft plan is subject to the requirements of the AA process.

2.2 Profile of Patrickswell

Patrickswell is located approximately 12km southwest of Limerick City Centre and is 31km East of Newcastle West. Patrickswell's hinterland is a rural area, defined by the Limerick Development Plan 2022 – 2028 as an area under Strong Urban Influence. The large village is strategically located in relation to the national roads network. The village can be accessed at either end from the M20 Cork to Limerick road. The east of the town can be accessed from the junction for the Limerick Racecourse, while the Attyflin Junction (M20/N21 Junction) provides access to the west of the village. The village is bypassed by the M20.

The village retains the appearance of a linear settlement with many traditional single storey buildings located along the Main Street. Patrickswell's village centre stretches along the old N20 national road and consists mainly of retail, commercial, public/institutional buildings and some dwellings. A more loosely knit pattern of development, consisting mainly of dwellings, spreads further north from the Main Street. The settlement boundary straddles two Municipal Districts, both the Metropolitan District of Limerick and the Municipal District of Adare-Rathkeale.

Patrickswell is essentially a linear town having developed along the old N20 Limerick to Cork road. It has a largely fragmented urban form with developments from different periods dispersed loosely around the built-up area. Patrickswell is typical of an urban settlement located in a predominantly rural area. The town performs an important civic and service function with a concentration of civic amenities including a primary school, garda station, a community resource centre and a church located just outside the town boundary. These provide services for the resident population and for a much wider rural based population. The majority of the town's building stock is of nineteenth and early twentieth century origin. The town lacks a strong urban structure but displays a number of notable buildings, including the former parochial house at Ballyanrahan East, the Community Resource Centre Building, the Dark Horse pub and the Cú Chulainn bar located on Main Street.

Similar to many Limerick villages and towns, Patrickswell has faced challenges in relation to vacancy, declining vibrancy, transport infrastructure deficiency and a lack of enterprise and employment opportunities. This plan seeks to balance the needs of the local community, businesses, landowners and the environment along with enabling Patrickswell to become an important local driver and self-sufficient village providing a range of functions for its resident population and the surrounding catchment. Patrickswell's strategic location, benefiting from its close proximity to Limerick City and ease of access to the N/M20 Motorway, makes it a desirable location for future development, and with a relatively compact village and the village centre readily accessible in a ten-minute walk time, opportunities exist for achievable modal shift for short journeys.

The development strategy for Patrickswell is to grow its population in line with the Limerick Development Plan as a Tier 4 Settlement, by focusing growth within the village core and in doing so, supporting the regeneration, repopulation and development of the village. The future of Patrickswell is of one a resilient and sustainable compact village, that supports improved local employment and economic activity, protects its local culture and heritage, while supporting the village's transition to a low carbon society.

3 Existing Environment

This section summarises the relevant existing environment within the Plan boundaries and its surroundings. All relevant baseline data is information on the conditions necessary for the maintenance of European sites.

3.1 Annex Species

As Patrickswell sits on the boundary of two 10km tetrads (R55 and R54), a search using a custom 10km polygon centred around Patrickswell was undertaken using the National Biodiversity Database (NBDC) to gain a baseline of species that are present within the area. Note records recorded under NBDC database before 1980s are not considered during the desktop study.

3.1.1 Terrestrial Mammals

The following Annexed terrestrial mammals were recorded, all of which are protected under the EU Habitats Directives (Annex II, IV, and V):

- Brown Long-eared Bat *Plecotus auritus* (Annex IV)
- Common Pipistrelle *Pipistrellus pipistrellus sensu lato* (Annex IV)
- Daubenton's Bat *Myotis Daubentonii* (Annex IV)
- Lesser Horseshoe Bat *Rhinolophus hipposideros* (Annex II and IV)
- Lesser Noctule / Leisler's Bat *Nyctalus leisleri* (Annex IV)
- Natterer's Bat *Myotis nattereri* (Annex IV)
- Otter *Lutra lutra* (Annex II and IV)
- Pine Marten *Martes martes* (Annex V)
- Soprano Pipistrelle *Pipistrellus pygmaeus* (Annex IV)

3.1.1.1 Lesser Horseshoe Bat (LHB)

There are a number of LHB roosts within 10km of Patrickswell, which are located in around the nearby town of Adare, which is approximately 5km south-west of the LAP boundary. These are monitored by NPWS. Data of LHB roost types from NPWS (sensitive data request via LCCC Heritage Officer) include:

- Adare Manor, Ice House. LHB Roost type: Hibernacula
- Desmond Castle, Adare, LHB Roost type: Night roost, Last presence of LHB: 2014
- Hollywood House, Adare, LHB Roost type: Active satellite roost, Last presence of LHB: 2022
- Adare Manor, Adare, LHB Roost type: Hibernacula, Last presence of LHB: 2015
- Gamekeeper's Cottage (Renovated Bat House), Boulabally, Adare, LHB Roost type: Hibernacula/Satellite, Last presence of LHB: 2022

There are no known maternity roosts located within Patrickswell. The nearest SAC designated for Lesser Horseshoe Bat is Curraghchase SAC, located 9.3km from the Plan Area.

3.1.1.2 Otter

Otter is a Qualifying Interest of the Lower River Shannon SAC. However, within the NBDC map records, Otter has not been recorded in the vicinity of Patrickswell in recent years. Records of Otter include:

- Seven counts of Otter spraint located at the Barnakyle Bridge/N20 approximately 0.7km north-east of the Plan boundary, during the Otter Survey of Ireland 1982
- Two Counts of otter spraint along the stream north of Monearla Cottage / N21, located approximately 2.6km south-west of the Plan boundary, during the Otter Survey of Ireland 1982.
- One count of Otter spraint located north-west of the site along the banks of the River Barnakyle, approximately 2.6km north-west of the site recorded during the National Otter Survey of Ireland 2010/12
- During a Road Kill Survey by www.biology.ie, a body of an otter was recorded east of Patrickswell in the Raheen town in 2008.

Otter from the River Mague potentially enter the River Barnakyle for foraging.

3.1.2 Aquatic Species

3.1.2.1 Fish

The following threatened fish species were recorded within the custom 10km polygon from NBDC:

- European Eel *Anguilla anguilla*
- Stone Loach *Barbatula barbatula*
- Minnow *Phoxinus phoxinus*
- Smelt *Osmerus eperlanus*
- Perch *Perca fluviatilis*
- Three-spined Stickleback *Gasterosteus aculeatus*

There have been no Inland Fisheries Ireland surveys carried out within the River Barnakyle, however, electrofishing surveys from the River Maigue, which the Barnakyle feeds into, include populations of Brown Trout, Lamprey, Minnow, Salmon, Stone Loach and Three-spined Stickleback, and it is not unlikely that these species would also swim upstream and be present within the Barnakyle. Salmon are a QI of the Lower River Shannon SAC. The Maigue River Trust website notes that: *Juvenile salmon are scarce or absent from the upper part of the Maigue, the upper Camoge tributaries and Glosa and Barnakyle rivers where poor water quality makes the water body unfavourable for salmon survival. Restoration of spawning habitat and good water quality is essential for the future of salmon in the Maigue catchment.*

There is no indication of whether Lamprey are present within the Barnakyle from the above data, but it is likely that suitable habitat is present for Brook Lamprey *Lampetra planeri*; River Lamprey *Lampetra fluviatilis* and potentially for Sea Lamprey *Petromyzon marinus*.

3.1.2.2 Amphibians

Common Frog (*Rana temporaria*) have been recorded under NBDC records in the Plan Area, and is protected under EU Habitats Directive Annex V.

3.1.3 Annex and QI Bird Species

Protected bird species under the EU Birds Directive were recorded. Their conservation concern status is also presented.

Table 3-1: Protected bird species within 5km of the site

Species	EU Birds Directive (and BoCCI status)	QI of Shannon and Fergus Estuaries SPA (NPWS, 2015a)
Red-necked Phalarope <i>Phalaropus lobatus</i>	EU Birds Directive Annex I BoCCI- Red List	No
Dunlin <i>Calidris alpina</i>	EU Birds Directive Annex I Red List	Yes
European Golden Plover <i>Pluvialis apricaria</i>	EU Birds Directive Annex I, Annex II, Annex III BoCCI- Red List	Yes
Goosander <i>Mergus merganser</i>	EU Birds Directive Annex II BoCCI- Amber List	No
Greater Scaup <i>Aythya marila</i>	EU Birds Directive Annex II, Annex III BoCCI- Amber List	Yes
Mediterranean Gull <i>Larus melanocephalus</i>	EU Birds Directive Annex I BoCCI- Amber List	Not a QI of the Shannon SPA, but an Annex I species
Merlin <i>Falco columbarius</i>	EU Birds Directive Annex I BoCCI- Amber List	Not a QI of the Shannon SPA, but an Annex I species
Northern Lapwing <i>Vanellus vanellus</i>	EU Birds Directive Annex II BoCCI- Red List	Yes

Species	EU Birds Directive (and BoCCI status)	QI of Shannon and Fergus Estuaries SPA (NPWS, 2015a)
Peregrine Falcon <i>Falco peregrinus</i>	EU Birds Directive Annex I BoCCI- Green List	Not a QI of the Shannon SPA, but an Annex I species
Jack Snipe <i>Lymnocyrtus minimus</i>	EU Birds Directive Annex II, Annex III BoCCI- Green List,	No
Garganey <i>Anas querquedula</i>	EU Birds Directive Annex II BoCCI- Amber List	No
Common Goldeneye <i>Bucephala clangula</i>	EU Birds Directive Annex II BoCCI- Red List	No
Common Snipe <i>Gallinago gallinago</i>	EU Birds Directive Annex II, Annex III BoCCI- Red List	No
Eurasian Wigeon <i>Anas penelope</i>	EU Birds Directive Annex II, Annex III BoCCI- Amber List	Yes
Northern Shoveler <i>Anas clypeata</i>	EU Birds Directive Annex II, Annex III BoCCI- Red List	Yes
Whooper Swan <i>Cygnus cygnus</i>	EU Birds Directive Annex I BoCCI- Amber List	Yes
Gadwall <i>Anas strepera</i>	EU Birds Directive Annex II BoCCI- Amber List	No
Common Coot <i>Fulica atra</i>	EU Birds Directive Annex II, Annex III BoCCI- Amber List	No
Eurasian Teal <i>Anas crecca</i>	EU Birds Directive Annex II, Annex III BoCCI- Amber List	Yes
Red-throated Diver <i>Gavia stellata</i>	EU Birds Directive Annex I BoCCI- Amber List	Not a QI of the Shannon SPA, but an Annex I species
Common Pheasant <i>Phasianus colchicus</i>	EU Birds Directive Annex II, Annex III	No
Hen Harrier <i>Circus cyaneus</i>	EU Birds Directive Annex I BoCCI- Amber List	Not a QI of the Shannon SPA, but an Annex I species
Eurasian Curlew <i>Numenius arquata</i>	EU Birds Directive Annex II BoCCI- Red List	Yes
Common Pochard <i>Aythya ferina</i>	EU Birds Directive Annex II, Annex III BoCCI- Red List	No
Little Egret <i>Egretta garzetta</i>	EU Birds Directive Annex I BoCCI- Green List	Not a QI of the Shannon SPA, but an Annex I species
Common Wood Pigeon <i>Columba palumbus</i>	EU Birds Directive Annex II, Annex III BoCCI- Green List	No
Rock Pigeon <i>Columba livia</i>	EU Birds Directive Annex II BoCCI- Green List	No
Common Kingfisher <i>Alcedo atthis</i>	EU Birds Directive Annex I BoCCI- Amber List	Not a QI of the Shannon SPA, but an Annex I species
Mallard <i>Anas platyrhynchos</i>	EU Birds Directive Annex II, Annex III BoCCI- Amber List	No
Tufted Duck <i>Aythya fuligula</i>	EU Birds Directive Annex II, Annex III BoCCI- Amber List	No
Annex I = Birds which are the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution		

Counts for the Lower River Shannon and River Fergus Estuaries SPA as baseline data for the Conservation Objectives supporting documentation (River Shannon and River Fergus Estuaries

Conservation Objectives Supporting Document, Appendix 9 (NPWS, 2012)) do not include areas along the Maigue. While some usage by QI birds in the Patrickswell area might occur, the areas around Patrickswell are unlikely to be of high importance. Following those birds identified in Table 3-1 the QI birds of the River Shannon and Fergus Estuaries include waders, which would preferentially utilise the estuaries sand and mudflats and marine habitats (e.g. Dunlin; Plover). The lack of freshwater bodies within the LAP area indicates that birds such as Teal, Scaup, Wigeon and Shoveler would be restricted to use of the Barnakyle intermittently or in low numbers. Curlew, Lapwing and Whooper swan may utilise grasslands for foraging within the Plan area, but again usage is likely to be intermittent due to the lack of wetlands in the Plan area, any usage would likely be as part of wider use of grasslands in the region.

3.1.4 Flora

Three Flora Protected Order 2022 Plants (FPO) have been previously recorded near to Patrickswell (NBDC, 2023., BSBI, 2023). This includes Opposite-leaved Pondweed *Groenlandia densa*, Meadow Barley *Hordeum secalinum* and Triangular Club-rush *Schoenoplectus triqueter*. Opposite-leaved Pondweed and Triangular Club-rush are noted as sub-type of Annex I habitat Water courses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation [3260], a QI of the Lower River Shannon SAC.

- Opposite-leaved Pondweed, which occurs in clear base rich waterbodies including canals, rivers, lakes.
- Meadow Barley occurs in meadow grasslands, occurring within the BSBI records in the north and north-east of Patrickswell.
- Triangular Club-rush is present in Ireland by the River Shannon (County Limerick) and its tributaries.

3.2 Annex Habitats

3.2.1.1 Floating River Vegetation

There is a broad definition of the features of this habitat type, covering from upland, flashy, oligotrophic, bryophyte- and algal-dominated rivers, to tidal reaches dominated by higher plants. Due to the frequent alteration of river communities from anthropogenic development, many of Ireland's rivers represent an altered state of the habitat. Neither a full monitoring programme or a typical species definition for this habitat have been established, however the habitat type is largely synonymous with Water Crowfoot *Ranunculus penicillatus*. Some of the characteristic species associated with this habitat type include Opposite-leaved Pondweed *Groenlandia densa*, Starworts (e.g., *Callitriche truncata*), Triangular Club-rush *Schoenoplectus triqueter*, Needle Spike Rush *Eleocharis acicularis* and Mud-dwelling Mosses (e.g., *Ephemerum* spp). While there exists no list of typical species for this habitat, based on the interpretation manual of EU habitats (CEC, 2013) the stereotypical plants also include: *Berula erecta*, *Fontinalis antipyretica*, *Myriophyllum* spp., *Potamogeton* spp., *Ranunculus aquatilis*, *Ranunculus peltatus*, *Ranunculus penicillatus*, *Ranunculus trichophyllus*, *Zannichellia palustris*. As there is a broad definition of the habitat features, and of species present, this Annex Habitat is difficult to define (NPWS, 2019a).

The characteristic species were searched for using the BSBI database portal within the River Barnakyle both adjacent and downstream of Patrickswell. Of such, the following species were recorded in and along the River Barnakyle since 2000:

- Opposite-leaved Pondweed *Groenlandia densa*
- Water-parsnip *Berula erecta*,
- Water Starwort *Callitriche stagnalis*

3.2.1.2 Alluvial Woodland

Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) [91E0] is a QI of the Lower River Shannon. There is an NPWS record of Alluvial Woodland located downstream of Patrickswell, along the Maigue, shown in Figure 3-1.

Overall mapping information is poor regarding Alluvial Woodland along the River Maigue. From Aerial photography, the River Maigue banks/riparian area is generally quite wooded, and therefore it should be assumed this habitat may be present downstream of the Plan boundary.

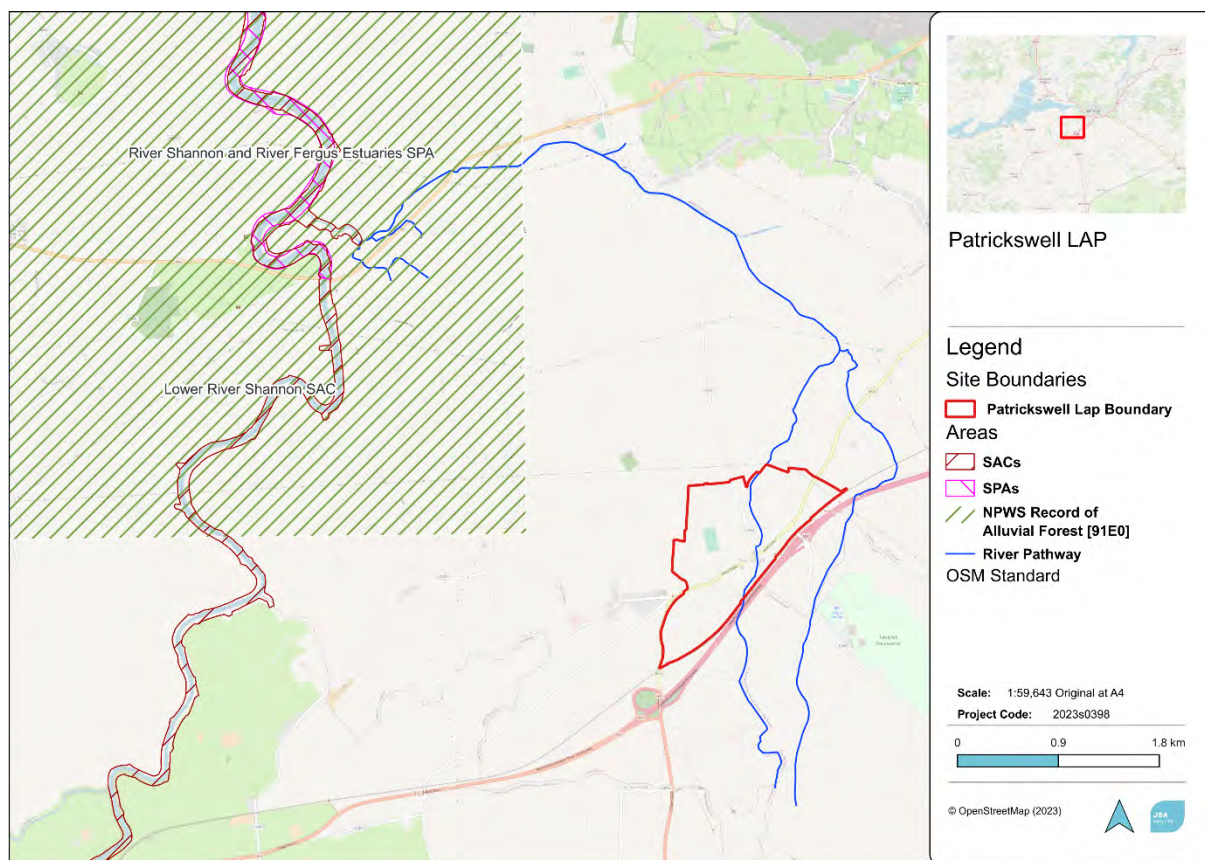


Figure 3-1: NPWS records of alluvial woodlands downstream

3.2.1.3 Estuaries

The receiving waterbody of the main river of the Maigue is considered Estuarine habitat as far upstream as Adare. The habitat at the confluence of the Barnakyle and the Maigue is mapped within conservation objectives document as Estuaries, with a presence of floating river vegetation. Conservation objective maps note the presence of *Subtidal sand to mixed sediment with Nephthys spp. community complex*.

3.3 Surface Waterbodies

The entirety of the proposed project is located within the Water Framework Directive (WFD) Shannon Estuary South catchment, and most of the plan is situated within the Ballynaclogh_SC_010 sub-catchment, while a small area in the south extends into the Maigue_SC_050 sub-catchment (EPA, 2023). There is one watercourse that flows through the village, which is the Barnakyle River (Barnakyle_020) which currently is projected "At Risk" and of "Moderate" WFD status. The Barnakyle flows north and connects the town to the River Maigue, and from there, Patrickswell is connected to the River Shannon and River Fergus. A tributary of the Barnakyle (EPA name Patrickswell 24) is also present along the LAP eastern boundary. This is considered to be part of the Barnakyle_020 watercourse. Other waterbodies that are located within the Zone of Influence (Zoi) of the Plan that also flow into the River Maigue are listed below in Table 3-2, which includes their WFD Risk and Status rating, and if they join the River Maigue upstream or downstream of where the River Barnakyle flows into the River Maigue.

Table 3-2: Rivers within the Zol of the project that flow into the River Maigue

Waterbody (WFD Name)	WFD Status	WFD Risk	Connection to River Maigue
Tonglee Stream Faha Stream (Both of Tonglee_010)	Poor	Review	Downstream of site
Ardlahan Stream Point Carriglogher (Both of Tobermurry_010)	Poor	Review	Downstream of site
East Carrig Stream (East Carrig_010)	Poor	Review	Downstream of site
Glascurram Stream (Mondelihy_010)	Poor	Review	Upstream of site
Old Kidimo Stream Kilmoreen River (Kilmoreen_010)	Poor	Review	Upstream of site
Mondelihy River (Mondelihy_010)	Poor	Review	Upstream of site
Greenagh River (Greenagh_010)	Poor	At Risk	Upstream of site
Gortnaganniff Stream Dunnaman Stream (Maigue_090)	Poor	Review	Upstream of site
Laskiltagh Stream (Maigue_080)	Poor	At Risk	Upstream of site
Croome Stream (Maigue_070)	Moderate	At Risk	Upstream of site
Camoge River (Camogue_030)	Poor	At Risk	Upstream of site
Granagh Stream (Maigue_050)	Good	Not at Risk	Upstream of site
Glesha Bui River (West Liskennet_010)	Poor	Review	Upstream of site

Large stretches of the main channel of the River Maigue are protected under the European sites designations i.e. Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA. Approximately 7.1km downstream from Patrickswell, a small section of the River Barnakyle is covered by the Lower River Shannon SAC. From this point, the Barnakyle River flows for an additional 0.7km before joining the River Maigue, where the water flows into the River Shannon and River Fergus Estuaries SPA.

