MONASTEREVIN TO PORTARLINGTON FEASIBILITY STUDY

BASELINE REPORT

September, 2025

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prepared for:

Kildare County Council

Comhairle Contae Chill Dara
Kildare County Council

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Ár dTodhchaí Tuaithe
Our Rural Future

Rialtas na hÉireann
Government of Ireland

Tionscadal Éireann
Project Ireland 2040

This project is being Part-funded the Department of Rural and Community Development through the Outdoor Recreation Infrastructure Scheme

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Revision History

Revision Ref/Date	Amendments	Issued to
S3-P01 - 28/07/2025	Baseline Report	Kildare County Council
S3-P02 - 15/09/2025	Amended comments from KCC	Kildare County Council

Contract

This report describes work commissioned as per contract signed on June 28th, 2024. This report was prepared by JBA Consulting, IAC Archaeology and John Ruddle Tourism.

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Purpose

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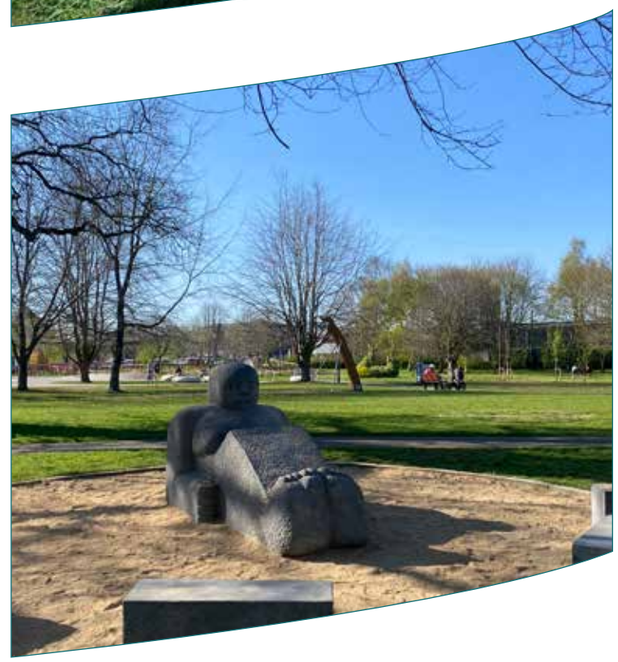

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1.0 INTRODUCTION

JBA Consulting has been commissioned by Kildare County Council (KCC), under funding provided by the Outdoor Recreational Infrastructure Scheme (ORIS), Project Development Measure, to complete a Feasibility Study of the Monasterevin to Portarlington Greenway. The study will assess and evaluate the potential to develop a cycleway and walkway linking the two towns while increasing the opportunities for recreation and tourism.

The Study has been prepared by a multi-disciplinary team led by the landscape architecture team at JBA Consulting, supported by experts in the fields of environment, engineering, heritage, ecology, and tourism. Additional information and reports have been provided by the sub-consultants; the built heritage, archaeology and cultural heritage chapter has been prepared by IAC, the recreation and tourism chapter has been completed by John Ruddle and costings has been prepared by Cuddy QS.

The Feasibility Study (herafter referred to as 'the Study') aims to assess and evaluate the potential for developing a Greenway, Walking, and Cycling link to connect the towns of Monasterevin and Portarlington. The proposed greenway corridor is intended to link into wider active travel networks, including the Grand Canal Greenway and Barrow Blueway, creating regional connectivity between Kildare, Laois, and Offaly.

The study area comprises approx. 24.6km2 between the towns of Monasterevin, Portarlington and Killenard. This area encompasses a section of the River Barrow and its tributaries in addition to a portion of the Grand Canal Barrow Line. The study area is situated across the county boundaries of Co. Kildare, Co. Laois and Co. Offaly.

This baseline report was prepared to describe the opportunities and constraints identified during the baseline assessment for the Monasterevin and Portarlington Walking and Cycle Route Feasibility Study. The information necessary to identify existing conditions in the study area has been gathered from:

- Desktop studies of existing and historical information; and
- Site surveys: note that surveys will continue throughout the Study duration when and where required, as dictated by relevant legislation, guidance documents, and recommendations from specialist advisors on the Study. The information gathered in this report will be updated where necessary to reflect survey results as they become available.