3.4 Groundwater

Patrickswell village (and the plan boundary) is located primarily within the "Patrickswell" groundwater body, while some of the plan boundary extends into the Limerick City Southwest groundwater body. The Patrickswell groundwater body currently holds a 'Good' WFD status (2016-2021); and is considered to be 'Under Review'. Nearby, south of the plan boundary, is the Fedamore groundwater body.

The underlying bedrock of the Plan area is dominated by undifferentiated limestone of the Visean Limestones (undifferentiated) bedrock formation, and the soil of the town is chiefly derived of Made Ground, and its surrounding areas consist of till derived chiefly from limestone. The permeability of the

Plan's area is classed as *Moderate Vulnerability* with a low recharge capacity of 20%. Meanwhile the groundwater in the area of the town has an overall High vulnerability, with an area of Moderate vulnerability north of the town, and both *Extremely vulnerable*, and *Karstic Rock* at Surface located at the south of the town (Figure 3-2).

The aquifer within the underlying bedrock is considered to be *Locally important*. For most of the Plan area, the aquifer is '*Moderately Productive only in Local Zones*'. In the context of this Plan, this means that the low permeability and storage capacity for this type of aquifer, leading to a poor recharge acceptance. This leads to the water in this aquifer being slow to flow and limited to a poor network of fractures, fissure and joints, none of which are present within or adjacent to the Plan area. The absence of such recharge within the Plan area, results in a low level of retention and any water that enters the aquifer is likely to rapidly discharge to local streams, springs and seeps which in the context of the plan, would be the River Barnakyle.

There is a small section in the north of the Plan area that is located in the area of the Limerick City Southwest groundwater body, where the aquifer is '*Generally Moderately Productive*'. For this area, the flow of the groundwater is likely to be larger with links to dependable springs and a high rate of contribution from the groundwater to surface water bodies, which similarly would also result in a high discharge rate of groundwater into the River Barnakyle.

Another section in the south-east of the Plan is located within the area of the Fedamore groundwater body on an underlying bedrock that is considered to be '*Regionally Important*'. In this section of the plan, the aquifer is '*Karstified (diffuse)*', which is characterised by largely underground drainage, with most flow occurring through the more permeable, interconnected fissure/conduit zones, which may be several kilometres long, and has a high interconnection between surface and groundwater sources, which would also result in strong connections between the groundwater body and the River Barnakyle.

3.5 Wastewater

Patrickswell Sewage Scheme was completed in 2013 with a pumping station constructed at Barnakyle and is serviced by the Wastewater Treatment Works at Bunlickey.

As outlined in the Patrickswell LAP, Patrickswell's public water supply is currently provided from the Limerick City water supply. There is sufficient capacity available to supply the existing and projected needs of the village. Patrickswell is connected to Limerick Main Drainage via a pumping station at Barnakyle and wastewater is pumped to Raheen for treatment at the Wastewater Treatment Works at Bunlickey. This scheme replaced the existing sewerage system, which was at capacity and was inhibiting the growth of the settlement. The Wastewater Treatment Works at Bunlickey has sufficient capacity to cater for the existing and future population.

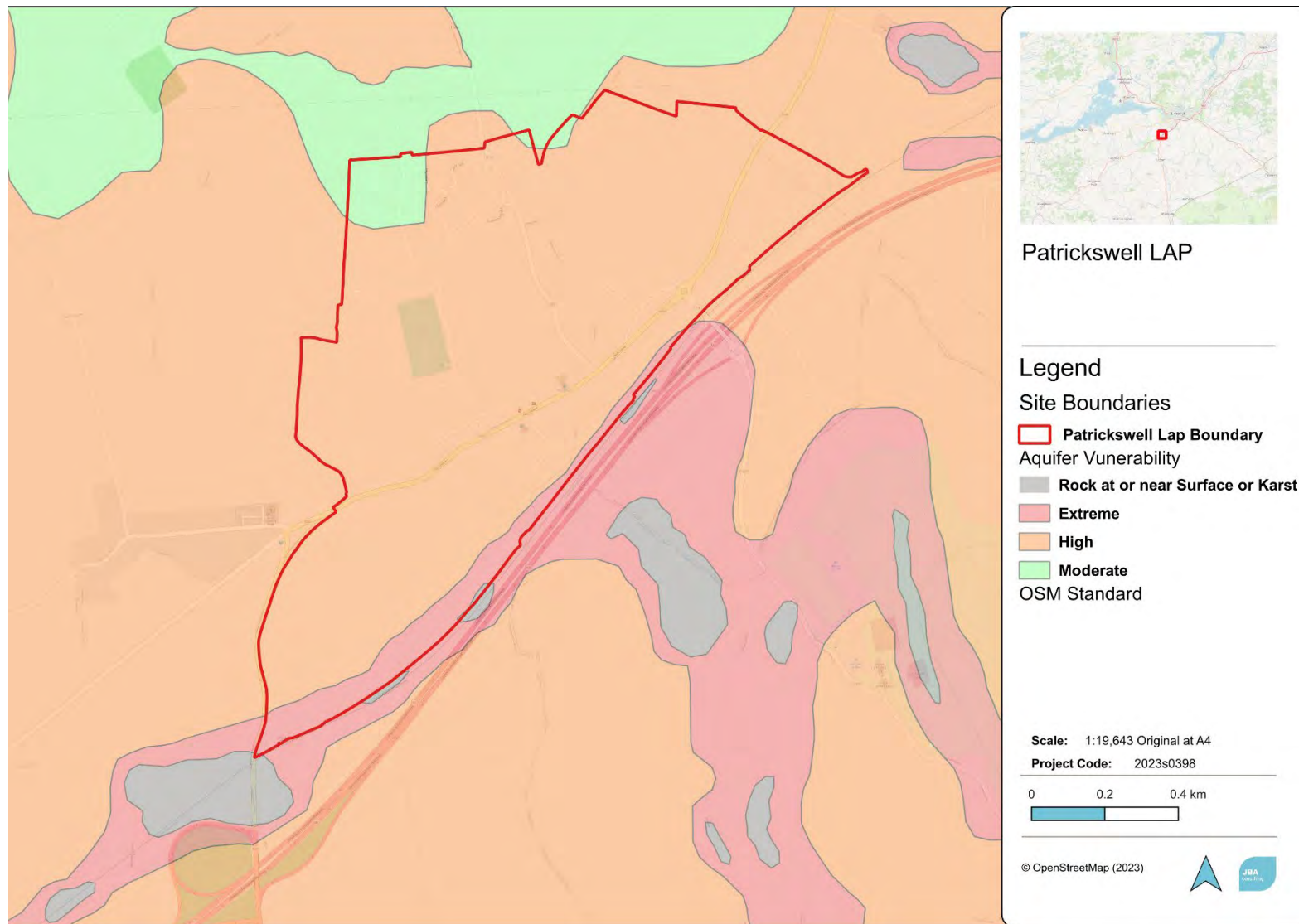


Figure 3-2: Aquifer vulnerability of the site (© OpenStreetMap contributors, 2023)

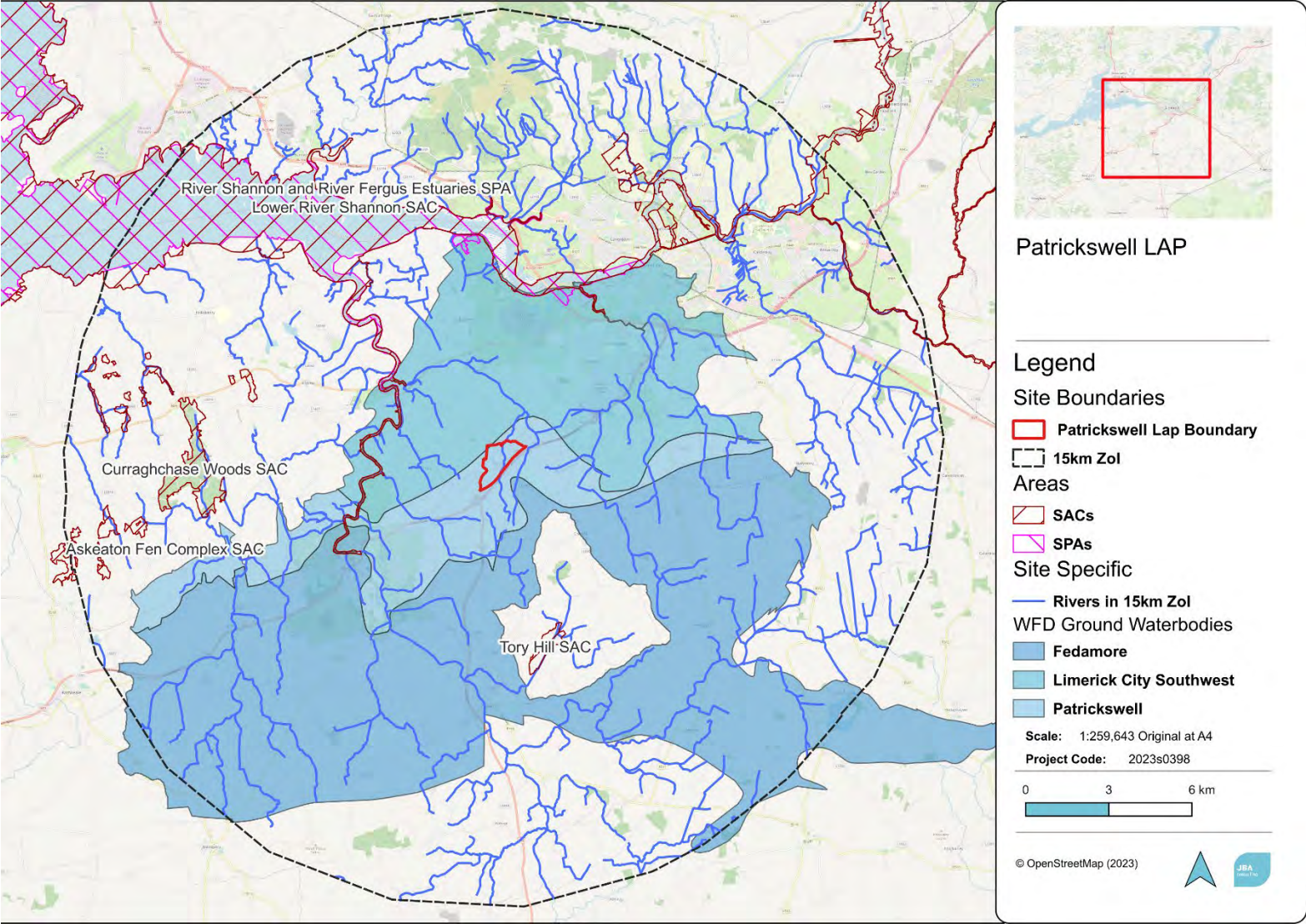


Figure 3-3: Local river waterbodies and groundwater bodies (© OpenStreetMap contributors, 2023)

4 European Sites, Pathways and Potential Impacts

4.1 Zone of Influence

The DEHLG (2009) guidance identifies that Screening for Appropriate Assessment of a plan or project should consider the following European (Natura 2000) sites:

- Any European sites within or adjacent to the plan or project area.
- Any European sites within the likely zone of impact of the plan or project. This is dependent on the nature and scale of the plan, with 15km generally recommended for plans, but potentially much less for projects.
- Any European sites that are more than 15km from the plan or project area, but may potentially be impacted upon, for example, through a hydrological connection.

When determining the Zol for this Plan, the nature and scale of the proposed policies and objectives are considered in relation to the conservation objectives of the European sites that may be connected to the Plan. For an impact to occur, a Source (potential impacts from the Plan), Pathway (e.g., surface water, groundwater, land or air connectivity) and Receptor (Qualifying Interests (QIs) of the European sites) must be present.

4.2 European sites within the Plan's Zol

There are four Special Areas of Conservation (SACs), and one Species Protection Area (SPA) within the 15km Zone of Influence of the plan. These are listed below in Table 4-1:

Table 4-1: European Sites within the vicinity of the Plan

European site	Site Code	Approximate direct distance from site	Approximate hydrological distance from site
Lower River Shannon SAC	002165	3.2km	6.8km
River Shannon and River Fergus Estuaries SPA	004077	3.7km	7.4km
Tory Hill SAC	000439	4.1km	n/a
Askeaton Fen Complex SAC	002279	8.5km	n/a
Curraghchase Woods SAC	000174	9.3km	n/a

These five European sites are shown in Figure 4-1 in relation to the Plan Boundary, and are further described below in Table 4-2.

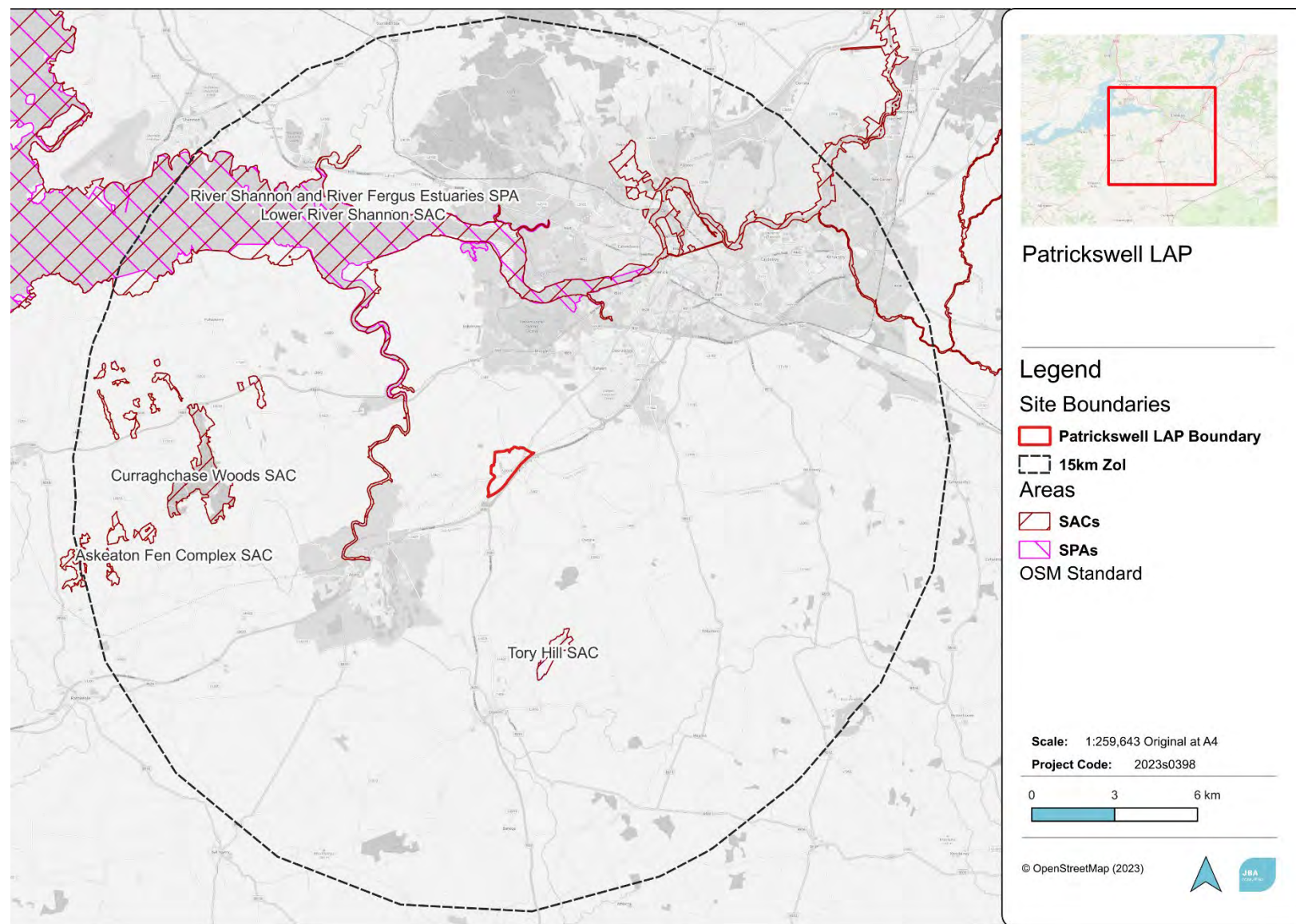


Figure 4-1: European sites within 15km of the site boundary (© OpenStreetMap contributors, 2023)

Table 4-2: Site briefs; Qualifying Interests; and project-relevant threats /pressures and their impacts and sources in relation to the European sites within the 5km Zol (including hydrological connectivity extension).

Site Name	Brief	Qualifying Interests	Project-relevant Threats / Pressures: Impact (Source)
Lower River Shannon SAC [002165]	The Lower River Shannon stretches a distance of approximately 120km, encompassing the Shannon, Feale, Mulkear and Fergus estuaries, forming the largest estuarine complex in Ireland. These estuaries feature a vast expanse of intertidal mudflats, often fringed with saltmarsh vegetation. The estuaries support the largest numbers of wintering waterfowl in Ireland, with Annex I Birds Directive species present, including both known wintering and breeding bird species. There is a resident population of Bottlenose Dolphin, the only population of this species in Ireland. There are five Annex II fish species found within the site including all three Irish Lamprey species, along with two fish listed within the Irish Red Data Book. While Freshwater Pearl Mussel <i>Margaritifera margaritifera</i> , another Annex II species occurs abundantly within the River Cloon (NPWS, 2013a).	<ul style="list-style-type: none"> - Sandbanks which are slightly covered by sea water all the time [1110] - Estuaries [1130] - Mudflats and sandflats not covered by seawater at low tide [1140] - Coastal lagoons [1150] - Large shallow inlets and bays [1160] - Reefs [1170] - Perennial vegetation of stony banks [1220] - Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] - <i>Salicornia</i> and other annuals colonising mud and sand [1310] - Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>) [1330] - Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] - Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260] - <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410] - Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0] - Freshwater Pearl Mussel <i>Margaritifera margaritifera</i> [1029] - Sea Lamprey <i>Petromyzon marinus</i> [1095] - Brook Lamprey <i>Lampetra planeri</i> [1096] - River Lamprey <i>Lampetra fluviatilis</i> [1099] - Salmon <i>Salmo salar</i> [1106] - Common Bottlenose Dolphin <i>Tursiops truncatus</i> [1349] - Otter <i>Lutra lutra</i> [1355] (NPWS, 2012a)	<ul style="list-style-type: none"> - Urbanised areas, human habitation Moderate Impact, Outside Source - Eutrophication (natural) Moderate Impact, Outside Source - Discharges Moderate Impact, Outside Source - Air pollution, air-borne pollutants Moderate impact, Outside Source (EEA, 2018a)
River Shannon and River Fergus Estuaries SPA [004077]	This site forms the largest estuarine complex in Ireland, covering the entire estuarine habitat from Limerick City as far as Doonahan in Co. Clare and Dooneen Point in Co. Kerry. The site is an SPA supporting widespread bird species and is noted as the most important coastal wetlands of the country for	<ul style="list-style-type: none"> - Cormorant <i>Phalacrocorax carbo</i> [A017] - Whooper Swan <i>Cygnus cygnus</i> [A038] - Light-bellied Brent Goose <i>Branta bernicla hrota</i> [A046] - Shelduck <i>Tadorna tadorna</i> [A048] - Wigeon <i>Anas penelope</i> [A050] 	<ul style="list-style-type: none"> - Urbanised areas, human habitation High Impact, Inside Source (EEA, 2020)

	birds, regularly in excess of 50,000 wintering and migratory waterfowl of many internationally important species (NPWS, 2015a).	<ul style="list-style-type: none"> - Teal <i>Anas crecca</i> [A052] - Pintail <i>Anas acuta</i> [A054] - Shoveler <i>Anas clypeata</i> [A056] - Scaup <i>Aythya marila</i> [A062] - Ringed Plover <i>Charadrius hiaticula</i> [A137] - Golden Plover <i>Pluvialis apricaria</i> [A140] - Grey Plover <i>Pluvialis squatarola</i> [A141] - Lapwing <i>Vanellus vanellus</i> [A142] - Knot <i>Calidris canutus</i> [A143] - Dunlin <i>Calidris alpina</i> [A149] - Black-tailed Godwit <i>Limosa limosa</i> [A156] - Bar-tailed Godwit <i>Limosa lapponica</i> [A157] - Curlew <i>Numenius arquata</i> [A160] - Redshank <i>Tringa totanus</i> [A162] - Greenshank <i>Tringa nebularia</i> [A164] - Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179] - Wetland and Waterbirds [A999] (NPWS, 2012) 	
Curraghchase Woods SAC [000174]	The site is located west of the plan area and is a mixture of woodland and wetland, characterised by glacial drift deposits over Carboniferous limestones. The main interest at the site is the presence of Lesser Horseshoe Bat hibernation roosts in the cellars of Curraghchase House, while the woodlands provide ideal foraging habitat for these bats, and this site is the largest known site for this bat species in Co. Limerick. Additionally, Desmoulin's Whorl Snail <i>Vertigo moulinsiana</i> , an Annex II species is present within the site's wetlands, along with two Annex I woodland habitats present within the site (NPWS, 2019b).	<ul style="list-style-type: none"> - Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0] - <i>Taxus baccata</i> woods of the British Isles [91J0] - Desmoulin's Whorl Snail <i>Vertigo moulinsiana</i> [1016] - Lesser Horseshoe Bat <i>Rhinolophus hipposideros</i> [1303] (NPWS, 2023) 	No relevant threats/ pressures from the Plan (EEA, 2019)
Tory Hill SAC [000439]	Tony Hill is an isolated, wooded limestone hill situated south of the Plan area, of importance as an example of a prime limestone hill in a region of volcanic intrusions of differing shape and geology. The site is of conservation interest for terrestrial and wetland habitat diversity. Ecological characteristics of note within this site include a presence of Bee Orchid, and the Annex I Habitats Alkaline Fen and Calcareous Fen	<ul style="list-style-type: none"> - Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites) [6210] - Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> [7210] - Alkaline fens [7230] (NPWS, 2018a) 	- Human induced changes in hydraulic conditions Moderate impact, Inside and Outside sources (EEA, 2018b)

	(NPWS, 2013b).		
Askeaton Fen Complex SAC [002279]	Askeaton Fen Complex consists of a number of small fens west of the Plan area. The area has undulating hills, and is underlain with Lower Carboniferous Limestone, the base of the hills has a diversity of fens, reedbeds with marl and peat deposits. The site is of value due to its support of two different types of fens that each exhibit sub-types. <i>Cladium</i> fen is listed as an EU Annex I Habitat priority habitat, while the habitats supply refuge for fauna in an area that is otherwise managed intensively (NPWS, 2014).	<ul style="list-style-type: none"> - Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> [7210] - Alkaline fens [7230] (NPWS, 2018b)	<ul style="list-style-type: none"> - Pollution to groundwater (point sources and diffuse sources) Moderate threat, Outside Source (EEA, 2018c)

4.2.1 An initial screening of European sites within 15km of the proposed works

Five European sites are located within 15km of the Plan Boundary. No further sites are hydrologically linked up to 20km. Some of these European sites can be further eliminated based on lack of pathways from the plan area.

In Table 4-3 below, these sites are further screened for pathways including surface water, groundwater, and air pathways, as well as disturbance to species if applicable. European sites are screened-in if they are determined to be within at least one pathway in the Zol.

Table 4-3: Further screening for pathways to European Sites

Site	Distance from Plan	Surface Water Pathway	Groundwater Pathway	Air Pathway	Disturbance Pathway	Pathway present?
Lower River Shannon SAC	3.2km	Yes - SAC is downstream of the Plan by 6.8km	Yes - Located within the Plan's groundwater body	No - Unlikely due to distance and prevailing wind	Yes - Assorted Annex II fish and aquatic mammals that are potentially present within the River Barnakyle.	Yes
River Shannon and River Fergus Estuaries SPA	3.7km	Yes - SPA is downstream of the Plan by 7.4km	No - While it is located within the Plan's groundwater body, it is unlikely to be impacted by any developments within the Plan from a groundwater pathway	No - Unlikely due to distance and prevailing wind	Species within the SPA will not be disturbed by works in the Plan area. Ex-situ habitat within the Plan area is not likely to be of high importance (lack of wetlands. Usage of sites can be considered at the project level). Patrickswell is not considered to be a key foraging, breeding or roosting area associated with the protection of birds as part of the SPA.	Yes
Tory Hill SAC	4.1km	No - Is not downstream of the Plan	No - Not located with the Plan's groundwater body	No - Unlikely due to distance and prevailing wind	N/A (no species QI)	No
Askeaton Fen Complex SAC	8.5km	No - Is not downstream of the Plan	No - Not located with the Plan's groundwater body	No - Unlikely due to distance and prevailing wind	N/A (no species QI)	No
Curraghchase Woods SAC	9.3km	No - Is not downstream of the Plan	No - Not located with the Plan's groundwater body	No - Unlikely due to distance and prevailing wind	Although Lesser Horseshoe Bats have been recorded in the vicinity of Patrickswell, populations in Curraghchase SAC will not be impacted following the 2.5km Zone of Influence for foraging and commuting routes (NPWS, 2018c).	No

4.3 Summary of Pre-Screening

Due to the lack of pathways based on preliminary screening on Sites within the Zol of 15km, the following European Sites will not be further assessed for potential impacts:

- Askeaton Fen Complex SAC
- Curraghchase Woods SAC
- Tory Hill SAC

The two European sites that were identified which have pathway receptors for potential likely significant effects arising from the implementation of the Plan are:

- Lower River Shannon SAC
- River Shannon and River Fergus Estuaries SPA

4.4 Potential Impacts from Plan on European Sites

Development for housing, business, infrastructure, services, and recreation/tourism promoted as part of the Patrickswell LAP can potentially have adverse impacts on the habitats and species for which European sites are designated.

These impacts can be direct, such as habitat loss, fragmentation, or degradation, or indirect such as disturbance or pollution from construction, transportation etc. They can include long-term effects associated with the operational phase of proposed developments or general population growth, and short-term effects arising from construction phases.

This chapter identifies the potential impacts and their pathways to European sites within and adjacent to Patrickswell which may arise from the Patrickswell LAP. It then goes on to identify the types of impacts/pathways to which the qualifying features present upon the European sites are particularly sensitive.

As outlined in the EC guidance on the assessment of plans and projects affecting European sites (EC, 2021), impacts that could potentially occur through the implementation of Plans are as follows in Section 6 below.

Table 4-4: Potential Hazards to European sites

Potential Hazard	Description
Habitat loss	This is a loss of habitat within the designated boundaries of a European site – it is expected that there would be no direct loss to development resulting from implementation of the LAP.
Habitat fragmentation	This is where activities result in the separation of available habitats or split extensive areas of suitable habitat. Most likely to affect species.
Changes in physical regime	These are changes to physical process that will alter the present characteristics of the European site e.g., fluvial, and geomorphological processes, erosion processes, deposition.
Physical damage	This includes recreational pressures such as trampling and erosion, and where sites are close to urban areas, other damaging activities may occur such as rubbish tipping, vandalism, arson, and predation, particularly by cats.
Habitat/community simplification	Changes to environmental conditions, due to human activities, which result in a reduction and fragmentation of habitats that will reduce biodiversity.
Disturbance (noise, visual)	Activities which result in disturbance, causing sensitive birds and mammals to deviate from their normal, preferred behaviour, such as construction, recreational, traffic.
Competition from invasive non-native species	Activities may cause the introduction or spread of invasive non-native animals and plants, which could result in changes to community composition and even to the complete loss of native communities.
Changes in water levels or tables	Activities that may affect surface and groundwater levels, such as land drainage and abstraction, may have adverse impacts on water dependant habitats and species.
Changes in water quality	Activities that may impact upon water quality, such as accidental pollution spills, run-off from urban areas, nutrient enrichment from agriculture, and discharge from sewage works, may adversely affect wetland habitats and species.
Changes to surface water flooding	Activities that may result in a reduction or increase in the frequency and extent of surface water flooding, which may affect riverine and floodplain habitats.
Turbidity and siltation	Increases in turbidity within water environments can impact upon aquatic plants, fish and wildfowl due to sedimentation and reduction in penetrable light.
Pollution	Activities that may lead to the release of pollutants to the air such as oxides of nitrogen, oxides of sulphur or ammonia, or pollutants deposited on the ground through acidification or terrestrial eutrophication via soil (deposition of nitrogen).

Table 4-5: Sensitivity of Qualifying Features to Potential Hazards

European site	Qualifying Interest	Habitat loss	Habitat fragmentation	Changes in physical regime	Physical damage	Habitat/ community simplification	Disturbance (noise/ visual)	Competition from invasive non-native species	Changes in water levels or table	Changes in water quality	Changes to surface water flooding	Turbidity and siltation	Pollution
Lower River Shannon SAC	Sandbanks which are slightly covered by sea water all the time [1110]	√		√	√	√		√	√	√	√	√	√
	Estuaries [1130]												
	Mudflats and sandflats not covered by seawater at low tide [1140]												
	Coastal lagoons [1150]												
	Large shallow inlets and bays [1160]												
	Reefs [1170]												
	Salicornia and other annuals colonising mud and sand [1310]												
	Perennial vegetation of stony banks [1220]	√		√	√	√		√	√		√		√
	Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	√		√	√	√		√					√
	Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330]	√		√	√	√		√	√	√	√		√
	Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]												
River Shannon and River Fergus Estuaries SPA	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410]	√	√	√	√	√		√	√		√	√	√
	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)	√		√	√	√		√	√	√	√	√	√
	Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation [3260]	√	√	√	√	√		√	√	√	√	√	√
	Freshwater Pearl Mussel <i>Margaritifera margaritifera</i> [1029]	√	√	√	√	√	√	√	√	√		√	√
	Sea Lamprey <i>Petromyzon marinus</i>												
	Brook Lamprey <i>Lampetra planeri</i>												
	Salmon <i>Salmo salar</i>												
	Common Bottlenose Dolphin <i>Tursiops truncatus</i> [1349]	√		√	√	√	√			√		√	√
	Otter <i>Lutra lutra</i>	√	√	√	√	√	√	√	√	√	√	√	√
	Cormorant <i>Phalacrocorax carbo</i> [A017]	√	√	√	√	√	√	√	√	√	√	√	√
Curraghchase Woods SAC	Whooper Swan <i>Cygnus cygnus</i> [A038]												
	Light-bellied Brent Goose <i>Branta bernicla hrota</i> [A046]												
	Shelduck <i>Tadorna tadorna</i> [A048]												
	Wigeon <i>Anas penelope</i> [A050]												
	Teal <i>Anas crecca</i> [A052]												
	Pintail <i>Anas acuta</i> [A054]												
	Shoveler <i>Anas clypeata</i> [A056]												
	Scaup <i>Aythya marila</i> [A062]												
	Ringed Plover <i>Charadrius hiaticula</i> [A137]												
	Golden Plover <i>Pluvialis apricaria</i> [A140]												
Curraghchase Woods SAC	Grey Plover <i>Pluvialis squatarola</i> [A141]												
	Lapwing <i>Vanellus vanellus</i> [A142]												
	Knot <i>Calidris canutus</i> [A143]												
	Dunlin <i>Calidris alpina</i> [A149]												
	Black-tailed Godwit <i>Limosa limosa</i> [A156]												
	Bar-tailed Godwit <i>Limosa lapponica</i> [A157]												
	Curlew <i>Numenius arquata</i> [A160]												
	Redshank <i>Tringa totanus</i> [A162]												
	Greenshank <i>Tringa nebularia</i> [A164]												
	Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179]												
Curraghchase Woods SAC	Wetland and Waterbirds [A999]	√	√	√	√	√	√		√	√	√	√	√
	Taxus baccata woods of the British Isles [91J0]	√	√	√	√	√		√					√
	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	√		√	√	√		√	√	√	√	√	√
	Desmoulin's Whorl Snail <i>Vertigo moulinsiana</i> [1016]	√	√	√	√	√		√	√	√	√		√

	Lesser Horseshoe Bat <i>Rhinolophus hipposideros</i> [1303]	√	√	√	√	√	√						
Tory Hill SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites) [6210]	√	√	√	√	√		√					√
	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> [7210]	√		√	√	√		√	√	√	√		√
	Alkaline fens [7230]												
Askeaton Fen Complex SAC	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> [7210]	√		√	√	√		√	√	√	√		√
	Alkaline fens [7230]												

4.5 Potential Impacts from the Plan

4.5.1 Introduction

Plans and projects have the potential to cause a number of direct and indirect effects on European sites via one or more pathways. Such potential effects include long-term effects associated with the operational phase of proposed developments or general population growth, and short-term effects arising from the development construction phases. The screening process will examine the potential for impact from this Plan in Section 6. The main potential effects are described below as part of the impact identification process.

4.5.2 Urbanisation

Urbanisation is a broad term that can act as a pathway to produce a number of often disparate impacts to European sites.

Note that full population data is absent at the time of this report due to the deferred national census due to COVID 19, which means population data is reliant upon the 2016 Census Data, and the 2021 Census population numbers are only available in limited areas of interest. According to the 2022 Census, Patrickswell had a population of 848 persons, representing a slight increase of ~0.1% on the 2016 population figure of 847 persons. The population of Patrickswell is therefore stable within the core area.

Census data recorded between 2006 and 2011 indicated a 9% decrease in population from the 2006 figure, which was 924. The population decreased significantly in the 2000's when compared to the period between 1991 and 2002, when the population decreased by 2%. Given the distance from the European sites and the stability of the population, urbanisation is not considered a potential impact, even with the planned increase in population for the area.

4.5.3 Hydrological Impacts

New development and population increase can result in hydrological effects to existing watercourses and groundwater resources. Such effects can include changes to surface and ground water flows, quality and levels; this can have subsequent effects on habitats and supported species. The main types of potential hydrological effects are as follows:

- *Water abstraction* – new developments would increase the demand for water resulting in increased levels of water abstraction and subsequently affect surface and/or ground water flow, quality and levels. Any such effects would be more extreme during the summer as water demand will peak at this time. The assessment of potential effects of increased water demand will consider how the public water supply system operates and how it is regulated with other water-resource consents. Patrickswell's public water supply is currently provided from the existing Newcastle reservoir in Castletroy, in the east of Limerick City, and there is capacity in the system to cater for the population growth anticipated over the lifetime of the Plan. (Irish Water, 2023)
- *Water discharges* – new developments could result in an increase in discharges to water via foul and surface water/storm water drainage (flood risk). This could also occur during construction phases (e.g., oil spillage or other pollution incidents from construction plant and machinery) but would be short-term and of reduced significance. Discharges can also occur during the operational phase of works through discharges to watercourses. Such discharges to watercourses normally require a licence from the EPA. Increased use of waterways by motor powered boats and oil from a higher number of cars using roads close to the watercourse network can also lead to impacts on water quality. Discharges can impact on surface water and ground water quality, quantity and flows. The water quality effects of the plan are likely to be either controlled by existing consent regimes (which must undergo AA) or have diffuse 'in-combination' effects that are difficult to quantify and therefore any assessment must focus on the development of suitable mitigating policy that will minimise the impacts of development on water quality.
- *Wastewater* - The Patrickswell Sewerage Scheme was completed in 2013, including a pumping station at Barnakyle, and a rising main to deliver wastewater to the Limerick Main Drainage Network at Raheen, for treatment at the Wastewater Treatment Works at Bunlickey in south-west Limerick, and discharges to the Shannon Estuary (Lower River Shannon SAC). The latest available Annual Environmental Report for the Limerick Bunlickey outfall (D0013-01) has found

that the WWTP discharge was not compliant with the Emission Limit Values (ELV's) set in the wastewater discharge license but is capable of meeting Urban Waste Water Treatment standards. The ambient monitoring results meets the required Environmental Quality Standards (EQS). The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009. Potential availability of capacity would depend on any additional load not resulting in a significant breach of the combined approach set out in Regulations of the Waste Water Discharge Regulations 2007. There are project upgrade works to be included in the next investment Programme from Irish Water from 2025-2029 and this along with existing capacity will accommodate the envisaged population growth to 2030.

The screening assessment will consider the potential for impacts on a European site due to changes in water levels and/or quality by taking into consideration the vulnerability of their interest features to such impacts, and the pathways i.e., the hydrological connectivity between the site and the areas proposed for development.

In line with the recent *People over Wind & Sweetman v Coillte Teoranta* Case C-323/1, policy or proposal-level protective and mitigation measures relating to water abstraction and/or water discharges will only be considered at the AA stage (NIR).

A large proportion of the activities which exploit water resources, such as agriculture, flood defence, recreation, power generation, fisheries or nature conservation, will not be directly controlled or influenced by options/policies contained within the Local Plan. Furthermore, specific consenting regimes, independent of the Local Area Plan, tend to regulate water supply and exploitation in relation to water-resource sensitive European sites. However, development promoted or supported by the Local Area Plan could increase demand for water.

Flooding events can lead to increased pollution impacts through surface water pathways, as floodwaters may cause discharge from sewage networks, slurry tanks, and petroleum tanks into the surrounding environment. There have been no recent flooding events in Patrickswell from the River Barnakyle recorded on Floodinfo.ie, however local information has indicted localised flooding due to culvert constrictions. There were also reports of surface water flooding at St. Mary's cemetery in August 31st, 2020.

A hydrological pathway has been identified between the site and the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA. This will be examined during the screening process.

4.5.4 Construction and Development

As the LAP area is at some distance from the nearest Natura sites, no direct impact is anticipated. Some of the general indirect impacts that can be associated with construction and development are indicated here. The potential for these impacts will be considered as part of the Screening process, in Section 6.

The River Barnakyle, which flows into the Lower River Shannon SAC approximately 6.8km downstream, lies within the Plan area. Although it is unlikely there will be any direct habitat loss, as there is no zoning for development within the boundary of the SAC, there is potential for fragmentation and degradation due to increased development; loss of functionally linked habitat; and temporary impacts such as release of pollutants during construction. Ongoing discharges from development may also cause hydrological impacts (see Section 4.3.2 above).

Aquatic species such as Salmon and Lamprey may be adversely impacted through impacts on water quality associated with construction and development such as release of sediments or other polluting/deleterious matter to the watercourses; degradation of the riparian zone e.g. through riparian tree cutting - riparian cover can provide a moderating influence on instream temperatures for example, as well as providing cover for animals such as otter. Disturbance during construction, and potentially operational activities could also impact otter.

Pollution events may degrade the Annex I habitat Water courses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation, and to a lesser extent estuarine and brackish habitats.

Birds may also be impacted by disturbance through construction; loss of supporting habitat for feeding and roosting; and potentially through release of polluting material to the environment, particularly those with potential for bioaccumulation in the environment.

4.5.5 Transport and related infrastructure

To enhance the local economy of Patrickswell and to promote residential, commercial and recreational development, transport and its related infrastructure will likely increase. New or additional transport infrastructure to support expanding development can have impacts during construction and operation, and can act as a pathway to produce several often-disparate impacts to European sites including:

- Loss of supporting habitats, damaging or changing feeding and roosting located used by wetland birds that are not within the boundaries of the designated site but that provide important functional habitat linkages, can also be a significant impact.
- Habitat fragmentation, whereby new development results in the separation of available habitats or splits extensive areas of suitable habitat. It is most likely to impact upon species.
- Disturbance (noise and visual) associated with both the construction phase (e.g., from plant movements, machinery) and also the operational phase (e.g., increased traffic). This typically affects sensitive species such as birds and mammals causing them to deviate from their normal preferred behaviour.
- Air pollution from increased traffic both during the construction and operational phases.

The R526 Road passes through the centre of Patrickswell, however due to the proximity of the M20 being located approximately 200m south-east of the village, the road is not heavily used by commuters. An Bord Pleanála approved the Foynes to Limerick Road August 2022. The location of this Road is proposed to the south-west of the village and will be joining the M20 at the Attyflin junction approximately 1.2km south-west of Patrickswell. An Appropriate Assessment (NIS) has been undertaken for this planned road, which will have mitigated impacts.

Development of transport infrastructure within the Plan area may have an impact on the Lower River Shannon SAC due to proximity.

4.5.6 Air Quality Effects

Given the traffic issues in the plan area due to the close proximity of the village to the M20, the pollutants of most concern are those whose main source is traffic such as Particulate Matter and Nitrogen Dioxide.

New developments and an increase in population have the potential to result in increased use of the road network by vehicles, which could have adverse effects on air quality. This could have subsequent effects on habitats sensitive to air quality changes and higher deposits of nitrogen dioxide, particulates and sulphur dioxide (diesel trains) such as on bogs and peatlands. For example, there is the potential for effects on the health of *Sphagnum* (which is critical to the ability of the degraded raised bog to re-establish actively growing peat within the site). However, any European Sites that has QI's sensitive to air pollution (e.g., Askeaton Fen SAC, Tory Hill SAC) are at a distance in which there will be no likely effects.

Air Quality Index for the area is overall good. Note the nearest air quality station is Station 75, Askeaton and Station 85, Henry Street Limerick City (<https://airquality.ie/station/EPA-75>).

It should be noted, that the likelihood of this effect is greatly reduced as the distance increases between the deposit area (typically the road network) and the European site. Pollutant levels can be expected to fall substantially at a distance less than 50m from the source and can be expected to fall to background levels at a distance of more than 200m. Smithers (et al. 2016) report that, in relation to NO_x and NO₂ associated with vehicle emissions, levels are greatest within the first 50-100m from the road, but may be discernible at greater distances. However, heavy metals from vehicle emissions decline rapidly within the first 5-10m and may not be discernible beyond 50m from the roadside.

There are no European sites that are located within 200m of the Plan area, and there are no QIs of European sites that are threatened by air pollution from proposed development within the Plan.

4.5.7 Other impacts

The invasive non-native species American Mink *Neovison vison* is known to be a problem to native species on the River Maigue and is likely to be prominent along its tributaries. It is likely that this species

is directly impacting QIs of the Lower River Shannon SAC Sea Lamprey *Petromyzon marinus*, Brook Lamprey *Lampetra planeri*, River Lamprey *Lampetra fluviatilis*, Salmon *Salmo salar* and indirectly through competition for food and habitat to Otter *Lutra lutra*.

5 Other Relevant Plans and Projects

5.1 Cumulative Effects

As part of the Screening for an Appropriate Assessment, in addition to the proposed Plan, other relevant projects and plans in the region that may induce cumulative impacts must also be considered at this stage.

5.2 Plans

Due to its proximity with Limerick city, and the stated integration with the Limerick Development Plan, the following projects or plans were identified as potential sources of cumulative impacts:

- Limerick Development Plan 2022-2028
- National Planning Framework - Project Ireland 2040
- Regional Spatial and Economic Strategy (RSES) for the Southern Region 2019-2031
- Limerick Climate Change Adaptation Strategy 2019-2024
- N69/M21 Foynes to Limerick Road (including Adare Bypass)
- Limerick | Shannon Metropolitan Area Transport Strategy
- Capacity Extensions at Shannon Foynes
- Third Cycle River Basin Management Plan for Ireland 2022-2027

5.2.1 Limerick Development Plan 2022-2028

This is the current development plan for Limerick and will continue to have effect until a new Development Plan for Limerick is prepared. The most recent plan was adopted by the Elected Members of Limerick City and County Council at a Special Meeting on 17th June 2022 and came into effect on 29th July 2022 (LCCC, 2022).