The report has been structured according to each subject, as follows:

- Site Location and Context
- Population & Human Health
- Landscape, Green & Blue Infrastructure
- Biodiversity
- Land, Soils & Geology
- Drainage & Structure
- Climate Action
- Built Heritage, Archaeology & Cultural Heritage
- Recreation & Tourism
- Traffic & Transport
- Baseline Assessment

Relevant documents were considered in this study such as, but not limited to, the Kildare County Development Plan (CDP) 2023-2029, the Laois CDP 2021-2027, the Offaly CDP 2021-2027, Monasterevin Local Area Plan (LAP), Portarlington Joint LAP, Sustainable Drainage Systems Guidance by Kildare County Council (KCC), Laois Climate Action Plan (CAP), Offaly CAP and Kildare CAP. Additionally, assessments carried out within the management remit of Waterways Ireland, the Inland Waterways Association of Ireland and Fisheries Ireland were also considered.

This report relates to **Stage 2 - Baseline Report**, as part of the Feasibility Study. The current and upcoming stages will be carried out in the following order:

- Stage 2 - Baseline Report
- Stage 3 - Engagement Report
- Stage 4 - Options Report
- Stage 5 - Draft Feasibility Report
- Stage 6 - Final Feasibility Report

Abbreviations

AA - Appropriate Assessment
ACA - Architectural Conservation Area
AOD - Above Ordnance Datum
BOCCI - Birds of Conservation Concern in Ireland
CAP - Climate Action Plan
CDP - County Development Plan
CIEEM - Chartered Institute of Ecology and Environmental Management
DEHLG - Department of Environment, Heritage and Local Government
DHPLG - Department of Housing, Planning and Local Government
EC - European Communities
ECJ - European Court Judgement
EPA - Environmental Protection Agency
GHG - Greenhouse gas
GHS - Geological Heritage Sites
GI - Green Infrastructure
GIS - Geographic Information Systems
GSI - Geological Survey Ireland
IAQM - Institute of Air Quality Management
INNS - Invasive Non-Native Species
IROPI - Imperative Reasons of Over-riding Public Interest
IWAI - Inland Waterways Association of Ireland
LAP - Local Area Plan
LCA - Landscape Character Assessment
LCC - Laois County Council
LCDP - Laois County Development Plan
LSE- Likely Significant Effect
KCC - Kildare County Council
KCDP - Kildare County Development Plan
NBDC - National Biodiversity Data Centre
NHA - National Heritage Area
NIS - Natura Impact Statement
NPF – National Planning Framework
NPWS - National Parks and Wildlife Services
OCC - Offaly County Council
OCDP - Offaly County Development Plan
OD - Ordnance Datum
OPW - Office of Public Works
QI - Qualifying Interest
RBMP - River Basin Management Plan
pNHA - Proposed Natural Heritage Area
SAC - Special Area of Conservation
SCI - Special Conservation Interest
SPA - Special Protection Area
WFD - Water Framework Directive
ZoI - Zone of Influence

2.0 SITE LOCATION & CONTEXT

The study area is situated between Portarlington, spanning Co. Laois and Co. Offaly, Monasterevin in Co. Kildare, and Killenard in Co. Laois, as shown overpage in Figure 2-1.

The character of the landscape within the study area is of mixed typology. The three urban areas are characterised by a blend of residential, commercial and recreational uses, with all three areas connected via rural landscapes. The River Barrow and Grand Canal Barrow Line are important elements of the study area's landscape.

2.1 Zoning

The land use zoning provided in the Kildare, Laois and Offaly County Development Plan and relevant Local Area Plans set out the location and objectives for the types of development that the Council recognises to be suitable for each zone.

The study area comprises a combined land use zoning as mapped by the LAP and CDP for each town. This includes Portarlington, Monasterevin and Killenard.

In general, the zoning of the urban centres within the study area is dedicated to Open Space and Amenity, New Residential/Existing Residential, and some small sections which are zoned for Agriculture and Industrial & Warehousing.