The purpose of each Development Plan or Strategy is to set out the overall strategy for the proper planning and sustainable development of the area. The Plans seek to develop and improve, in a sustainable manner, the social, economic, cultural and environmental assets of each county.

Biodiversity Conservation and Management supports are laid out in each Plan and Strategy to support these objectives. All European Sites within the considered zone of influence of each Plan, must be assessed for potential to be impacted by each Plan and for there to potentially be in-combination impacts as a result of each Plan. County Development Plans are designed to be taken in conjunction with other similar plans and programmes, to have the overall effect of strengthening the management of and enhancing the protection and conservation of European Sites. Specific statements, policies and objectives are formulated within each Plan to allow the Council to take appropriate steps to avoid the deterioration of European Sites. Each Plan updates the policies and objectives of the Council in accordance with the Regional Spatial and Economic Strategies and National Policy. The outcomes of these Plans are Projects that will in themselves, require specific Natura Impact Statements (NIS) where relevant.

Prior to any works commencing on a project that may impact the European Site network, the project shall be subject to a full Natura Impact Assessment in accordance with the requirements of Article 6(3) of the EU Habitats Directive (Directive 92/43/EEC). This requirement is made explicit in each Plan.

Therefore, provided that any works that may occur as a result of the Plan are assessed for individually, or included in the NIS for the Plan, the Plan should not significantly adversely affect relevant European Sites in combination with the proposed LAP.

5.2.2 National Planning Framework - Project Ireland 2040

National Planning Framework - Project Ireland 2040 is the government's long-term overarching strategy to make Ireland a better country for all of its people. Alongside the development of physical

infrastructure, Project Ireland 2040 supports business and communities across all of Ireland in realising their potential. The National Development Plan and the National Planning Framework combine to form Project Ireland 2040. Development of infrastructure may have localised adverse impacts. Actions that may arise as a result of Project Ireland 2040 will be considered at a project level, which will ensure that any cumulative or in-combination impacts are addressed. Due to the high-level nature of this Plan, it is not possible to determine with confidence the likely impacts or mitigation measures required yet in detail.

Therefore, cumulative or in-combination impacts may arise as a result of projects that may occur as a result of Project Ireland 2040. Any projects that may arise as a result of this plan will have a project level AA which will assess these in detail and provide suitable mitigation measures where appropriate.

5.2.3 Regional Spatial and Economic Strategy (RSES) for the Southern Region 2019-2031

The Southern Regional Assembly has prepared a Regional Spatial and Economic Strategy (RSES) for the Southern Region for 2019-2031, which came into effect on 31st January 2020. The RSES provides a long-term, strategic development framework for the future physical, economic and social development of the Southern region including County Limerick.

The RSES aims to provide a strategy for growth in a sustainable way, which includes integrating the value of biodiversity into the economy as well as threats and pressures. This includes protecting the European Sites Network, providing environmental assessments for projects, plans and activities (e.g., EclA reports, and SEA, EIA and AA processes).

5.2.4 Limerick Climate Change Adaptation Strategy 2019-2024

Limerick City and County Council has developed a 5-year Climate Change Adaptation Strategy which sets out a vision for a climate ready Limerick City and County, that understands how climate change will affect their communities and businesses, as well as setting out how the County will work together to reduce the risk and avail of the opportunities that climate change will bring. The strategy has been through a Strategic Environmental Assessment Screening (LCCC, 2019a) and an AA screening (LCCC 2019b), where these reports have concluded that the strategy will have no significant effect on local environmental features or on European sites, respectively.

5.2.5 N69/M21 Foynes to Limerick Road (including Adare Bypass)

This project promotes efficient and effective transport links in the Munster region, improving connectivity of Foynes Port, Limerick and its surrounding areas. The project is a proposed 35km length of motorway upgrade from Attyflin to Rathkeale, while connecting the port of Foynes to the motorway network. The project consists of:

- Approx.15.6 km dual carriageway from Foynes to Rathkeale (with approx.1.9km single carriageway link road between Ballyclogh and Askeaton),
- Approx.17.5 km motorway from Rathkeale to the existing motorway network at Attyflin (N21/N20/M20 junction),
- A Service Area for Heavy Goods Vehicles near Foynes.

This plan has undergone an AA Screening (AECOM, 2019) and has identified four different European Sites as being potentially affected by its development, namely the Lower River Shannon SAC, the River Shannon and River Fergus Estuaries SPA, the Curraghchase Woods SAC and the Askeaton Fen Complex SAC. An accompanied Natura Impact Statement has been prepared (AECOM, 2019), the mitigation measures outlined within have ensured that the proposed road development would not, by itself or in combination with other plans or projects, adversely affect the integrity of any of these sites.

5.2.6 Limerick | Shannon Metropolitan Area Transport Strategy

Included within the Iarnród Éireann Rail Freight Strategy 2040 and the Limerick-Shannon Metropolitan Area Transport Strategy (LCCC, 2022), is the commitment to the reinstatement of the 42km stretch of freight rail between Limerick and Foynes, which includes utilisation of the station at Adare. While this line is initially intended for freight services, the works outlined for this development include:

- Vegetation clearance and removal of existing track.
- Replacement of track formation and installation of a new ballast bed to current Iarnród Éireann standards.

- Rehabilitation and / or renewal of bridges and culverts.
- Supply and installation of new rail and concrete sleepers along the entire route.
- Renewal of road infrastructure at public road level crossings.
- Renewal of accommodation crossings.
- Renewal of lineside fencing.
- Installation of infrastructure to accommodate the next phase of the project.

The AA/NIS prepared in support of the Limerick-Shannon Metropolitan Area Transport Strategy determined that, in the absence of appropriate avoidance/mitigation measures, it could result in adverse effects on site integrity for the Lower River Shannon SAC, Curraghchase Woods SAC, Askeaton Fens Complex SAC, Tory Hill SAC, Ballyallia Lough SPA, Lough Derg (Shannon) SPA and River Shannon and River Fergus Estuaries SPA in view of their Conservation Objectives.

Based on the AA Screening and NIS published as part of the N69/M21 Foynes to Limerick Road (including Adare Bypass) mitigation measures have been included in the Limerick-Shannon Metropolitan Area Transport Strategy AA to ensure that they would have no significant effect, alone or in-combination, on the Conservation Objectives of each of the Qualifying Interests of the European Site affected by these schemes.

5.2.7 Capacity Extensions at Shannon Foynes

The project is to facilitate capacity extension at Shannon Foynes Port. This requirement to extend Port capacity is responsive to a historic pattern of commercial growth through the Port of Foynes consistent with the projections envisaged in the Port Company's spatial and commercial masterplan – 'Vision 2041', and the resultant fruition of those projections experienced to date. This capacity extension is provided in two interrelated ways – increased capacity of the quay wall, and increased capacity of supporting landside storage facilities and logistics. Consequently, the project includes two specific elements of development and operational activities as follows:

- Jetty Extension
- Durnish Land Development

This project is forecast to influence the length of the Shannon Estuary, including the port facilities at Foynes, Limerick Docks and Shannon Airport, and with commercial jurisdiction over marine activities on a 500km² area on the Estuary itself.

These proposed procedures have undergone an AA Screening (RPS, 2018) which identified two European Sites; Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA, that would be susceptible to the impacts of deteriorated water quality, significant underwater noise, aerial and visual noise disturbance, and habitat loss. The accompanied NIS has been completed, in which further investigation ruled out adverse effects would be likely as a result of aerial noise and visual disturbance, and habitat loss without mitigations necessary. Mitigation measures were outlined for reducing the risk of pollution incidents on Annex I habitats, while mitigations were also outlined for both pollution incidents and noise disturbance on Annex II species. Following the mitigations provided, it was concluded that there would be no significant effects which would adversely affect the European Sites.

5.2.8 Third Cycle River Basin Management Plan for Ireland 2018-2021 / 2022-2027

The 2nd cycle River Basin Management Plan (RBMP) for Ireland 2018-2021 sets out the actions that Ireland will take to improve water quality and achieve 'good' ecological status in water bodies (rivers, lakes, estuaries and coastal waters) by 2021 (DoHPLG, 2018a). Changes from previous River Basin Management Plans is that all River Basin Districts are merged as one national River Basin District. The Plan provides a more coordinated framework for improving the quality of our waters — to protect public health, the environment, water amenities and to sustain water-intensive industries, including agri-food and tourism, particularly in rural Ireland.

The first cycle of River Basin Management Plans included the Eastern River Basin District - River Basin Management Plan 2009 – 2015 (WFD, 2010). The plans summarised the waterbodies that may not meet the environmental objectives of the WFD by 2015 and identified which pressures are contributing to the environmental objectives not being achieved. The plans described the classification results and

identified measures that can be introduced in order to safeguard waters and meet the environmental objectives of the WFD:

- Prevent deterioration of water body status.
- Restore good status to water bodies.
- Achieve protected areas objectives.
- Reduce chemical pollution of water bodies.

The River Basin Management Plan for Ireland (2018-2021) outlined the new approach that Ireland will take to protect our waters over the period to 2021. It builds on lessons learned from the first planning cycle in a number of areas:

- Stronger and more effective delivery structures have been put in place to build the foundations and momentum for long-term improvements to water quality.
- A new governance structure, which brings the policy, technical and implementation actors together with public and representative organisations. This will ensure the effective and coordinated delivery of measures.

Ireland's third River Basin Management Plan 2022-2027 (DoHLGH, 2021) was out for public consultation until March 31st 2022. The Consultation report was published in July 2022. Following review of the submissions, the DoHLGH will commence a review and where necessary update the draft RBMP with a view to finalisation and publication in Q3/Q4 of 2022.

The 3rd cycle draft Catchment Reports were published in August 2021. The draft Catchment Reports provide a summary of the water quality assessment outcomes for respective catchments, including status and risk categories, significant threats and pressures, details on protected areas and a comparison between cycle 2 and cycle 3.

The third cycle draft Catchment Report for Shannon Estuary South Catchment (Catchment Science & Management Unit, 2021) identified that between Cycles 2 and 3 the status of waterbodies has been consistent for the most part. The overall change in quality between Cycles 2 and 3 include 1 lake waterbody that has dropped from a High Status to a Good Status, there are 62 waterbodies which are achieving a Good Status, which remains an unchanged number between Cycles, however this includes 7 waterbodies that declined to Moderate Status, and 7 which were increased to Good Status, 24 waterbodies achieving a Moderate Status which is an increase by five waterbodies, 24 achieving a Poor Status which is a decrease of five waterbodies, and 1 achieving a Bad Status which is an increase of one. Additionally, there are 40 unassigned waterbodies, which remains unchanged between Cycles.

The Third Cycle River Basin Management Plan for Ireland 2022-2027 is not anticipated to contribute to cumulative or in-combination effects.

5.3 Summary

The Limerick Development Plan 2022-2028 and Local Development Plan including Foynes to Limerick Road, Limerick Climate Change Adaptation Strategy, Limerick | Shannon Metropolitan Area Transport Strategy, Adare Flood Relief Scheme, National Planning Framework and River Basin Management Plan are considered in combination with the currently proposed LAP in the Screening Assessment section below.

6 Screening Assessment

This screening exercise will focus on assessing the likely adverse effects of the LAP on the European sites identified in Section 5 above.

This section considers the development policies and written statement of the Draft Patrickswell LAP and identifies whether or not they are likely to have significant effects on European sites, either alone or in-combination with other plans. Section 4.2 identifies that the following European sites to be assessed are:

- Lower River Shannon SAC,
- River Shannon and River Fergus Estuaries SPA.

6.1 Introduction

Assessment of the potential impacts of the Draft Patrickswell LAP aims objectives, strategies and policies is required under regulation 42 of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011).

This section aims to identify whether the aims, objectives, strategies and policies are likely to have a significant effect, either alone, or in-combination with other projects and plans, on the European sites within the Zol.

The 'screening' process addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3) of the Habitats Directive:

- Is the plan or programme directly connected to or necessary for the management of the site; and
- Will the plan or programme, alone or in-combination with other plans and projects, have a significant effect on a European site in view of its conservation objectives.

If the effects are deemed to be significant, potentially significant or uncertain, then the plan or programme that is under assessment is subject to a Stage 2 Appropriate Assessment, reported in the form of a NIR.

The aims, objectives, strategies and policies of the Patrickswell Draft LAP are not directly connected to the management of any European site; however, they could have potential to cause significant effects on European Sites.

6.2 Screening Methodology

In accordance with DEHLG guidance, the key to determining if an AA is required for a Plan, is in the assessment of whether the plan and its policies and objectives are likely to have a significant effect on a European site.

For this process, the screening of this plan has been broken down into 4 steps:

1. Description of the programme (Section 2).
2. Screening of European sites within the Zol of the plan dependent on the presence of potential pathways and nature of the qualifying interests.
3. Assessing the measures to identify potential impacts. Determining the significance of these potential impacts and the requirement for follow up assessments.
4. Screening Statement with conclusion.

6.2.1 The Precautionary Principle

If there is uncertainty, and it is not possible, based on the information available, to confidently determine no likely significant effects on a site then the precautionary principle will be applied, and the plan will be subject to an AA.

6.2.2 Mitigation, Avoidance and Protective Measures

Following the *People over Wind & Sweetman v Coillte Teoranta* Case C-323/17, the assessment does not consider protective, avoidance or mitigation measures for Stage 1 Screening.

6.2.3 Source-Pathway-Receptor Model

Potential adverse impacts that could cause a likely significant effect on the qualifying interests of the European sites, or the sites as a whole, are considered using three main pathways: surface water, groundwater and land and air pathways.

Surface water pathways can result in impacts where material entering the surface water drainage are carried in this water to sites that are connected downstream and can therefore impact surface water bodies themselves, and surface water dependent species and habitats that rely on them.

Groundwater pathways can transmit impacts where there is contamination of water entering the groundwater body which is then discharged (sometimes over periods of several decades) and impacts groundwater dependent habitats and species that rely on them.

Land pathways are related to physical disturbance of habitats or species and generally only occur over short physical distances (this can also include habitats for aquatic species). Air pathways relate to the transport of material, generally dust and atmospheric pollution, via air movements that are subsequently deposited on habitats and species in or connected to the European sites.

Detail on the surface water, groundwater and species (land pathways) in Patrickswell are provided in Section 3: Existing Environment.

6.3 Screening of European Sites

The European sites that were identified which have pathway for potential likely significant effects arising from the implementation of the Plan are:

- Lower River Shannon SAC,
- River Shannon and River Fergus Estuaries SPA.

This section identified further the possible receptors present and if the Plan will have any impacts via identified pathways which were surface water connection, groundwater connection, and disturbance pathways.

Table 6-1: Summary table of pathways to European Sites, as identified in Section 4.

Site	Distance from Plan	Surface Water Pathway	Groundwater Pathway	Air Pathway	Disturbance Pathway	Pathway present?
Lower River Shannon SAC	3.2km	Yes - SAC is downstream of the Plan by 6.8km	Yes - Located within the Plan's groundwater body	No - Unlikely due to distance and prevailing wind	Yes - Assorted Annex II fish and aquatic mammals that are potentially present within the River Barnakyle.	Yes
River Shannon and River Fergus Estuaries SPA	3.7km	Yes - SPA is downstream of the Plan by 7.4km	No - While it is located within the Plan's groundwater body, it is unlikely impacted by any developments within the Plan from a groundwater pathway due to distance and presence of watercourses between the LAP and the SPA.	No - Unlikely due to distance and prevailing wind	No - Patrickswell is not considered to be a key foraging, breeding or roosting area associated with the protection of birds as part of the SPA	Yes

6.3.1 Lower River Shannon SAC

The Lower River Shannon SAC is located 3.2km away from the Plan Area, and 6.8km via the Barnakyle River, which is a tributary of the River Maigue.

The Barnakyle River likely supports the Annex II species of the SAC including Otter, and aquatic species Sea Lamprey (*Petromyzon marinus*), Brook Lamprey (*Lampetra planeri*), River Lamprey (*Lampetra fluviatilis*), and Atlantic Salmon (*Salmo salar*).

The sub-catchment assessment notes Barnakyle_020 is also at Poor ecological status. There was historically an issue with municipal wastewater, however this has been remedied through pumping the wastewater to the town. However, both baseline concentration and annual average phosphate concentrations remain elevated above the EQS for Good. The significant pressure(s) is unknown and further characterisation is required, but nitrates and nitrogen excesses are noted as causing poor quality (WFD, Cycle 2, Subcatchment Ballynacclough_SC_010 (catchments.ie, 2019) .

This SAC is designated for 14 Annex I habitats and 7 Annex II species, however not all of these Qualifying Interests are present within the Barnakyle River.

Qualifying Interests

The site is a SAC selected for the following habitats and species listed on Annex I / II of the EU Habitats Directive (* = priority; numbers in brackets are European Site codes):

- [1110] Sandbanks
- [1130] Estuaries
- [1140] Tidal Mudflats and Sandflats
- [1150] Coastal Lagoons*
- [1160] Large Shallow Inlets and Bays
- [1170] Reefs
- [1220] Perennial Vegetation of Stony Banks
- [1230] Vegetated Sea Cliffs
- [1310] Salicornia Mud
- [1330] Atlantic Salt Meadows
- [1410] Mediterranean Salt Meadows
- [3260] Floating River Vegetation
- [6410] Molinia Meadows
- [91E0] Alluvial Forests*
- [1029] Freshwater Pearl Mussel (*Margaritifera margaritifera*)
- [1095] Sea Lamprey (*Petromyzon marinus*)
- [1096] Brook Lamprey (*Lampetra planeri*)
- [1099] River Lamprey (*Lampetra fluviatilis*)
- [1106] Atlantic Salmon (*Salmo salar*)
- [1349] Bottle-nosed Dolphin (*Tursiops truncatus*)
- [1355] Otter (*Lutra lutra*)

However, as this is a large site encompassing both estuarine, terrestrial and riparian habitats and species, not all QIs are located within the Zone of Influence of the Patrickswell LAP. Based on the available mapping and baseline data, the following QIs have been screened-in:

- [1130] Estuaries
- [3260] Floating River Vegetation
- [91E0] Alluvial Forests*
- [1095] Sea Lamprey (*Petromyzon marinus*)
- [1096] Brook Lamprey (*Lampetra planeri*)

- [1099] River Lamprey (*Lampetra fluviatilis*)
- [1106] Atlantic Salmon (*Salmo salar*)
- [1355] Otter (*Lutra lutra*)

6.3.2 River Shannon and River Fergus Estuaries SPA

River Shannon and River Fergus Estuaries SPA is located 5.2km away, or 8.3km downstream of the River Maigue from the Draft Patrickswell Plan Boundary.

The SPA is the most important coastal wetland site in the country and regularly supports in excess of 50,000 wintering waterfowl. This SPA therefore supports the largest numbers of wintering waterfowl in Ireland. Twenty-one Qualifying Interest birds species are protected under this SPA, of which the following have been recorded in the nearby town of Adare: Eurasian Curlew, Eurasian Teal, Eurasian Wigeon, European Golden Plover, Northern Lapwing, Whooper Swan.

Some bird species may pass through the site whilst on migration in spring and/or autumn, or a few may be over-wintering or breeding within the Patrickswell boundary. Given the hydrological pathways present all birds listed as qualifying interest of the SPA are considered within this assessment. See Table 4-2 for a list of the QI species of the SPA. None are excluded at this time.

6.4 Examination of the Source-Pathway-Receptor Model for Impact

Table 6-1 has summarised four potential pathways for impact to the Natura Network - a hydrological pathway to the Lower River Shannon SAC; a hydrological pathway to the River Fergus and Lower River Shannon Estuaries; a potential groundwater link from Patrickswell to the Lower River Shannon SAC; and an aquatic species based link on ex-situ habitat in the vicinity of Patrickswell.

Surface water pathway to the SAC and SPA:

The SAC and the SPA are 6.8km and 7.4km from the LAP area. The distance from the SAC; the dilution rate of any discharges from the LAP area that would be achieved over that distance, including the confluence with other tributaries of the Maigue; the nature of the receiving habitats downstream of the confluence of the Barnakyle and the Maigue (brackish estuarine habitats, which are not highly sensitive to sedimentation), indicate a weak hydrological pathway and consequently a weak source-pathway-receptor model for impact on the habitats of the Lower River Shannon SAC.

Similarly, the hydrological pathway for impact on bird populations is weak, given distance and dilution considerations. The potential for bioaccumulation of pollutants heavy metals or other ecotoxic materials remains, and could potentially impact on bird populations. Accidental release of petrochemicals could also potentially impact far downstream. A weak source-pathway-receptor impact model is identified and only a strong source of pollution or ongoing pollution would have the intensity to impact on the integrity of the SPA.

As the Barnakyle flows through the centre of Patrickswell, many of the developments outlined in this plan have the potential to impact on the river quality individually at the local level. The cumulative impact of all developments (e.g. industrial, residential and open space recreation has been taken into account.

Disturbance / ex-situ:

Some presence of ex-situ populations of Otter, Lamprey and Salmon may be expected outside of the SAC, but no populations above the expected level of "local importance" have been identified in the vicinity of Patrickswell as part of review of records in the area. It is considered that these populations would be part of the wider populations of Otter, Lamprey and Salmon in the area of the Lower River Shannon SAC and its tributaries across the wider region. Some impacts on species may occur locally from projects. Effects (such as an instream impacts) could only be assessed at the project level given the potential for small scale habitats of importance. The open space zoned buffers along the river will also provide protection for aquatic species in the plan area.