The land use for each town comprises mixed uses with an extensive area allocated to Existing Residential. The lands surrounding the study area in Portarlington and Monasterevin also comprise Town Centre, Community, Educational & Institutional, and Commercial/Retail uses. Killenard, as a smaller town, mostly includes Existing Residential and Town Centre uses.

The provision of open space within the study area and each LAP is an important one. The objectives set out by Kildare Council for the Open Space zoning are focused on protecting and catering to open space, amenity and recreational provision. The aim of this land use zoning objective is to *"protect and provide for recreation, open space and amenity provision"*.

The LAP for each settlement provides specific objectives for each area, which is in alignment with the main CDP policies.

Outside the towns of Monasterevin, Portarlington, and Killenard, the land is typically not subject to specific land use zoning. In these areas, the land is generally designated for open space or agricultural purposes. This approach ensures development is concentrated within the towns.

2.1.1 Portarlington

It is an objective of the Draft Portarlington Joint LAP (2025-2031) *"to preserve, provide for and improve active and passive recreational public and private open space"*.

2.1.2 Monasterevin

It is an objective of the Monasterevin LAP (2016-2022) *"to protect and provide for recreation, open space and amenity provision"*.

The LAP highlights the importance of preserving natural amenities in the town, designating lands for open space and recreation along the River Barrow and Grand Canal. It aims to ensure residents and visitors can enjoy these areas while protecting them for future generations and preventing inappropriate development. Additionally, it identifies existing and planned greenways, cycle, and pedestrian routes to enhance recreation, tourism, and connectivity within the town.

2.2 Surrounding Developments

There are several developments within and surrounding the study area that may influence the provision of potential additional amenity.

Figure 2-4 and Table 2-1 shown overleaf include a selection of planning applications from the last three years that have been identified as relevant for the Feasibility Study.

2.3 Site Visits

The site visits carried out between 04/02/2025 and 23/05/2025 identified key characteristics of the study area.
Elements more specific to biodiversity, engineering or archaeology are described in detail in chapters 5, 7 and 9, respectively.

2.4 Landownership

The landownership for the study area was mapped and shown overpage in Figure 2-5 in order to understand the landholdings in this location. Assessing the landholdings will inform the following Stages of the Feasibility Study and help identify the opportunities and constraints arising from these lands.
Only landowners along prospective routes were mapped.