Groundwater:

The site is located largely within the Patrickswell Groundwater Body. The only Natura Site with a groundwater connection to the LAP area is the Lower River Shannon SAC, where a short stretch of the river is present in the same groundwater body. No groundwater dependent Lower River Shannon QI habitats have been identified as being present within the same groundwater body. It is likely that the groundwater within the plan area will be largely connected to the surface water courses in the area (the

Barnakyle River that flows through the down, and it's tributary that runs along the east of the LAP area. Upon examination, no functional groundwater pathway has been identified.

Conclusion:

Overall, a weak hydrological pathway is identified, and consequently a weak source-pathway-receptor model. Only larger scale projects would be anticipated to have the potential to have a likely significant effect on the SAC; or those with potential for bioaccumulation / increased risk of accidental release of large amounts of polluting material which could impact on bird species within the SPA.

The policies and objectives of this LAP will be screened with cognisance of the weak source-pathway-receptor model identified. The size and scale and nature of potential projects associated with the plan will thus be taken into account during the assessment of this LAP.

Additionally, project level assessment is embedded within the planning consent process to provide protection to the European Sites at the project level.

6.5 Development Policies

Any development policies have initially been screened following the methodology set out in DTA Publications Habitats Regulations Assessment Handbook (DTA 2021). Each policy is allocated one or more screening categories, shown in Table 6-2 below. The results of the initial screening are shown in Table 5-2. Where a number of categories to screen out a policy are applicable, the most relevant categories are listed in the table. The screening outcome includes any relevant in-combination assessment outcomes.

Table 6-2: Screening categories for the development policies (adapted from DTA, 2021)

Screening Category	Description	Screening Outcome
A	General statement of policy/ general aspiration.	Out
B	Policy listing general criteria for testing the acceptability / sustainability of proposals.	Out
C	Proposal referred to but not proposed by the plan.	Out
D	Environmental Protection / site safeguarding policy.	Out
E	Policies or proposals that steer change in such a way as to protect European sites from adverse effects.	Out
F	Policy that cannot lead to development or other change.	Out
G	Policy or proposal that could not have any conceivable effect on a European site	Out
H	Policy or proposal, the actual or theoretical effects of which cannot undermine the conservation objectives (either alone or in combination with other aspects of this or other plans or projects).	Out
I	Policy or proposal with a likely significant effect on a site alone.	In
J	Policy or proposal with an effect on a site but not likely to be significant alone, so need to check for likely significant effects in combination.	Dependant on in-combination test
K	Policy or proposal not likely to have a significant effect either alone or in combination.	Screened out after in-combination test
L	Policy or proposal likely to have a significant effect in combination.	Screened out after in-combination test

Table 6-3: Screening table of Patrickswell LAP policies and objectives

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
Chapter 1 - Introduction			
Policy I O1: Spatial Planning	It is a policy of the Council to: Ensure that provisions of the Draft Patrickswell Local Area Plan 2024 – 2030 for population and economic growth align with the policies and objectives of the higher-level spatial plans, such as the National Planning Framework (NPF), the Regional Spatial and Economic Strategy for the Southern Region (RSES) and the Limerick Development Plan 2022-2028.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Policy I O2: Limerick – Shannon Metropolitan Area:	It is a policy of the Council to: Facilitate and promote Patrickswell's role as part of the Limerick – Shannon Metropolitan Area in accordance with the Limerick – Shannon Metropolitan Area Strategic Plan, the Regional Spatial and Economic Strategy for the Southern Region and the Limerick Development Plan 2022-2028.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Chapter 3 – Development Strategy			
Overall Strategic Development Objectives	It is an objective of the Council to: 1. Seek the sustainable intensification and consolidation of the existing built environment, in accordance with the objectives for compact growth in higher-level spatial plans through appropriate infill, brownfield development, supported by the necessary physical and community infrastructure. 2. Promote sustainable economic development, enterprise and employment opportunities in Patrickswell maximising on its strategic location within the MASP and access to both the regional and national road network. 3. Promote and facilitate sustainable modes of transport, prioritising walking, cycling and public transport, whilst protecting and improving existing road infrastructure. 4. Protect, conserve and enhance the built environment, through promoting awareness, utilising relevant heritage legislation and ensuring quality urban design principles are applied to all new developments, respecting historic and architectural heritage.	Development, including consolidation of the existing built environment, and infill/brownfield development can have impacts on the environment. Development within Patrickswell will continue to have project level screenings and full assessments applied where needed. The weak hydrological pathway will help to protect the European sites, and the QIs within the sites. Project level assessments will assess the importance on ex-situ habitats within the context of the Natura Network - for	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
	<p>5. Protect, enhance and connect areas of natural heritage, blue green infrastructure and open space for the benefits of enhanced quality of life and biodiversity, while capitalising on climate change adaptation and flood risk measures.</p> <p>6. Ensure the highest quality of public realm and urban design principles apply to all new developments.</p> <p>7. Have cognisance to the Limerick Climate Change Adaptation Strategy 2019 - 2024, and any forthcoming climate adaptation and mitigation strategies that emerge during the lifetime of this plan.</p> <p>8. Guide the future development of Patrickswell, in accordance with the Town Centre First policy approach seeking to bring people and appropriate business/services back into the heart of Patrickswell through place-making, good quality urban design, and sustainable mobility as promoted by the Department of Housing, Local Government and Heritage and the Department of Rural and Community Development.</p> <p>9. Ensure the future development of Patrickswell supports the transition to a low carbon society and economy, implementing national policy to reduce gas emissions, improve environmental quality and contribute to national targets for climate change.</p>	<p>example assess the fisheries importance of the Barnakyle with context to the Lower River Shannon SAC, if relevant to the project; and allow mitigation to be applied at the project level as required.</p> <p>Inherent protection for the environment is provided within the objective itself, through Point No. 5 - the protection of biodiversity within the objective.</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination.</p>	
Policy DS P1: Core Strategy	<p>It is a policy of the Council to:</p> <p>Ensure compliance with the Core Strategy (or any revision thereof) of the Limerick Development Plan 2022-2028. The Planning Authority will monitor the type of developments permitted in Patrickswell, including the number of residential units constructed on an annual basis.</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out
Policy DS P2: Development Strategy	<p>It is a policy of the Council to:</p> <p>(a) Deliver new residential development in accordance with the Core Strategy of the Limerick Development Plan 2022-2028, supporting a choice of quality housing, mixed tenure and unit size/type universally designed for ease of adaption to the lifecycle and mixed mobility needs.</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out
	<p>(b) Ensure the sequential development of the serviced residential lands identified to cater for envisaged population growth.</p> <p>(c) Ensure that at least 30% of all new housing development is delivered within existing built-up areas and on infill, brownfield and backland sites.</p> <p>(d) Consolidate existing development and increase existing residential density, through a range</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p>	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
	of measures including re-use of existing buildings and infill development schemes.	<p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p> <p>Given the location of Patrickswell and the distance from any European Sites, it is unlikely that further development of residential lands would adversely affect the integrity of these Sites.</p>	
Objective DS O1: Residential Phasing	It is an objective of the Council to: Ensure development of New Residential Phase 2 lands only proceeds when at least 80% of all development in New Residential Phase 1 is completed.	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out
Objective DS O2: Residential Development	<p>It is an objective of the Council to:</p> <p>(a) Require the use of Design Briefs, Masterplans, Sustainability Statements, Social Infrastructure Assessments and any other supporting documents deemed necessary to ensure the coherent planning of residential development. Masterplans will be required for large scale development of residentially zoned lands and shall be submitted at planning application stage. Early engagement with all utilities providers including Uisce Eireann is strongly advised.</p> <p>(b) No one proposal for residential development shall increase the existing housing stock by more than 10-15% within the lifetime of the Plan, unless the applicant can demonstrate that the settlement has adequate capacity, in terms of both physical and social infrastructure to support additional growth.</p> <p>(c) Ensure all new residential layouts will prioritise walking and cycling and are fully permeable for pedestrians and cyclists to access a range of local services and enable the efficient provision of public transport services.</p> <p>(d) Ensure new residential development provides high quality public open space and play lots proportional to the number of residential units, having cognizance to accessibility, safety, permeability and public realm.</p> <p>(e) Ensure that in any proposed alterations to the streetscape of the village centre, adequate consideration is given to conservation, restoration and reconstruction, where it would affect the settings of protected structures, or the integrity of the nineteenth century streetscape.</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out
Objective DS O3:	It is an objective of the Council to:	A – General statement policy / general	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
Density and New Residential Developments	Ensure that all residential development complies with the residential density requirements, as set out in Table 3.5 and encourage a range of densities on New Residential and other suitably zoned lands in accordance with the Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas: Cities, Towns and Villages (2009), and any subsequent documents. A statement demonstrating an appropriate mix of units for new residential schemes shall be submitted as a requirement with all residential planning applications.	aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	
Objective DS O4: Serviced Site	It is an objective of the Council to: Permit serviced sites on appropriately zoned lands within the settlement boundary of Patrickswell, in line with requirements outlined in the Limerick Development Plan. The Council requires a minimum net density of 10 dwelling units per hectare on lands zoned Serviced Sites.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective DS O5: Social and Affordable Housing	It is an objective of the Council to: Promote the provision of social and affordable housing in accordance with Part V of the Planning and Development Act 2000 (as amended), Objective HOO13 of the Limerick Development Plan, the Limerick Housing Strategy's Housing Needs Demand Assessment, and government housing policy 'Housing for All' (2021), Limerick City and County Council's Housing Delivery Action Plan 2022-2026 and any subsequent replacements thereof.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Chapter 4 – Town Centre First Approach			
Policy TCF P1: Town Centre First	It is a policy of the Council to: (a) Support the implementation of the Town Centre First policy in Patrickswell in creating a vibrant and attractive village centre to live, work and visit, while also functioning as the service, social, cultural and recreational hub for the local community through the enhancement and development of the village's rich architectural heritage and development of public realm. (b) Capitalise on the infrastructural investments in the village that support the Town Centre First programme within the lifetime of this Plan. All development shall demonstrate climate resilience measure to climate proof critical infrastructure.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
	<p>(c) Promote high quality place-making and public realm, in accordance with the Limerick Development Plan 2022-2028, including the Development Management Standards, any replacement thereof and any relevant Section 28 Guidance.</p> <p>(d) Ensure development proposals are designed in such a manner as to enhance the village centre and should give due consideration to: Site context, surrounding built heritage, climate resilience, connectivity/permeability, public realm improvements, adaptability, privacy, amenity and parking provision.</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p> <p>Given the location of Patrickswell and the distance from any European Sites, it is unlikely that further development of the village centre would adversely affect the integrity of these Sites.</p>	Out
Policy TCF P2: Place-making Strategic Policy	It is policy of the Council to: Ensure that new development in the village centre and in particular the opportunity areas, comprises the highest of qualitative and design standards, complimenting the existing historical built fabric and national heritage, sustaining Patrickswell as a village in which to live, work, invest in and do business.	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out
Objective TCF O2: Active Land Management	<p>It is an objective of the Council to:</p> <p>(a) Support and facilitate the reuse and revitalisation of derelict, vacant and underutilised sites and disused buildings throughout Patrickswell for residential, economic, community and leisure purposes.</p> <p>(b) Promote and facilitate the re-use of under-utilised or vacant lands/buildings in Patrickswell through the active land management mechanisms such as the Derelict Sites Act, 1990 (as amended), Residential Zoned Land Tax and also through key Government policies such as Town Centre First, Our Rural Future, and Housing for All and any replacements thereof. The Council will continue to engage with property owners to advise on remedial measures and give guidance on schemes and supports available to bringing vacant and derelict homes back into productive use.</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
Policy TCF P3: Retail Strategic Policy	It is policy of the Council to: Support the sustainable long-term retail growth of Patrickswell, as a Tier 5 retail settlement in accordance with the Limerick Development Plan 2022-2028, the Retail Strategy for the Limerick Shannon Metropolitan Area and County Limerick.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective TCF O3: Retail Development	It is the objective of the Council to: Enhance the vitality and viability of Patrickswell, as a retail service centre and to improve the quantity and quality of retail provision in the village by: (a) Emphasise the village centre as the primary retail location. (b) Encourage the upgrade and expansion of existing retail units and the development of new units within the village centre. (c) Ensure that proposals with retail development elements comply with the provision of the Retail Strategy for the Limerick Shannon Metropolitan Area and County Limerick 2022-2028, in relation to site suitability and the sequential approach and ensure proposals which would undermine the vitality and viability of Patrickswell village centre will not be permitted. (d) Encourage proposals for commercial uses at ground floor level within the village core. (e) Prohibit the proliferation of uses in the village centre which would detract from the amenities, or the vitality and viability of the area such as fast-food outlets, amusement arcades, off-licences, bookmakers and other non-retail uses. Storage use is not permitted as the primary use of ground floor units. (f) Encourage the use of upper floors in retail premises for commercial or residential use. (g) Enhance the physical environment of the village centre, as a location for shopping and business through measures aimed at improving conditions for pedestrians. (h) Encourage the upgrade and refurbishment of existing retail units and the maintenance of original shopfronts, or the reinstatement of traditional shopfronts, where poor replacements have been installed, and discourage the use of external roller shutters, internally illuminated signs or inappropriate projecting signs.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective TCF O4:	It is an objective of the Council to: (a) Encourage and support the appropriate and sustainable development or redevelopment where appropriate, of lands identified as opportunity sites within the land use zoning map in line with the	A – General statement policy / general aspiration B - Policy listing general criteria for	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
Opportunity Sites	principles set out in Table 4.1. (b) Ensure that new development in the village centre and in particular the opportunity areas comprises the highest of qualitative and design standards, complimenting the existing historical built fabric, or national heritage, sustaining Patrickswell as a village in which to live, work, invest in and do business.	testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	
Chapter 5 – Sustainable Communities			
Policy CP1: Community Infrastructure, Recreation and Open Space Strategic Policy	It is the policy of the Council to: (a) Support and facilitate sports clubs, schools, cultural groups and community organisations in the provision, improvement and expansion of community services, sports and recreation amenities, multi-purpose spaces at appropriate locations that are universally accessible. The Council promotes opportunities for multi and co-use active and passive recreational amenities including sports and recreational facilities, playgrounds and outdoor gym equipment within existing areas of open space.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination Given the location of Patrickswell and the distance from any European Sites, it is unlikely that further development of the community amenities would adversely affect the integrity of these Sites or their QI species.	Out
	(b) Ensure that planning applications for social infrastructure and recreational infrastructure demonstrate climate resilience measures to climate-proof critical infrastructure.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective CO1: Patrickswell Community Resource Centre	It is an objective of the Council to: Support the further development at the Patrickswell Community Resource Centre site and adjacent lands zoned Community and Education.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
Objective CO2: Community and Education Facilities	It is an objective of the Council to: (a) Ensure provision of sufficient zoned lands to facilitate the expansion of existing and provision of new education, sports clubs, cultural facilities, healthcare facilities and community infrastructure in appropriate locations. The Council promotes multi-purpose spaces and co-use of recreational facilities.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
	(b) Require future development of new community facilities to generally meet the following criteria of the 10 Minute Town Concept: -Generally located within 800m walking distance of the village centre; -Located centrally with respect to the community it serves, taking into account limitations of topography and the road and footpath network; -Clustered with complementary community facilities, local retail services etc. and integrated with housing; and -Located where a substantial proportion of the population reside, in particular older and less mobile/mobility compromised members of the community. (c) Ensure that there are sufficient educational and community facilities to meet the needs generated by proposed developments, by requiring the completion of a Sustainability Statement and Social Infrastructure Assessment for residential developments of 10 or more dwellings. (d) Facilitate the development of lifelong learning facilities and digital capacity for distance learning. (e) Support and facilitate improvements to existing educational and childcare facilities within Patrickswell. (f) Ensure that childcare and education facilities are provided in tandem with new residential areas, at accessible locations, which maximise opportunities for walking and cycling and comply with all relevant standards. (g) Ensure that the existing school site is protected for educational use and that lands adjacent to the school are protected for future expansion of the school, if required, subject to site suitability. (h) Ensure that any planned future expansion of the school maximises priority for pedestrians and cyclists in terms of access arrangements and the location and quantum of car and bicycle parking.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination Given the location of Patrickswell and the distance from any European Sites, it is unlikely that further development of the community amenities would adversely affect the integrity of these Sites or their QI species.	Out
Objective CO3 - Community and Health Facilities	It is an objective of the Council to: Support and facilitate the development and expansion of health service infrastructure by the Health Services Executive and other statutory and voluntary agencies and private healthcare providers, in the provision of appropriate healthcare facilities and the provision of community based care facilities at appropriate locations, subject to proper planning consideration and the	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
	principles of sustainable development.	<p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p> <p>Given the location of Patrickswell and the distance from any European Sites, it is unlikely that further development of the community amenities would adversely affect the integrity of these Sites or their QI species.</p>	
Objective CO4 Sports and Recreational Facilities	<p>It is an objective of the Council to:</p> <p>(a) Support and facilitate sports clubs, schools, cultural groups and community organisations in the provision, improvement and expansion of community services, sports and recreation amenities and multi-purpose spaces at appropriate locations that are universally accessible.</p> <p>(b) Promote opportunities for multi and co-use active and passive recreational amenities including sports and recreational facilities, playgrounds and outdoor gym equipment within existing areas of open space.</p> <p>(c) Protect existing open space by not permitting development, which encroaches on such open space, and protect semi-natural open space from inappropriate development and facilitate/support the provision of allotments or community gardens at appropriate locations.</p> <p>(d) Ensure new residential development provides high quality public open space and play-lots proportional to the number of residential units, having cognisance to accessibility, safety, permeability, place-making and requirements set out in Table 5.1.</p> <p>(e) Support the implementation of amenity and recreational facilities for the village as outlined in Table 4.1: Opportunity Sites - Development Potential/ Principles.</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>D - Environmental Protection / site safeguarding policy</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p> <p>Given the location of Patrickswell and the distance from any European Sites, it is unlikely that further development of the community amenities would adversely affect the integrity of these Sites or their QI species.</p>	Out
Objective CO5 - New Amenity Areas Walkways and Cycleways	<p>It is an objective of the Council to:</p> <p>(a) Continue to facilitate the development of walkways and cycleways as indicated on the Amenity and Sustainable Transport Map (Appendix 1, Map 3) in co-operation with local interested parties, including the private, voluntary and public sector subject to funding. Any proposed development adjacent to walkways must incorporate connecting pathways into the designated walkway in their design. Developments shall be designed to overlook proposed walkways and shall link existing and proposed residential areas to each other, to amenity areas and to provide connections to the village centre.</p> <p>(b) Encourage walking and cycling as more convenient, popular and safe methods of movement in Patrickswell, and facilitate the provision of an attractive and coherent network of off-road</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p> <p>Given the location of Patrickswell and</p>	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
	<p>footpaths and cycle facilities. This will be achieved by:</p> <ul style="list-style-type: none"> - Promoting the existing cycle scheme from Patrickswell to Limerick as both a commuter and recreational option. -Support the provision of a new Greenway linking Patrickswell with Rathkeale and the wider Greenway \ Active Travel network. -Providing secure cycle parking facilities at appropriate locations as opportunities arise. -Promotion of a walking loop and continuous pedestrian connectivity within the village, including maximising on permeability and proposed linkages as outlined in Opportunity Site 2 and Opportunity Site 4 in Table 4.1: Opportunity Sites – Development Potential/ Principles. 	<p>the distance from any European Sites, it is unlikely that further development of the community amenities would adversely affect the integrity of these Sites or their QI species.</p>	
Chapter 6 – Economic Development and Tourism			
Policy ED P1: Strategic Economic Development	<p>It is policy of the Council to:</p> <p>Promote and facilitate economic development and employment generating activities in Patrickswell in a sustainable manner, in accordance with higher-level spatial plans, including the Limerick Development Plan 2022 – 2028.</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out
Objective ED O1: Local Enterprise	<p>It is an objective of the Council to:</p> <p>(a) Encourage the redevelopment of vacant commercial units, brownfield, derelict, and infill sites for local enterprise development, subject to the normal planning and environmental criteria.</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out
	<p>(b) Support home based economic activities, which are secondary to the main residential use, and which can be accommodated without adverse impacts on the amenities of adjoining residential property, by reason of traffic, noise or other planning criteria.</p>	<p>K - Policy or proposal not likely to have a significant effect either alone or in combination.</p>	Out
	<p>(c) Develop lands zoned for Enterprise and Employment and ensure planned development can be accommodated complementary to safeguarding the strategic function of the national road network and associated junctions.</p>	<p>K - Policy or proposal not likely to have a significant effect either alone or in combination.</p>	Out
Objective ED O2: Enterprise and Employment	<p>It is the objective of the Council to:</p> <p>Permit proposals for enterprise and employment development or extensions to existing employment facilities in appropriately zoned areas. Development proposals will require the following:</p> <p>(a) An appropriate level of transport assessment, including an assessment of the cumulative impact of development, to ensure planned development can be accommodated complementary</p>	<p>No specific projects have been identified within the industrial/ enterprise and employment zoned areas.</p> <p>Impacts will be largely project specific, and could be minor or more impactful,</p>	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
	<p>to safeguarding the strategic function of the national road network and associated junctions.</p> <p>(b) Ensure any development proposals takes cognisance of the N/M20 Cork to Limerick Project and will not compromise the development of route options or the construction of the preferred route.</p> <p>(c) Ensure all development proposals include, Mobility Management Plans, with clear targets and commitments to implementing measures to promote sustainable transport.</p>	<p>depending on the type of project. Projects with discharges to the Barnakyle should be assessed with the European sites downstream in mind. Implementation of SUDs measures will also provide protection for water quality. All projects will be underpinned by project level appropriate assessment.</p>	
	<p>(d) Retain sufficient lands around the site boundaries where industrial, enterprise or distribution activities are proposed to accommodate landscaping to soften the visual impact and reduce the biodiversity loss of the development.</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>D - General plan-wide environmental protection/ site safeguarding/ threshold proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out
	<p>(e) Early engagement with all utilities providers, including Uisce Eireann is strongly advised.</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out
Objective ED O3: Tourism Development	<p>It is an objective of the Council to:</p> <p>(a) Enhance the tourism potential of Patrickswell, including the promotion of new tourism products in an environmentally sustainable manner and work with relevant landowners and stakeholders to encourage new development for the tourist industry within the Local Area Plan boundary.</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>D - General plan-wide environmental protection/ site safeguarding/ threshold proposals</p> <p>K - Policy or proposal not likely to</p>	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
		have a significant effect either alone or in combination	
	(b) Support growth in the tourism sector in Patrickswell by facilitating vital connections between complementary locations, and ensuring visitors can easily avail of services in Patrickswell village centre.	<p>Tourism can have diffuse impacts across a catchment. Connections between Patrickswell and the SAC could be formed e.g. promotion of fishing or other related water-based infrastructure. However, no specific impacts can be identified from this policy, and the weak pathway between Patrickswell and the SAC indicates that tourism based in the vicinity of Patrickswell is unlikely to impact on the European sites. Project level assessments would still be required, especially of tourism targeted infrastructure.</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out
	(c) Support the provision of a new Greenway linking Patrickswell with the Limerick Greenway and the wider Greenway\ Active Travel network.	<p>A connection to the Limerick Greenway will require a project level assessment.</p> <p>Crossing points over the Barnakyle River would provide a pathway for impact, particularly during the construction of any new infrastructure. However, the provision of a link to the existing Greenway within the Plan area, would be highly unlikely to result in ongoing disturbance or water quality impacts on the European sites.</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out
	(d) Require new tourism projects located within the village to foster synergy with the services and	A – General statement policy / general	

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
	<p>retail business located in the village.</p> <p>(e) Support community engagement in the development of tourism and amenity projects in the village.</p>	<p>aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out
Objective ED O4: Limerick Racecourse	<p>It is the objective of the Council to:</p> <p>Facilitate the continued operation and development of the Limerick racecourse and encourage the accommodation of complementary events/commercial/amenity functions and any supporting development to promote viable development while ensuring the protection of residential amenities and traffic safety. Where appropriate, the Council will encourage the development of ancillary facilities within the core of the village. Such facilities might include accommodation, restaurants or equestrian related services.</p>	<p>Developments will require project level assessments. Any development within the plan area could potentially have direct and/or indirect impacts on the European Sites network, through the weak hydrological pathway identified. No ongoing air emissions would be anticipated from this development. Ex-situ habitat for QIs will be assessed at the project level.</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out
Chapter 7 – Sustainable Mobility and Transport			
Policy SMT P1: Integration of Land Use and Transport Policies	<p>It is policy of the Council to:</p> <p>Support and facilitate the integration of land use and transportation policies for Patrickswell, as a means of reducing the impact on climate change. The Council will ensure the delivery of a sustainable compact settlement, which can be served by various modes of transport with a focus on reducing the need to travel.</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out
Policy SMT P2: Transport and Movement - Promotion of Sustainable Patterns of Transport Use	<p>It is policy of the Council to:</p> <p>Seek to implement in a positive manner, in cooperation with other relevant authorities and agencies, the policies of the NPF, RSES, the National Sustainable Mobility Policy (2022) and the Department of Transport's Active Travel publications, to encourage more sustainable patterns of travel and greater use of sustainable forms of transport in Patrickswell, including public transport, cycling and walking.</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
Policy SMT P3: Rural Mobility:	It is a policy of the Council to: Support the implementation of the National Transport Authority's 'Connecting Ireland: Rural Mobility Plan' and the 'Local Link' rural transport service and to encourage operators to improve the service to meet the social and economic needs of Patrickswell.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective SMT O1: Public Transport Provision	It is an objective of the Council to: Support and facilitate implementation of an integrated, multi-modal and accessible public transport network in Patrickswell and its hinterland, including any investment in the public transport by service providers in Patrickswell.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective SMT O2: Sustainable Travel Infrastructure	It is an objective of the Council to: Maintain and expand active travel infrastructure to provide for accessible safe pedestrian and cycling route networks in Patrickswell. This includes the following: (a) Support the provision of improved active travel infrastructure to Limerick City and dedicated greenway networks linking Patrickswell to Rathkeale, Croom, Buree and Charleville. (b) Improved connectivity from the residential zoned lands to the east of the Clarina Road and the School Road to allow for improved accessibility and permeability to Patrickswell National School. (c) Support the implementation of the Patrickswell Village Renewal Scheme, including the construction of a signalised pedestrian crossing and remodelling of the road layout to improve traffic management, along the Main Street. (d) Incorporate Sustainable Travel measures in all new developments in the village.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective SMT O3: Supporting Modal Split and Behavioural Change	It is an objective of the Council to: (a) Encourage, promote and facilitate a modal shift towards more sustainable forms of transport in Patrickswell. (b) Support and facilitate implementation of an integrated, multi-modal and accessible public transport network catering for all members of society across Patrickswell and its hinterland, including any investment in the public transport by service providers in Patrickswell. (c) Improve and create additional facilities for pedestrians and cyclists, as part of a coherent and integrated active travel network, as opportunities arise as part of new developments. (d) Collaborate with transport providers to improve connectivity to adjacent settlements and	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
	Limerick City. (e) Facilitate and implement school streets and school zones, including slow zones around the school, and promote/facilitate active travel options for school children to reduce the health and safety risks associated with traffic congestion, pollution and inactive lifestyles.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective SMT O4: Freight Rail Network	It is an objective of the Council to: Support the reinstatement of the Limerick to Foynes railway line to provide a freight service in line with the Limerick Shannon Metropolitan Area Transport Strategy and the Limerick Development Plan.	Limerick Shannon Metropolitan Area has been subject to all appropriate environmental assessments, including Appropriate Assessment (NIS) and EIAR with mitigation measures proposed to protect European Sites. A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals	Out
Objective SMT O5: Safeguard Route Study Area and Corridor for N/M20 Cork to Limerick Project	It is the objective of the Council to: Safeguard the N/M20 Cork to Limerick Project study area and corridor free from development that would compromise the future delivery of the relevant schemes, in accordance with the provisions of Section 2.9 of the DoECLG Spatial Planning and National Roads Guidelines.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective SMT O6: Roads	It is an objective of the Council to: (a) Support the delivery of the N/M20 Cork to Limerick Project, subject to all appropriate environmental and planning assessments (b) Protect the capacity of the regional road network from inappropriate development, having regard to all relevant Government guidance, Objective TR O39 National Roads and Objective TR O41 Strategic Regional Roads of the Limerick Development Plan 2022-2028 and ensure development does not compromise the performance of the network or future improvements to network. Road Safety Audits and Traffic Impact Assessments will be required to demonstrate	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
	implications of development proposals on the national and regional road network.	This project will have its own appropriate assessments completed, independent of the Patrickswell LAP	
	(c) Support the provisions set out in the 2020 DMURS Interim Advice Note – Covid-19 Pandemic Response and the Treatment of Transition Zones to Towns and Villages on National Roads and S.I. No. 140 of 2006 Environmental Noise Regulations.		
	(d) Ensure all developments protect and safeguard the capacity and efficiency of the drainage regimes of the road network.	A – General statement policy / general aspiration	Out
	(e) Prohibit advertising signage adjacent to the national and regional road networks.	B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	
Chapter 8 – Climate Action, Environment and Heritage			
Policy CH P1: Climate Change Strategic Policy	It is policy of the Council to: Protect and enhance environmental quality and implement the climate action measures through the planning process to address climate change.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals D - General plan-wide environmental protection/ site safeguarding/ threshold proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective CH O1: Climate Change	It is an objective of the Council to: (a) Ensure climate-proofing measures are incorporated into the design, planning and construction of all developments, including utilities and their networks. The use of green infrastructure as a mechanism for carbon offsetting and surface water management is encouraged.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals D - General plan-wide environmental protection/ site safeguarding/ threshold proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
	(b) Ensure that all residential and commercial developments are designed to take account of the impacts of climate change, including the installation of rainwater harvesting systems, and that energy efficiency and renewable energy measures are incorporated. In the case of large	A – General statement policy / general aspiration B - Policy listing general criteria for	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
	industrial, commercial or newly constructed public buildings, the incorporation of renewable technologies, such as solar energy in the design will be encouraged, subject to compliance with all relevant planning criteria.	testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	
	(c) Support and promote climate smart and the NZEB standard of building or equivalent for all new developments.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
	(d) Promote and support development of renewable energy sources, which will achieve low carbon outputs and promote Patrickswell as a low carbon area.	A – General statement policy / general aspiration	Out
	(e) Support the development of low carbon and green technological businesses and industries.	B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	
	(f) Promote responsible development and management of land, drainage systems and natural habitats and to encourage development at appropriate locations, which minimise the use of fossil fuels and maximises the use of local or renewable resources.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals D - General plan-wide environmental protection/ site safeguarding/ threshold proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
	(g) Promote the appropriate adaption of built heritage to respond to the effects of climate change.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
		have a significant effect either alone or in combination	
Objective CH O2: Tree Protection and Nature Conservation	It is an objective of the Council to: Seek to protect natural stone boundary walls, ponds/wetlands, other natural features of local importance and mature trees where possible. Development that requires the felling or harming of such trees will not generally be permitted unless supported by a tree survey establishing that the subject trees are of no ecological or amenity value. Such report shall be undertaken by a suitably qualified and competent person.	D- General plan-wide environmental protection/ site safeguarding/ threshold policies E - Policies or proposals which steer change in such a way as to protect European sites from adverse effects	Out
Objective CH O3: Lesser Horseshoe Bat	It is an objective of the Council to: Require all developments in areas where there may be Lesser Horseshoe Bats, to submit an ecological assessment of the effects of the development on the species. The assessment shall include mitigation measures to ensure that feeding, roosting or hibernation sites for the species are maintained. The assessment shall also include measures to ensure that landscape features are retained and that the development itself will not cause a barrier or deterrent effect on the species.	D- General plan-wide environmental protection/ site safeguarding/ threshold policies E - Policies or proposals which steer change in such a way as to protect European sites from adverse effects	Out
Objective CH O4: Ecological Impact Assessment	It is an objective of the Council to: Require all developments where there are species of conservation concern, to submit an ecological assessment of the effects of the development on the site and nearby designated sites, suggesting appropriate mitigation measures and establishing, in particular, the presence or absence of the following species: Otter, badger, bats, lamprey and protected plant species such as the Triangular Club Rush, Opposite Leaved Pond Weed and Flora Protection Order Species generally.	D- General plan-wide environmental protection/ site safeguarding/ threshold policies E - Policies or proposals which steer change in such a way as to protect European sites from adverse effects	Out
Objective CH O5: Designated Sites and Nature Conservation	It is an objective of the Council to: (a) Protect the integrity of the Lower River Shannon Special Area of Conservation site, through the establishment of buffer zones along the Barnakyle River, which flows into the River Mague, a designated site. (b) Ensure that appropriate wastewater infrastructure is available to support new developments to safeguard water quality. (c) No projects which will be reasonably likely to give rise to significant adverse direct or indirect or secondary impacts on the integrity of any Natura 2000 sites, having regard to their conservation objectives arising from reduction in species diversity, shall be permitted on the basis of this plan (either individually or in combination with other plans or projects). In terms of general nature conservation, the Council will protect undesignated habitats such as notable trees and hedgerows and ponds/wetlands and other natural features of local importance.	D- General plan-wide environmental protection/ site safeguarding/ threshold policies E - Policies or proposals which steer change in such a way as to protect European sites from adverse effects	Out
Objective CH O6: Blue Green Infrastructure	It is an objective of the Council to: (a) Develop and enhance blue and green infrastructure opportunities throughout Patrickswell in line with the detail set out in Table 8.1 LAP Climate Action Opportunities.	A – General statement policy / general aspiration B - Policy listing general criteria for	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
		testing the acceptability / sustainability of proposals D - General plan-wide environmental protection/ site safeguarding/ threshold proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	
	(b) Promote the concept of blue green infrastructure and linked green/open spaces, as a means to mitigate and adapt to climate change, reduce flood risk, improve habitat/biodiversity links/corridors and improve watercourse quality, to sustain high quality robust ecosystems.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals D - General plan-wide environmental protection/ site safeguarding/ threshold proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
	(c) Promote connecting corridors for the movement of species and encourage the retention and creation of features of biodiversity value, ecological corridors and networks that connect areas of high conservation value such as woodlands, hedgerows, earth banks, watercourses, wetlands and designated sites. In this regard, new infrastructural projects and linear developments in particular, will have to demonstrate at design stage, sufficient measures to assist in the conservation of and dispersal of species.		
	(d) Where possible remove barriers to species movement, such as the removal of in-stream barriers to fish passage		
Objective CH O7: Creation of New Habitats	It is an objective of the Council to: (a) Seek the creation of new habitats by encouraging wild green areas and new water features such as, pools and ponds in new developments. (b) Encourage management plans for green areas to use the minimum of pesticides and herbicides. (c) The creation of areas that are not subject to public access in order to promote wildlife use is strongly encouraged.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals D - General plan-wide environmental protection/ site safeguarding/ threshold proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective CH O8: New Infrastructure Projects	It is an objective of the Council to: Require new infrastructure and linear developments in particular, to demonstrate at design stage sufficient measures to assist in the conservation of and dispersal of species and to demonstrate a high degree of permeability for wildlife, to allow the movement of species and to prevent the creation of barriers to wildlife and aquatic life in the wider countryside.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals D - General plan-wide environmental protection/ site safeguarding/ threshold proposals K - Policy or proposal not likely to	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
		have a significant effect either alone or in combination	
Policy CH P2: Water Framework Directive Policy	It is policy of the Council to: Implement changes to the management of water bodies, taking account of all aspects of the Water Cycle, in accordance with the Water Framework Directive and the principal objective of the WFD to achieve good status in all waters and to ensure that status does not deteriorate in any waters.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective CH O9: Archaeological Heritage	It is the objective of the Council to: (a) Seek the preservation (in situ, or at a minimum, preservation by record) of all known sites and features of historical and archaeological interest, including wreck, sites and objects underwater. This is to include all the sites listed in the Record of Monuments and Places as established under Section 12 of the National Monuments (Amendment) Act 1994. In securing such preservation, the Council will have regard to the advice and recommendations of the National Monuments Service, Department of Housing, Local Government and Heritage, the National Museum of Ireland and the Local Authority Archaeologist. (b) Protect and preserve (in situ, or at a minimum, preservation by record) all sites and features of historical interest discovered subsequent to the publication of the Record of Monuments and Places. (c) Ensure that any proposed development shall not have a negative impact on the character or setting of an archaeological monument. In assessing proposals for development, the Council will take account of the Archaeological potential of rivers and other waterways. (d) Ensure that the area of a monument and the associated buffer area shall not be included as part of the open space requirement demanded of a specific development, but should be additional to the required open spaces, and if appropriate, where such a monument lies within a development, a conservation and/or management plan for that monument, shall be submitted as part of the landscape plan for that development. (e) Protect and preserve the industrial, military, maritime, riverine and post-medieval archaeological heritage of the plan area. Proposals for refurbishment, works to or redevelopment of these sites should be subject to a full architectural and archaeological assessment, including where appropriate underwater archaeological impact assessment	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective CH O10: Record of Monuments and Places	It is an objective of the Council to: Seek the preservation of all known sites and features of historical and archaeological interest. This includes all the sites listed in the Record of Monuments and Places, as established under Section 12 of the National Monuments (Amendment) Act 1994.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
		of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	
Objective CH O11: Protected Structures	It is an objective of the Council to: (a) Protect structures entered onto the Record of Protected Structures, or listed to be entered onto the Record and to encourage their appropriate re-use and restoration, where possible. (b) Resist the demolition of Protected Structures, in whole or in part, the removal or modification of features of architectural importance, and design element that would adversely affect the character or setting of a Protected Structure, unless exceptional circumstances can be clearly demonstrated by a suitably qualified professional.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Chapter 9 – Infrastructure and Utilities			
Policy IU P1: Infrastructure and Utilities	It is policy of the Council to: Ensure the provision of adequate infrastructure capacity to accommodate future development and the timely provision of infrastructure needed for the sustainable growth of Patrickswell.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective IU O1: Infrastructure	It is an objective of the Council to: Ensure compliance for infrastructure led growth in accordance with the DHPLG Water Services Guidelines for Planning Authorities.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective IU O2: Water Infrastructure	It is an objective of the Council to: (a) Ensure compliance for infrastructure lead growth in accordance with the DHPLG Water Services Guidelines for Planning Authorities	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
	<p>(b) Facilitate improvements to the existing water supply system to cater for the needs of an expanding population</p> <p>(c) Ensure that development proposal provide adequate water infrastructure to facilities proposed developments. Evidence of consultation by developers with Uisce Eireann prior to submit a planning application will be required.</p> <p>(d) Ensure future development protects existing wayleave and buffer zones around public water services infrastructure.</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p> <p>Given the location of Patrickswell and the distance from any European Sites, it is unlikely that further development of the water abstraction infrastructure from surface and groundwater supplies would adversely affect the integrity of these Sites or their QI species.</p>	Out
	<p>(e) Promote water conservation and demand management measures among all water users and to support Uisce Eireann in implementing water conservation measures, such as leakage reduction and network improvements, including innovative solutions in specific situations.</p>	<p>A – General statement policy / general aspiration</p> <p>D - General plan-wide environmental protection/ site safeguarding/ threshold proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out
	<p>(f) Proposal for abstraction of water will be subject to the appropriate environmental assessments and demonstrate compliance with the requirements of Article 6 of the Habitats Directive and the Water Framework Directive.</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>D - General plan-wide environmental protection/ site safeguarding/ threshold proposals</p> <p>E - Policies or proposals which steer change in such a way as to protect European sites from adverse effects</p> <p>K - Policy or proposal not likely to have a significant effect either alone</p>	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
		or in combination	
Objective IU O3: Wastewater Infrastructure	It is an objective of the Council to: (a) Support the implementation of the Uisce Éireann Investment Plans, in accordance with the settlement strategy of the RSES and the Limerick Development Plan.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
	(b) Ensure adequate wastewater infrastructure is available to cater for existing and proposed development, in collaboration with Uisce Éireann, avoiding any deterioration in the quality of receiving waters and ensuring discharge meets the requirements of the Water Framework Directive. This includes the separation of foul and surface water through the provision of separate networks and nature-based rainwater management measures. Applications for development under the Draft Plan must demonstrate that the proposal for development would not adversely affect a water body's ability to meet its objectives under the Water Framework Directive, individually as a result of the proposed development or cumulatively, in combination with other developments. Evidence of consultation by developers with Uisce Éireann, prior to submitting a planning application will be required.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
	(c) Ensure compliance for infrastructure led growth in accordance with the DHPLG Water Services Guidelines for Planning Authorities.	Given the location of Patrickswell and the distance from any European Sites, it is unlikely that further development of wastewater infrastructure would adversely affect the integrity of these Sites or their QI species.	
	(d) Facilitate improvements to the existing wastewater system to cater for the needs of an expanding population.		
	(e) Ensure future development protects existing wayleave and buffer zones around public water services infrastructure.		
Objective IU O4: Surface Water Management and SuDS	It is an objective of the Council to: (a) Maintain, improve and enhance the environmental and ecological quality of surface waters and groundwater, including reducing the discharges of pollutants or contaminants to waters in accordance with the Draft Ireland River Basin Management Plan for Ireland 2022-2027 (DHPLG) and associated Programme of Measures.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
	(b) Require all planning applications, to include surface water design calculations to establish the	A – General statement policy / general	