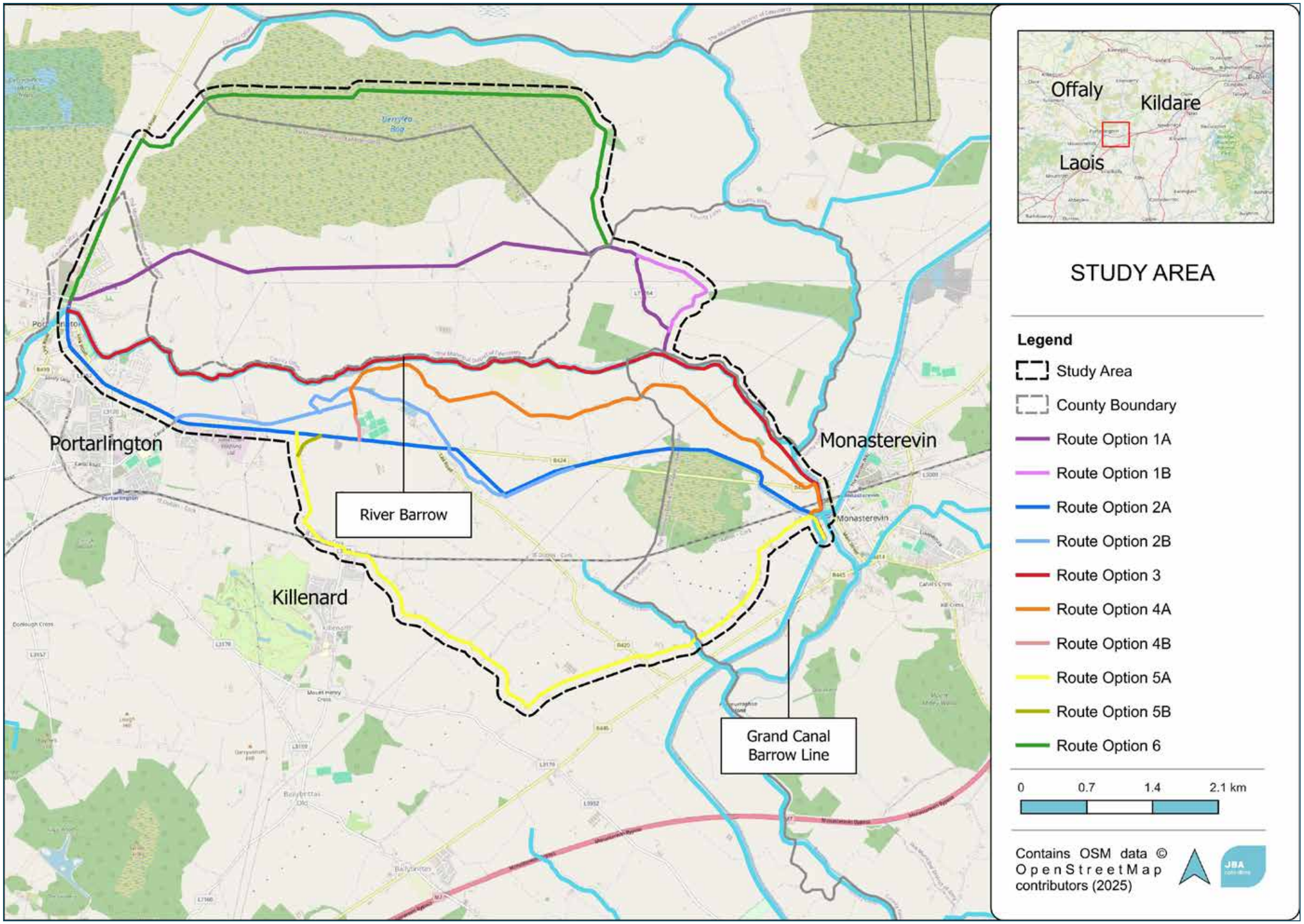


Figure 2-1 Study Area

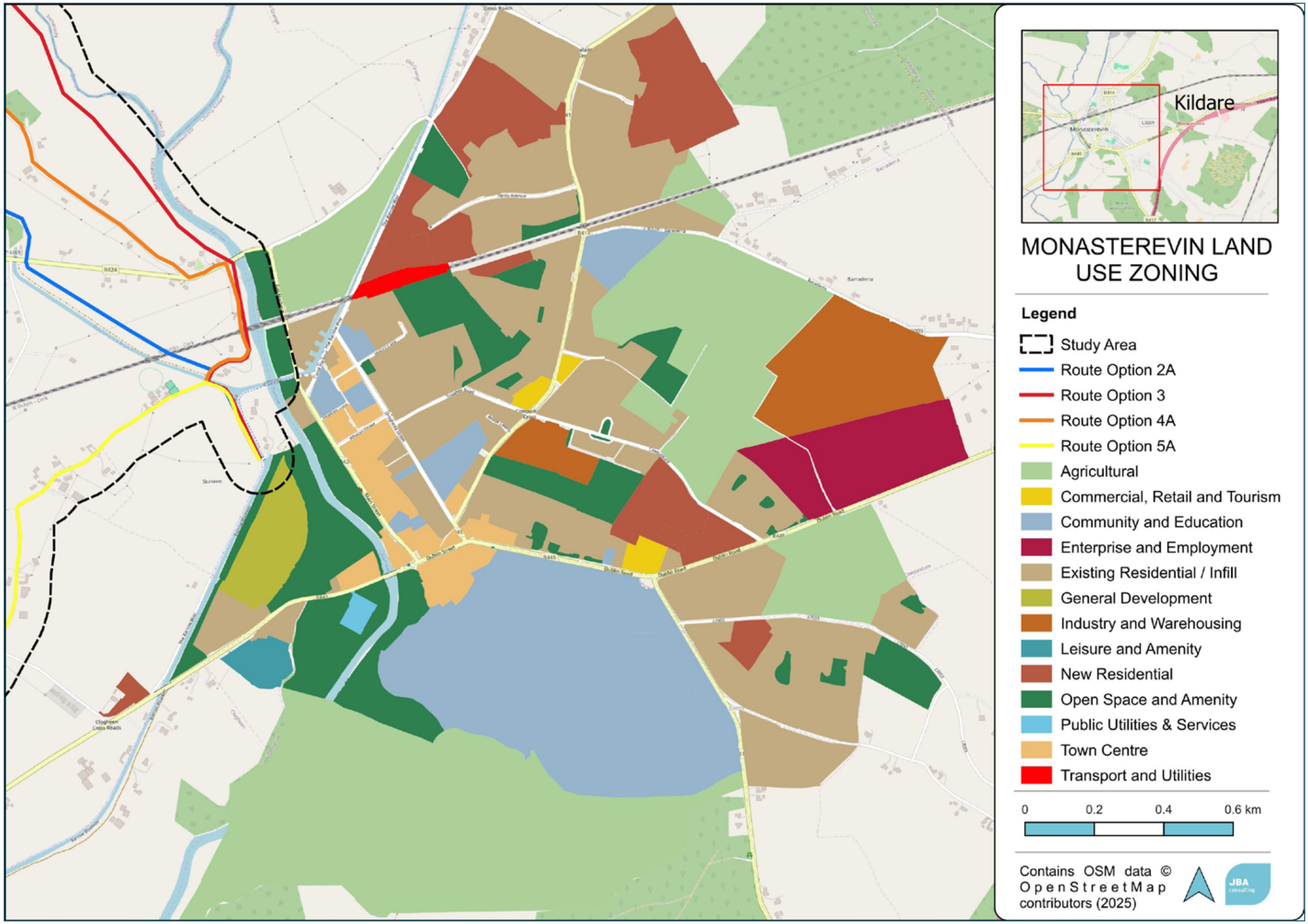


Figure 2-2 Monasterevin Land Use Zoning

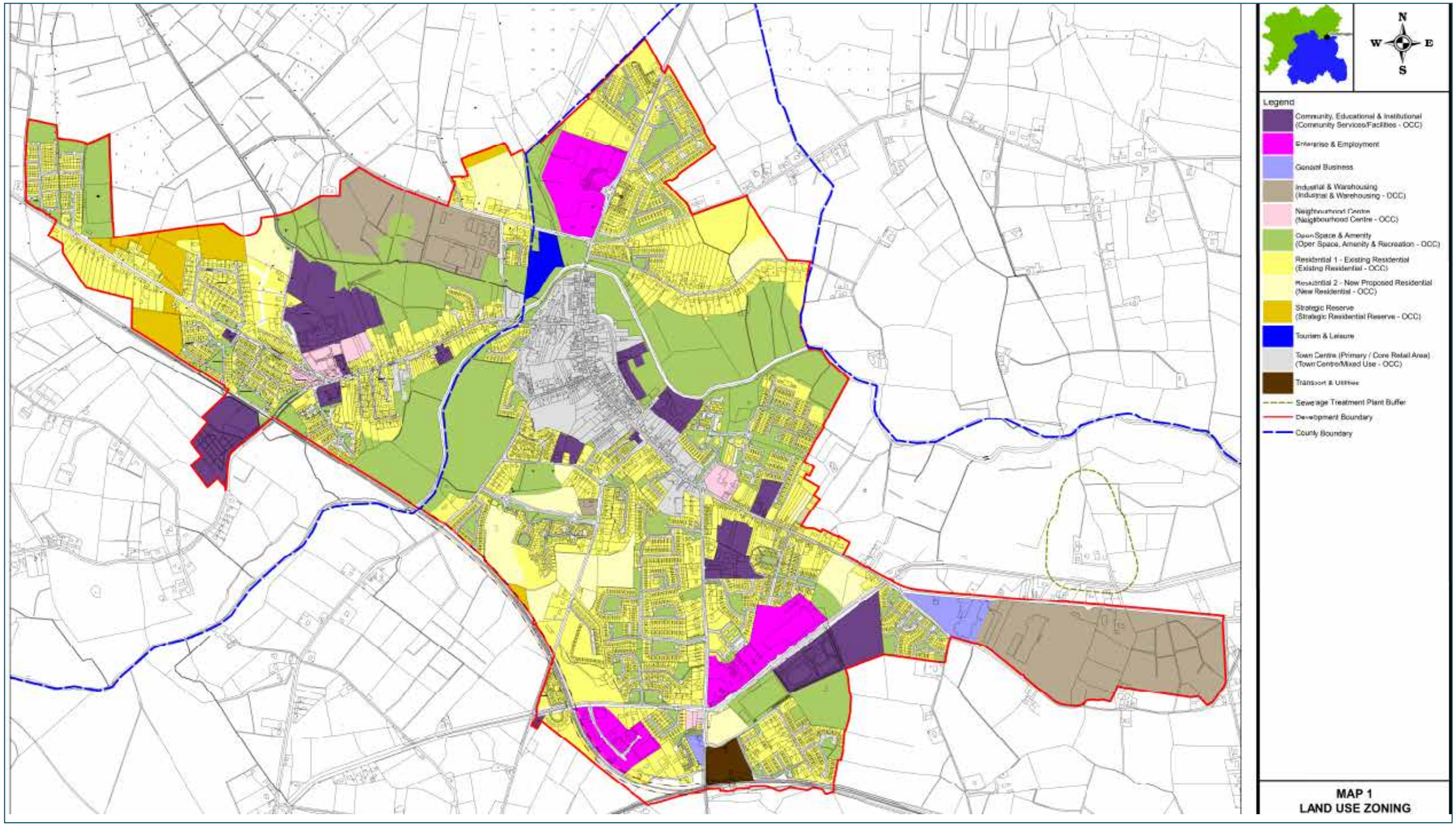


Figure 2-3 Portarlington Land Use Zoning

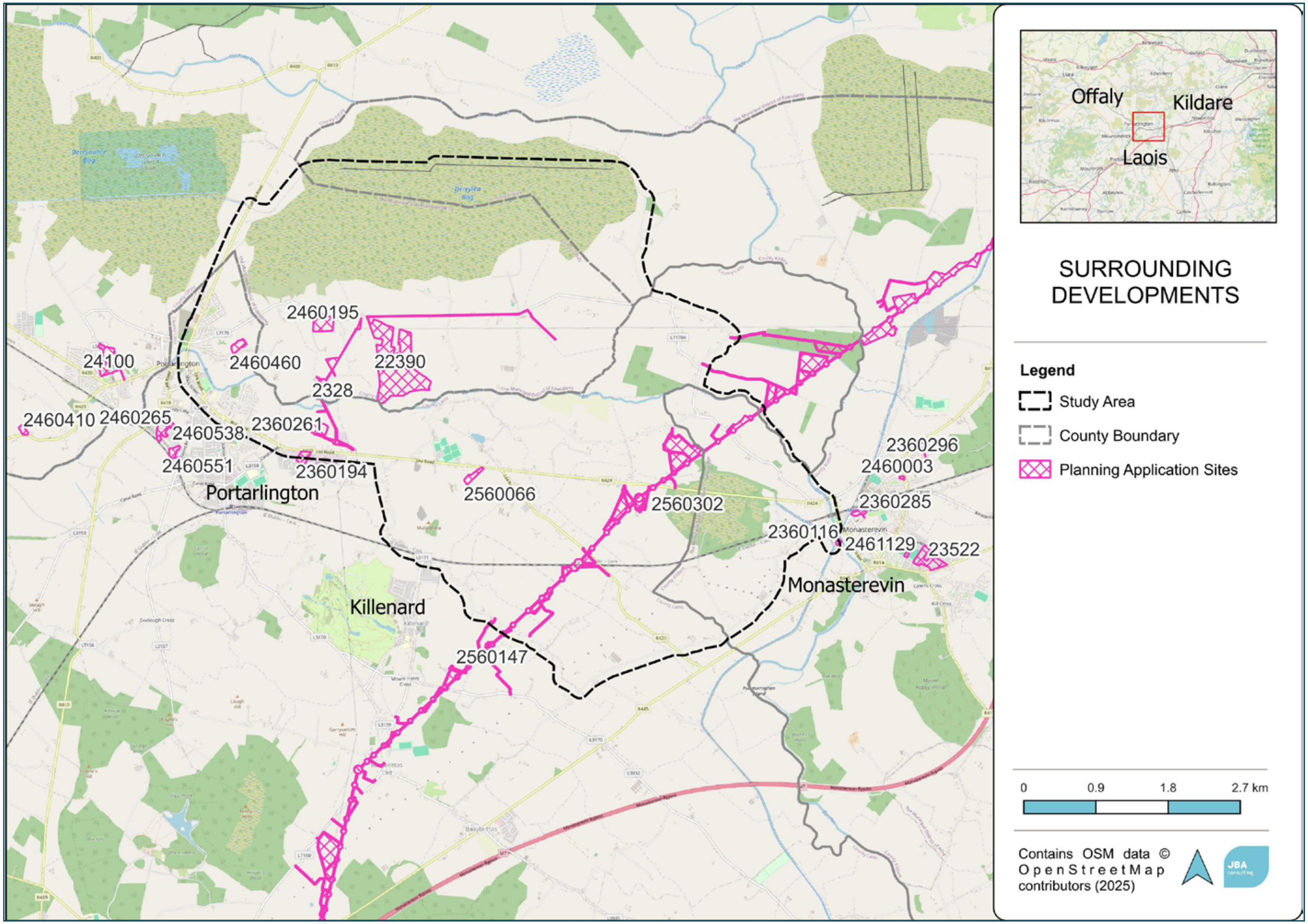


Figure 2-4 Location of Permitted and Proposed Developments

Table 2-1 Permitted and Proposed Developments

Planning Application Ref.	Development Type	Decision Date	Description
Offaly County Council			
22390 ABP - 318436	Solar Farm	7/15/2024	Permitted with Revised Conditions development of a solar farm consisting of solar PV panels mounted on steel supported structures with associated cabling and ducting; the laying of an underground cable in the public roadway for the purpose of grid connection via an off-site substation; 18 single storey inverter stations; 2 steel storage containers; palisade perimeter fencing 2.45m in height; double palisade security gates; permeable gravel access track; 20 on-site pole mounted CCTV cameras approximately 3m in height; 1 temporary construction compound/material storage area; and 1 temporary construction stage Moby Dick type wheel wash system (with overground settlement tank); and all associated ancillary development services and works, all to be provided within a total overall application boundary of 39.23 ha. Permission is sought for the proposed solar farm for a period of 10 years with an operational period of 40 years. An application to obtain permission for the development of associated transmission infrastructure which consists of a 110 kilovolt (kV) substation and grid connection to facilitate the export of power from the solar farm has been submitted to An Bord Pleanála.