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
	<p>suitability of drainage between the site and the outfall point.</p> <p>(c) Require all new developments to include Sustainable Urban Drainage Systems (SuDS) to control surface water outfall and protect water quality. Proposals shall have regard to the 'Nature-based Solutions to the Management of Rainwater and Surface Water Run-off in Urban Areas – Best Practice Interim Guidance' document.</p> <p>(d) Require applicants to investigate the potential for the provision of porous surfaces, where car parking and hard landscaping is proposed.</p> <p>(e) Protect the surface water resources of the plan area and in individual planning applications request the provision of sediment and grease traps, and pollution control measures, where deemed necessary.</p>	<p>aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out
Objective IU O5: Flood Risk Management	<p>It is an objective of the Council to:</p> <p>(a) Manage flood risk in accordance with the requirements of "The Planning System and Flood Risk Management Guidelines for Planning Authorities", DECLG and OPW (2009) and any revisions thereof and consider the potential impacts of climate change in the application of these guidelines.</p> <p>(b) Ensure development proposals within the areas outlined as being at risk of flooding are subject to Site Specific Flood Risk Assessment as outlined in "The Planning System and Flood Risk Management Guidelines", DECLG and OPW (2009). These Flood Risk Assessments shall consider climate change impacts and adaptation measures including details of structural and non-structural flood risk management measures, such as those relating to floor levels, internal layout, flood-resistant construction, flood-resilient construction, emergency response planning and access and egress during flood events. Reference shall be made to Section 5.8 requirements of the Flood Risk Assessment in the SFRA of the Limerick Development Plan 2022-2028.</p> <p>(c) Ensure that future developments in flood prone areas are generally limited to minor developments in line with the Flood Risk Management Guidelines for Planning Authorities and the Circular PL 2/2014.</p> <p>(d) Demonstrate that future development will not result in increased risk of flooding elsewhere, restrict flow paths, where compensatory storage/storm water retention measures shall be provided on site.</p> <p>(e) Ensure future development of lands within Flood Risk Zone A/B is in accordance with the plan-making Justification Tests in the SFRA.</p>	<p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p> <p>Given the location of Patrickswell and the distance from any European Sites, it is unlikely that further development of flood risk management measures in relation to the Barnakyle River would adversely affect the integrity of these Sites or their QI species.</p> <p>A – General statement policy / general aspiration</p> <p>B - Policy listing general criteria for testing the acceptability / sustainability of proposals</p> <p>D - General plan-wide environmental protection/ site safeguarding/ threshold proposals</p> <p>K - Policy or proposal not likely to have a significant effect either alone or in combination</p>	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
Objective IU O6: Flood Risk and Blue Green Infrastructure	It is an objective of the Council to: Promote integration and delivery of blue green infrastructure in new developments, public realm and community projects as a means of managing flood risk and enhancing the natural environment.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals D - General plan-wide environmental protection/ site safeguarding/ threshold proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective IU O7: Buffer Zone	It is an objective of the Council to: Provide an appropriate set back from the edge of watercourses to proposed developments to protect the integrity of the Barnakyle River and to ensure infinite access for channel clearing, and/or maintenance. Any proposed development shall have cognisance to the contents of the Inland Fisheries Ireland document 'Planning for Watercourses in Urban Environments' and in addition allow for access to and maintenance of existing Irish Water Infrastructure such as outfalls or pipelines.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals D - General plan-wide environmental protection/ site safeguarding/ threshold proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
Objective IU O8: Energy Generation	It is an objective of the Council to: (a) Support the providers of national gas and electricity grid infrastructure by safeguarding existing infrastructure from encroachment by development that might compromise the efficiency of the networks. (b) Facilitate cooperation between utility and service providers to ensure their networks are resilient to the impacts of climate change, both in terms of design and ongoing maintenance. (c) Facilitate improvement of telecommunications, broadband, electricity (including renewables) and gas networks infrastructure on an open access basis subject to safety requirements and proper planning and sustainable development. (d) Seek the undergrounding of all utility cables, where possible.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination Given the location of Patrickswell and the distance from any European Sites, it is unlikely that further development of energy infrastructure would adversely affect the integrity of these Sites or their QI species.	Out
	(e) Facilitate delivery of E-Charge Points for electric vehicles at suitable locations and in new	A – General statement policy / general	Out

No.	Proposed Policy/Objectives	AA Screening Category and Consideration	Screening Outcome
	developments in line with the Limerick Development Plan.	aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	
	(f) Promote and encourage the use of renewable energy technologies and sources in existing and proposed developments subject to consideration of environmental, conservation, residential and visual amenity.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals D - General plan-wide environmental protection/ site safeguarding/ threshold proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out
	(g) Support the development of Smart Homes and Smart Buildings and facilitate the foundation for Smart Limerick in accordance with the Limerick Digital Strategy 2017-2020.		
	(h) Support and promote the NZEB standard of building or equivalent for all new developments		
Objective IU O9: Waste Management and Circular Economy	It is an objective of the Council to: (a) Support the Regional Waste Management Office in implementation of the EU Action Plan for the Circular Economy - Closing the Loop, to ensure sustainable patterns of consumption and production. (b) Require all commercial and residential development to provide an adequate internal and external space for the correct storage of waste and recyclable materials. (c) Require that development proposals have regard to the Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects.	A – General statement policy / general aspiration B - Policy listing general criteria for testing the acceptability / sustainability of proposals K - Policy or proposal not likely to have a significant effect either alone or in combination	Out

6.6 Land-Use Zoning

Land-use zonings have been reviewed as part of this LAP. Additional Lands, Local Centre, Semi-Natural Open Space, Special Control Area, Tourism Related Development and Utilities are not presented here, as they are confined to existing zonings, are small scale in nature or are lower impact by their nature (e.g., open space). Open space has also been used to provide a buffer to the waterbodies in the vicinity of the River Barnakyle, helping to provide protection to European sites. Areas of higher groundwater vulnerability have been avoided for the most part.

Those with more potential for an impact were reviewed in more detail and area presented here.

6.6.1 Agriculture

There are five zones that have been identified for Agriculture, four of which are additions of the agricultural land which is retained from the previous LAP. Of these new sites, none have been identified as having the potential to cause likely significant effects upon any of the European sites identified in Section 4.2 via zoning. One of the agriculture zones is adjacent to watercourses which lead to the River Maigue, so efforts should continue to prevent pollution from agriculture. There are no objectives that have been identified to improve the agricultural facilities of Patrickswell.

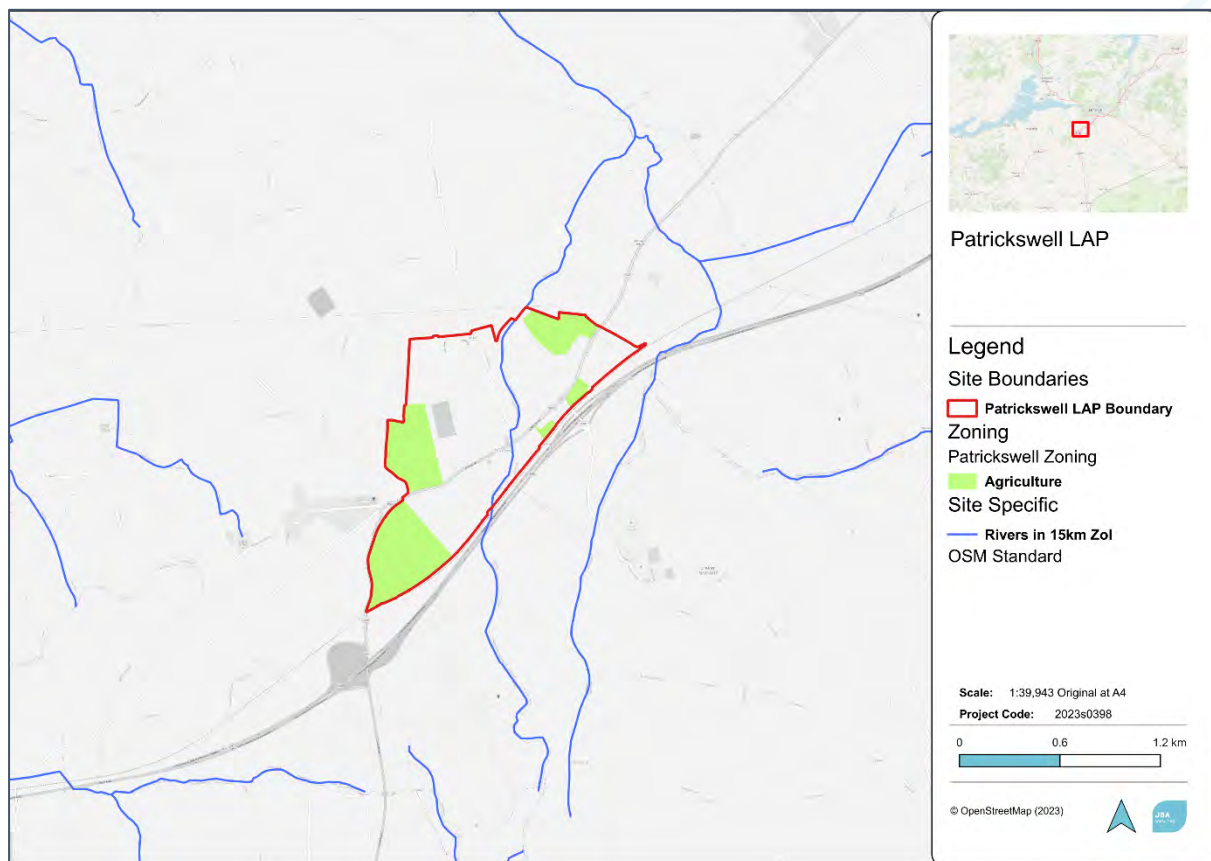


Figure 6-1: Agricultural Zoning of Patrickswell

6.6.2 Education and Community

A small loss in zoning for Education and Community has occurred as part of this LAP. Of these currently zoned sites, none have been identified as having the potential to cause likely significant effects upon any of the European sites identified in Section 4.2 via zoning.

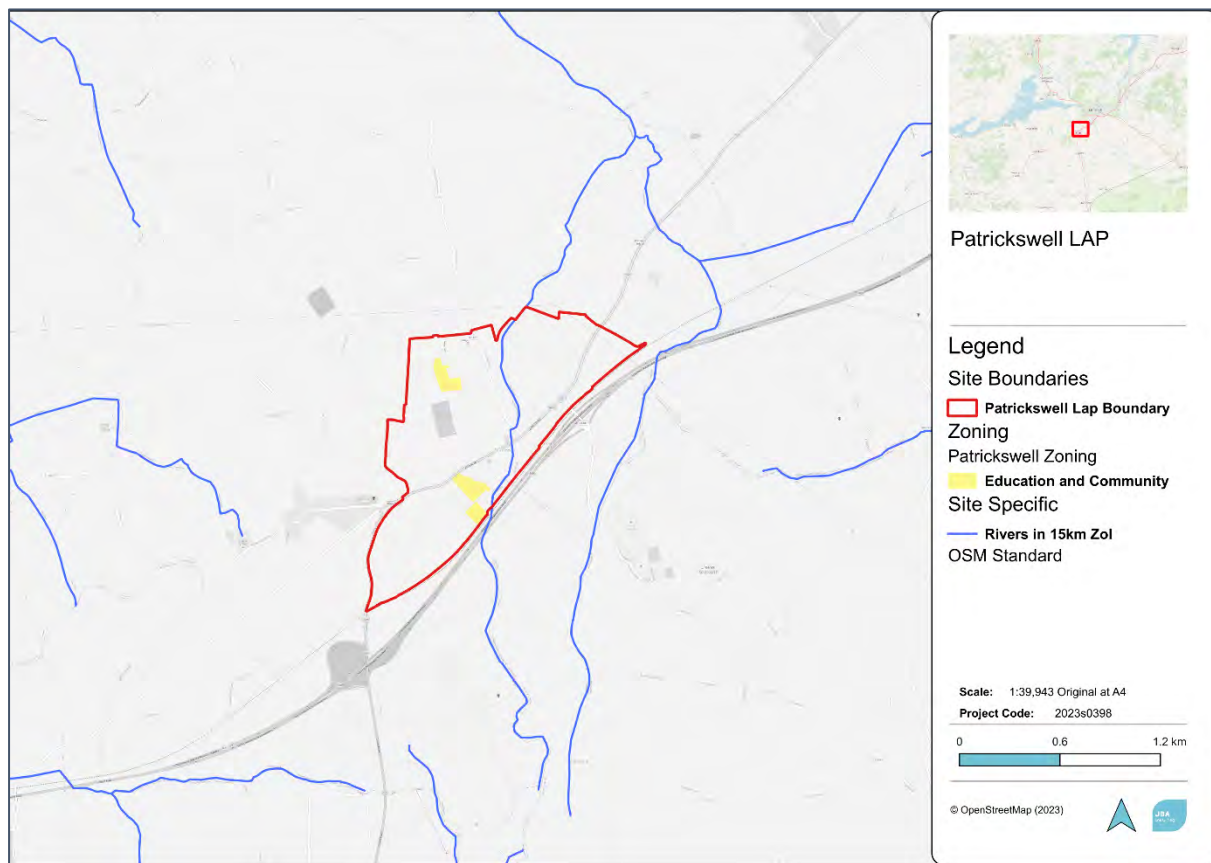


Figure 6-2: Education and Community Zoning of Patrickswell

6.6.3 Enterprise and Employment (including industry)

There are three zones that have been identified for Enterprise and Employment. These areas remain the same as the existing 2015 LAP. The distance from the SAC; the dilution rate of any discharges from the site that would be achieved over the distance and confluence with other rivers; the nature of the receiving habitats downstream of the confluence of the Barnakyle and the Maigue (brackish estuarine habitats, which are not highly sensitive) indicate a weak source-pathway-receptor model for impact. Some presence of ex-situ populations of Otter, Lamprey and Salmon may be expected outside of the SAC, but no significant populations have been identified in the vicinity of Patrickswell as part of the review of records in the area. These populations would only be part of the wider populations of Otter, Lamprey and Salmon in the area of the Lower River Shannon SAC and its tributaries across the region.

Therefore, no impacts on the European Sites are foreseen as a result of this zoning, but project level assessments will still be required as part of the planning consent process. In particular, industries with operational discharges to any watercourses that link to the Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA will require assessment at a project level.

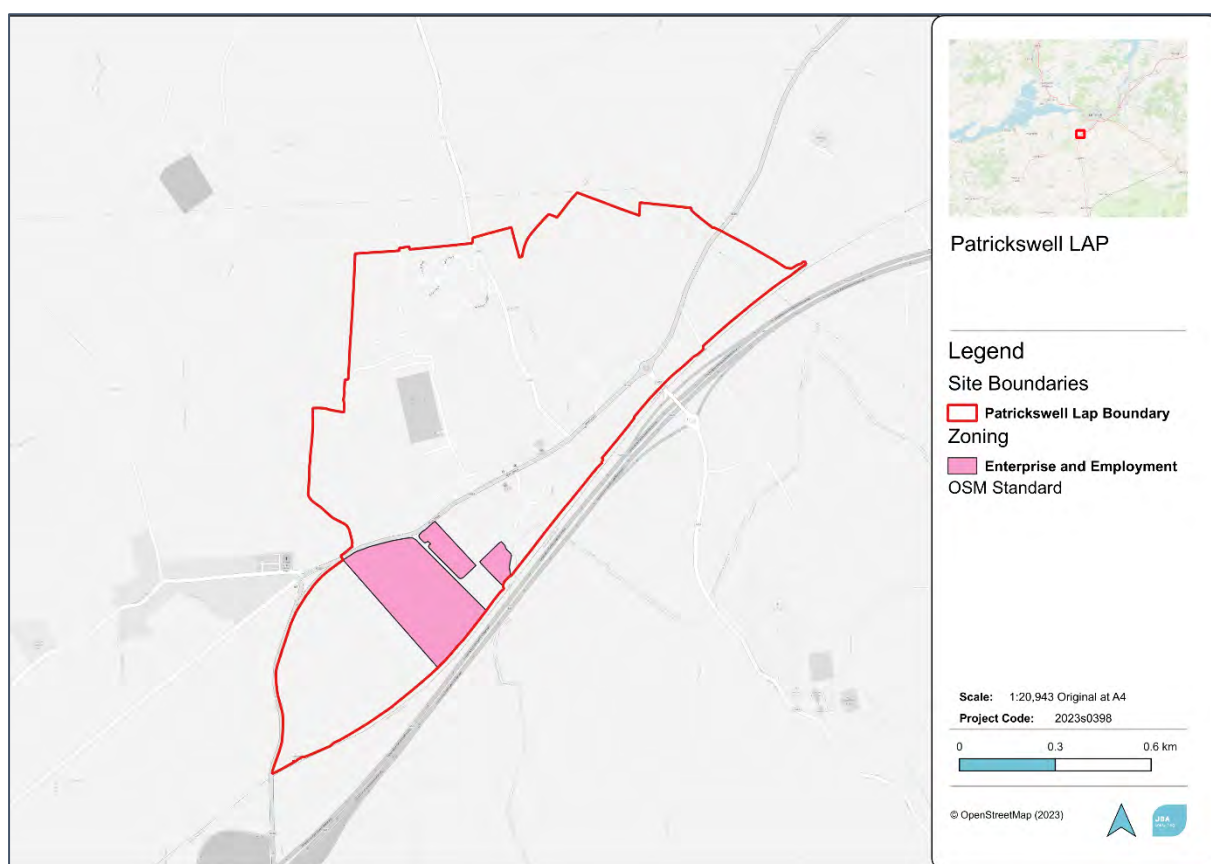


Figure 6-3: Enterprise and Employment Zoning of Patrickswell

6.6.5 Residential Zoning

No impacts on the European Sites are foreseen from the Existing Residential zoning (orange) as a result of this Plan. Some New Residential areas including Phase 2 lands are zoned (brown) as well as already serviced but undeveloped residential areas (brown with yellow stripes) (Figure 6-4). Both the New Residential and the Residential Serviced sites would have construction related impacts associated with development. Increased permanent population will increase pressure on WWTP and have increased traffic and air pollution impacts. Some disturbance and habitat loss may also be anticipated. However, the sites are at a distance from the SAC, and will be serviced by a WWTP. Where ancillary infrastructure is required e.g. road connections to new housing estates could require bridging the Barnakyle River, mitigation is likely to be required, and a project level assessment will allow the specific characteristics of the site to be identified and taken into consideration at the project level.

No clear pathway for impacts has been identified between the sites and the QIs of the SAC. Project level mitigation may still be appropriate, depending on the specifics of the projects. No impacts on the European Sites are foreseen as a result of this zoning, but project level assessments will still be required.

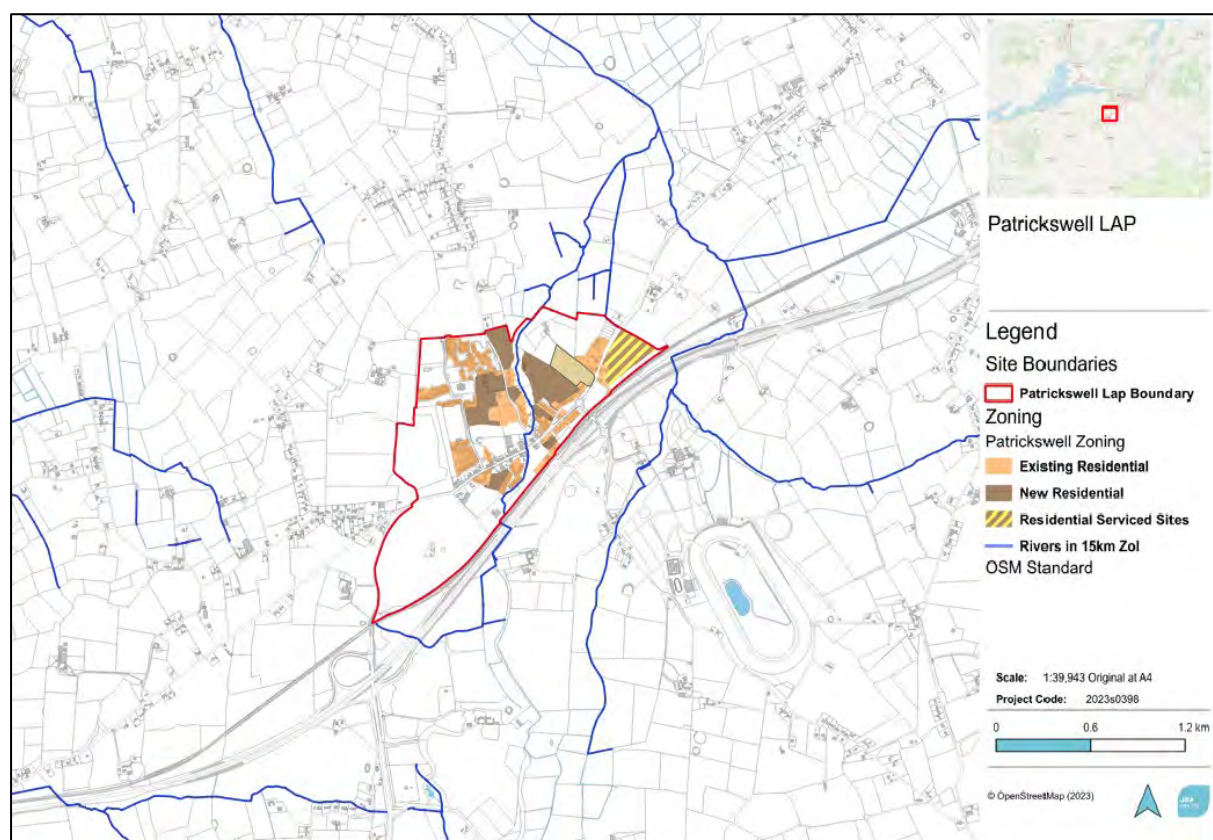


Figure 6-4: New Residential Zoning of Patrickswell

6.6.6 Open Space and Recreation

Open spaces and recreation facilities used by the public may have potential for impact through increased disturbance to wildlife and fragmentation of intact habitat area. Construction impacts may also occur (new pathways/cycleways) in recreation areas. At present, the zoning is placed along the River Barnakyle in the north of the village, however, due to the low scale of works along the Barnakyle, the potential for disturbance is limited, and the open space may serve as a buffer to the river from other zonings. No impacts on the European Sites are foreseen as a result of this zoning.