2328	Substation for Solar Farm	3/27/2023	Permitted works associated with the proposed uprate of the existing 110kV line in the townlands of Bishopswood and Tinacrannagh, Co. Offaly. The proposed development (uprate) within the functional area of Offaly County Council relates to approximately 1.6km of the 110kV line and comprises: (1) the replacement ("restringing") of the existing overhead line circuit conductor and wires with new higher capacity conductor wires including installation of a new fibre communication connection; (2) the replacement of 1 no. wooden polesets and 1 no. steel masts - any replacement structures has been constructed at, or immediately adjacent to the existing structures they will replace. They has been along the same alignment as existing, the height difference has been up to 4m and they has been of a generally similar appearance, unless otherwise stated; (3) the replacement of crossarms at 1 no. wooden polesets; (4) the replacement of hardware and fittings such as suspension clamps, insulators, and vibration dampeners at all structures, as required; (5) re-capping and remedial works for shear blocks at 1 no. steel mast; (6) installation of bird flight diverters; (7) all associated site development works, including foundation upgrade works and strain assemblies; (8) all associated temporary site development works to gain access to the existing structures including clearance of vegetation, disassembly and reassembly of gate posts/piers and removal and reinstatement of existing fencing; and (9) other temporary associated and ancillary development works required for the purpose of the uprate of the existing circuit, including temporary guard poles, construction