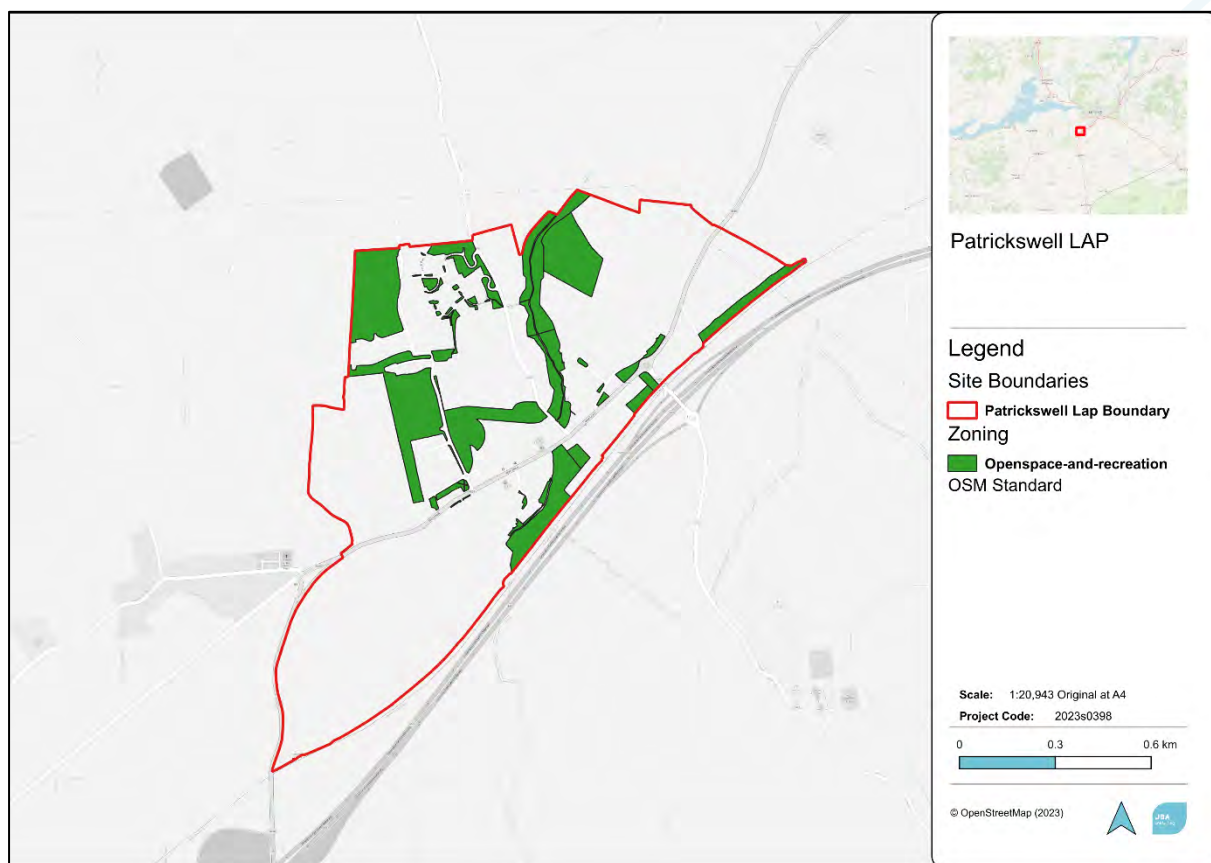


Figure 6-5: Open Space and Recreation Zoning of Patrickswell

6.6.7 Village Centre

The zoning will strengthen retail provision in accordance with the Retail Strategy for County Limerick 2022-2028, emphasise urban conservation, ensure priority for public transport, pedestrians and cyclists, while minimising the impact of private car-based traffic and enhancing the existing urban fabric. No impacts on the European Sites are foreseen as a result of this zoning

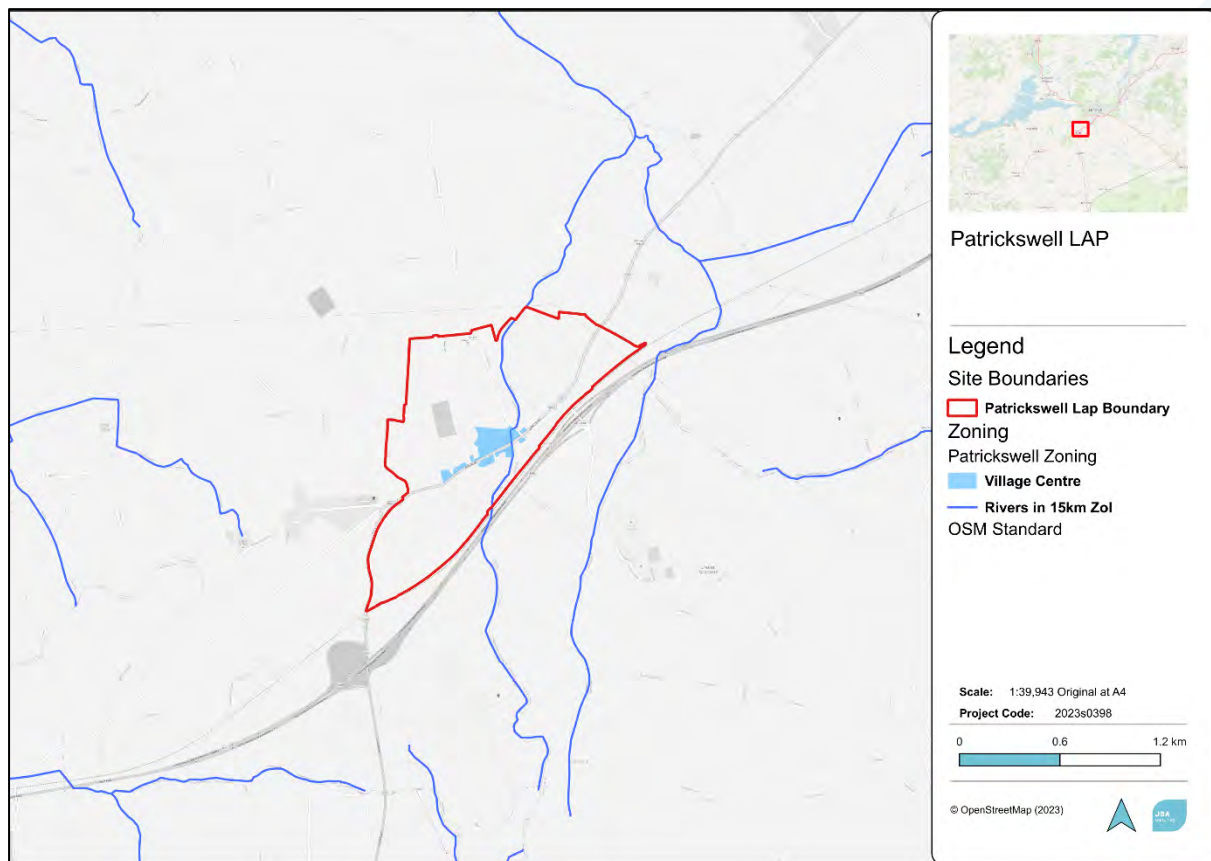


Figure 6-6: Village Centre Zoning of Patrickswell

6.6.8 Opportunity Sites

The opportunity sites shown in Figure 6-6 are confined to the built up area in the town centre and are more infill developments. These may have the standard construction and development type impacts associated with them.

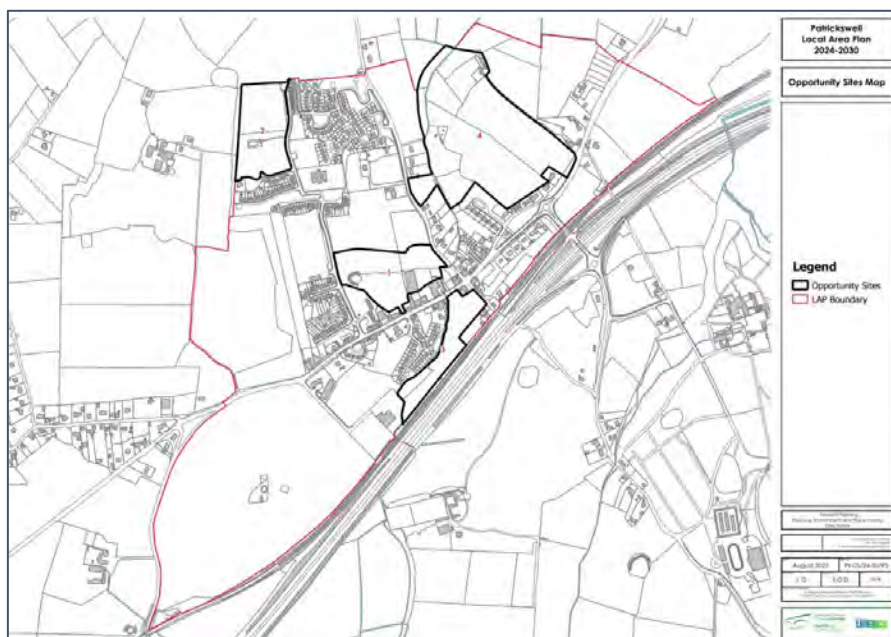


Figure 6-7: Opportunity Sites (as determined from LCCC descriptions).

Site 1: Backland Site off Main Street

This large backland site is located to the rear of Main Street. The Draft Zoning Map provides for two different zoning types: 'Town Centre' and 'Open Space and Recreation'. Total site area is 4.128ha. The site presents a considerable opportunity for creating multiple redevelopment opportunities on these lands within proximity to the Main Street. Part of this area is currently in use as under-utilised backland areas to Main Street and also includes an existing warehouse.

The site is at a distance from the SAC, and no direct pathway for impact on the Qualifying Interests of the SAC has been identified. The presence of the treeline buffer along the Barnakyle will prevent any unforeseen polluting events from entering the River. Impacts on the SAC are unlikely from developments at this site. Projects level assessments will assess the individual elements of the projects to allow for protection of the environment at a project level and for local features of interest.

Site 2: Community facilities at site fronting Faha View and Lisheen Park including St. Patrick's AFC

This is a 3.957ha site zoned Open Space and Recreation. The lands encompass existing community facilities including St. Patrick's AFC, Patrickswell's Multi-Use Games Area and associated lands separated into two areas – the AFC is bordered on all sides by palisade fencing, while the MUGA is located in the middle of open space. The full site is bordered by impressive trees on the western edge and adjoins residential units to the east and the southern end of the site. The site is within walking distance of Patrickswell National School.

The site is at a distance from the SAC, and given the residential areas at the east and southern end of the site which would prevent any impact, no direct pathway for impacts on the Qualifying Interests of the SAC have been identified. Project level assessments will assess the individual elements of the projects to allow for protection of the environment at a project level and for local features of interest.

Site 3: Riverside Park

This area incorporates a long narrow strip of land which bounds the Main Street and the Barnakyle River. This stretch of the Barnakyle River and its associated flood plain is one of the most significant environmental and landscape features in the town. The Draft LAP zones the land as Open Space and Recreation which makes it an ideal potential location for a future public park. Adjacent land uses include

town centre and proposed and established residential areas. The sensitivity of the environment will be taken into account at the design stage, to ensure cycleways and walkways are not creating linear disturbance along the river (as per Policies CH 05, CH 06 and CH 08). Adequate buffering to the river will be provided at sensitive locations, and development will allow the use of the river as a commuting route for the dispersal of species to be maintained. Ecological assessments will allow for protection of the environment at a project level and for local features of interest.

Site 4: Residential Development

This site consists of New Residential sites adjoining Agricultural lands to the northeast of the village centre with potential connections to the Clarina Road. It is a 13.869ha site zoned 'New Residential' and includes some backland development connecting into the village core and previously zoned agricultural land. Considering the connections of this site and the Clarina Road, there would be a need to bridge the River Barnakyle.

The site is bounded by the Barnakyle and a bridge will need to be constructed to connect to the Clarina Road, which would have the potential for instream impacts, mitigation would likely be required. Buffering to the river can be applied at the masterplan/project level, as well as management of storm-water discharges. This is a substantial development and a masterplan/project level assessment will have provision for an AA Screening and likely a Natura Impact Statement to assess the potential for any impact on the European sites.

7 Screening Statement and Conclusions

The two European sites that were identified which have a pathway for potential likely significant effects arising from the implementation of the Plan are:

- Lower River Shannon SAC;
- River Shannon and River Fergus Estuaries SPA.

A weak source-pathway-receptor model for impact has been identified. A hydrological pathway is present between the LAP area and the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA. The hydrological distance to the European Sites are 6.8km and 7.4km respectively. The distance and dilution rate over this distance indicates a weak pathway between the Plan area and the habitat and species of the SAC and SPA.

The weakness of the pathway for impact indicates that, at a plan level, only major construction projects or high-risk projects could potentially impact the European Sites.

To assess the potential for impact to the European sites, the policies and objectives of the Plan were screened. Additionally, zonings and opportunity sites within the Plan area were assessed, with cognisance of the weak source-pathway-receptor model.

No major construction or infrastructure projects have been identified arising from the LAP. Similarly, no projects of a nature that would place significant additional risk on the European Sites within the Zone of Influence of the Plan area have been identified.

At a plan level, none of the projects, policies and objectives, or zonings outlined within the LAP are of the scale, or of a nature, which could have significant adverse impacts on the European sites within the Zone of Influence. Project level assessments will still need to be carried out to examine the individual circumstances of each project, as part of the inherent planning consent process.

It is concluded that the Draft Plan will not result in any significant effects on designated European sites, alone or in combination with other plans or projects.

References

- BSBI (2023) Botanical Society of Britain and Ireland Plant Distribution Map, available <https://bsbi.org/maps>
- Catchment Science & Management Unit (2021) 3rd Cycle Draft Shannon Estuary South Catchment Report (HA 24)
- catchments.ie, 2019. WFD Cycle 2 Catchment Shannon Estuary South Subcatchment Ballynaclogh_SC_010 Code 24_10.
- CIEEM (2018) 'Guidelines and checklist for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management'.
- Commission of the European Communities (2013) Interpretation manual of European Union habitats. Eur 28. European Commission DG Environment, Brussels
- DoEHLG (2009) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities., Department of the Environment, Heritage and Local Government, available: <http://www.wicklow.ie/sites/default/files/Manager's%20report%20on%20submissions%20to%20the%20Proposed%20Amendments.pdf> [accessed 12 Jan 2017].
- DoHPLG (2018) 'River Basin Management Plan for Ireland 2018-2021', available: https://www.housing.gov.ie/sites/default/files/publications/files/rbmp_report_english_web_version_final_0.pdf [accessed 22 Jan 2019].
- DTA (2021) 'The Habitats Regulations Assessment Handbook, October 2021 edition, UK. Tyldesley, D. and Chapman, C.', available: <https://www.dtapublications.co.uk/handbook/browse>.
- Dutch Nitrogen Cases C -293/17 and C -294/17 [online] (2018) available: <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:62017CJ0293>.
- EEA (2018a) Natura 2000 - Standard Data Form: Lower River Shannon SAC [IE0002165], available: <https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0002165> [accessed 23 June 2023]
- EEA (2018b) Natura 2000 - Standard Data Form: Tory Hill SAC [IE0000439], available <https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0000439> [accessed 23 June 2023]
- EEA (2018c) Natura 2000 - Standard Data Form: Askeaton Fen Complex SAC [IE0002279], available <https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0002279> [accessed 23 June 2023]
- EEA (2019) Natura 2000 - Standard Data Form: Curraghchase Woods SAC [IE0000174], available <https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0000174> [accessed 23 June 2023]
- EEA (2020) Natura 2000 - Standard Data Form : River Shannon and River Fergus Estuaries SPA [IE0004077], available <https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0004077> [accessed 23 June 2023]
- EirEco, Roughan & O'Donovan, and Aecom (2019) 'Foynes to Limerick Road (including Adare Bypass) Natura Impact Report', available: https://www.foyneslimerick.ie/_files/ugd/1cba1b_bdaa126f684e4cc4b0e8652f23376278.pdf [accessed 3 Jul 2023].
- EPA (2023) EPA Maps, available <https://gis.epa.ie/EPAMaps/>
- European Commission (1992) Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora [online], available: https://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm [accessed 28 June 2023].
- European Commission (Ed.), 2000. Managing natura 2000 sites: the provisions of article 6 of the "Habitats" directive 92/43/EEC. Office for Official Publications of the European Communities, Luxembourg.
- European Commission (2002) Assessment of Plans and Projects Significantly Affecting European Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission, available https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf
- European Commission (2007) 'Guidance document on Article 6 (4) of the "Habitats Directive" 92/43/EEC - Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission.'
- European Commission (2009) Directive 2009/147/EC of the European Parliament and of the Council on the Conservation of Wild Birds [online], available: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0147&from=EN> [accessed 28 June 2023].
- European Commission (Ed.) (2018) Managing European Sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Luxembourg: Office for Official Publications of the European Communities.
- European Commission (2021) 'Assessment of plans and projects in relation to European Sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC.', available:

- [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021XC1028\(02\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021XC1028(02)&from=EN) [accessed 28 June 2023].
- Fossitt, J.A. (2000) A Guide to Habitats in Ireland, Heritage Council of Ireland series, Kilkenny: Heritage Council/Chomhairle Oidhreachta.
- Gilbert, G., Stanbury, A., & Lewis, Lasley., 2021. Birds of Conservation Concern in Ireland 4: 2020-2026, Irish Birds 34:1-22
- Grace & Sweetman (C-164/17) [online] (2018) available: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62017CJ0164&qid=1677762439151>.
- Holohan v An Bord Pleanála (C-461/17) [online] (2018) available: <https://curia.europa.eu/juris/document/document.jsf?text=&docid=207428&doclang=EN>.
- IFI (2021) Consolidated Fish Counter Summary Report, available <https://www.fisheriesireland.ie/sites/default/files/2022-03/ifi-consolidated-fish-counter-summary-report-2021.pdf>, [accessed 23 June 2023]
- IFI (2023) Water Framework Directive Fish Ecological Status 2008-2021 Open Data Portal, available <https://opendata-figis.hub.arcgis.com/datasets/IFIGis::water-framework-directive-fish-ecological-status-2008-2021/explore?location=52.543095%2C-8.777705%2C10.69> [accessed 23 June 2023]
- Irish Water (2023) <https://www.water.ie/connections/developer-services/capacity-registers/water-supply-capacity-register/limerick/> [accessed 24 July 2023]
- LCCC (2019a) Strategic Environmental Assessment Screening Report For Climate Change Adaptation Strategy for Limerick City and County Council, available <https://www.limerick.ie/sites/default/files/media/documents/2019-10/Strategic-Environmental-Assessment-Screening-Report-Limerick.pdf> [accessed 15 June 2023]
- LCCC (2019a) Appropriate Assessment Screening Report For Climate Change Adaptation Strategy for Limerick City and County Council, available
- LCCC (2022) Limerick | Shannon Metropolitan Area Transport Strategy 2040, available: <https://www.nationaltransport.ie/wp-content/uploads/2022/11/Limerick-Shannon-Metropolitan-Area-Transport-Strategy.pdf> [accessed 15 June 2023]
- NBDC (2023) National Biodiversity Centre Ireland: Maps, available <https://maps.biodiversityireland.ie/Map> [accessed 23 June 2023]
- NPWS (2012) Conservation Objectives: Lower River Shannon SAC 002165. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS, 2012. River Shannon and River Fergus Estuaries Conservation Objectives Supporting Document, Appendix 9, Part 2 of 2.
- NPWS (2013a) Site Synopsis: Lower River Shannon SAC [002165], available : <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY002165.pdf> [accessed 23 June 2023]
- NPWS (2013b) Site Synopsis Tory Hill SAC [000439], available <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000439.pdf> [accessed 23 June 2023]
- NPWS (2014) Site Synopsis Askeaton Fen Complex SAC [002279], available <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY002279.pdf> [accessed 23 June 2023]
- NPWS (2015a) Site Synopsis: River Shannon and River Fergus Estuaries [004077], available: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004077.pdf> [accessed 23 June 2023]
- NPWS (2018a) Conservation Objectives: Tory Hill SAC 000439. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018b) Conservation Objectives: Askeaton Fen Complex SAC 002279. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht
- NPWS (2018c) Conservation objectives supporting document - lesser horseshoe bat (*Rhinolophus hipposideros*), available https://www.npws.ie/sites/default/files/publications/pdf/Lesser_horseshoe_bat_supporting_document_Jan_2018_V1.pdf [accessed 23 June 2023]
- NPWS (2019a). The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitat Assessments. Unpublished NPWS report.
- NPWS (2019b) Site Synopsis Currachchase Woods SAC [000174], [available <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000174.pdf>]
- NPWS (2023) Conservation Objectives: Curraghchase Woods SAC 000174. Version 2. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
- NRA (2009) Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes, National Roads Authority, available: <http://www.tii.ie/technical->

- services/environment/planning/Ecological-Surveying-Techniques-for-Protected-Flora-and-Fauna-during-the-Planning-of-National-Road-Schemes.pdf [accessed 29 Nov 2017].
- OPR (2021) 'OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management'.
- Parnell, J. and Curtis, T. (2012) Webb's An Irish Flora with Illustrations by Elaine Cullen, 8th ed, Cork University Press.
- People over Wind, Peter Sweetman v Coillte Teoranta (C-323/17) [online] (2018) available: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62017CJ0323&qid=1677766011261>.
- Reynolds, S. C.P. (2013) Flora of County Limerick. National Botanic Gardens
- RPS (2018) Capacity Extension at Shannon Foynes Habitats Directive Assessment Volume 6 Natura Impact available: <http://www.irishstatutebook.ie/eli/2011/si/477/made/en/pdf> [accessed 19 Jul 2018].
- Smith, G.F., O'Donoghue, P., O'Hora, K., and Delaney, E. (2011) 'Best practice guidance for habitat survey and mapping', The Heritage Council: Ireland.
- Smithers, R., Harris, R., Hitchcock, G., 2016. The ecological effects of air pollution from road transport: an updated review.
- Stace, C. (2019) New Flora of the British Isles, 4th ed, C&M Floristics.
- Sweeney, P. (2018) River Maigue Instream Biodiversity, Crayfish & Otters. Maigue Rivers Trust, Ireland
- Tyldesley, D. and Chapman, C. (2013) 'The Habitat Regulations Assessment Handbook, May 2021 edition'.
- Windfinder.com (2023) Windfinder.Com - Wind and Weather Statistic Shannon Airport [online], Windfinder.com, available: <https://www.windfinder.com/windstatistics/shannon> [accessed 03 July 2023].

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