compounds, the installation of silt traps, silt fences, stone tracks, ground protection mats and temporary watercourse crossings. The proposed development is part of a larger project which includes uprate works to approximately 20km of 110kV line within the functional area of Laois County Council for which a separate planning application has been lodged with Laois County Council.
2460195	Residential	7/24/2024	Permitted new single storey 5 bedroom dwelling and associated domestic garage including on site tertiary treatment System & infiltration/ treatment area, new site entrance and all ancillary site works at Bishopswood, Portarlington, Co. Offaly.
24100	Educational	9/22/2024	Permitted development on a site measuring approximately 6.2 hectares at Coláiste Íosagáin, Kilmalogue, Portarlington, Co. Offaly, R32 HV25. The development will consist of: (i) demolition/removal of the existing school and removal of temporary buildings, (ii) construction of a new permanent part 3-storey, part 2-storey post primary school building for Coláiste Íosagáin, Portarlington (12,646.3 sq.m floor area) with associated external signage. The constituent elements of the new school comprise (a) 48 general classrooms, 24 specialist teaching rooms with associated preparation rooms, 4 special needs classrooms within a special educational needs suite, double height MP hall and associated PE ancillary accommodation, library, staffroom, administration rooms, toilets, stores and general ancillary accommodation and a double height general purpose hall with associated kitchen and store. (iii) external covered area, external construction studies store, bin store, air source heat pump compound and ESB substation (iv) site development works including revisions to vehicular/pedestrian access arrangements to provide car parking and set-down spaces including 104 standard car parking spaces for staff/visitors, 6 universally accessible parking spaces, 120 cycle parking spaces, temporary and permanent vehicular access and cycle/pedestrian access onto Bog Road; (iv) 7 hard play/MUGA courts (v) roof mounted photovoltaic array. The proposed development also includes hard & soft landscaping, resource areas, activity courtyards, SEN garden/play spaces, a grass pitch, associated site and service infrastructure works.
2460410	Tourism	2/13/2025	Permitted the change of use from dwelling house to tourism accommodation, conversion of the sheds to a Games room/Recreation Area , a single-bed lake pod unit as built to include tourist short-term letting, corporate letting, and all associated site works. Permission is sought to build two pod units, including one two-bedroom and one one-bedroom unit, a wellbeing centre, conversion of part of shed to Bike Hut, Playground, car parking area, and all associated site works.
Laois County Council			
2360261	Battery Storage	3/21/2024	Permitted develop as follows: (i) 136 no. battery storage units; (ii) 17 no. MV skids (PCS + MV/LV Transformer solution); (iii) a new site access and onsite access tracks; (iv) electrical and communications cabling; (v) pole-mounted security cameras; (vi) security fencing and security gates; (vii) a temporary construction compound; (viii) all associated and ancillary site development, landscaping and reinstatement works, over a total site area of ca.3.4 hectares. The operational lifetime of the proposed development is 35-years.
2460460	Residential	4/3/2025	Awaiting Decision The construction of 49 no. residential units to include 27 no. type A, two storey three bed semi-detached , 17 no. type C, two storey two bed terrace and 5 no. house type D, two storey three bedroom, all site works including drainage, footpaths, pedestrian access, landscaping and amenity areas, car parking, public lighting and all other ancillary works.

Continues overleaf

2460265	Residential	Unknown	Awaiting Decision construct residential development comprising 67 No. dwellings of 2-3 storeys in height. The proposed development will fully complete the unfinished Castlelea / Gandon / Landsdowne Estates granted previously (under the original Laois County Council Planning Reg. Ref. No.: (03/1665) and consists of: 6 No. two-bedroom terrace dwellings, 23 No. three-bedroom terrace dwellings, 18 No. three-bedroom semi-detached dwellings, 2 No. three-bedroom detached dwellings, 16 No. four-bedroom semi-detached dwellings, and 2 No. four-bedroom detached dwellings; all with associated vehicular parking, boundary treatments, private and public open spaces, hard and soft landscaping, roads, pedestrian walkways and all other ancillary and associated site development.
2460551	Residential	Unknown	Awaiting Decision construct a 40 Unit Housing Development consisting of 6 No. Single Storey Semi Detached houses, 12 No 2 Storey Terraced Houses, 10 No. 2 Storey Semi-detached houses a 3 Storey Duplex and Apartment Building comprising of 4 Two Storey Duplex Units and 2 No 2 bed Apartments over and another 3 Storey Duplex and Apartment Building comprising of 4 Two Storey Duplex Units and 2 No 2 bed Apartments over. The proposed development has been accessed from the existing Lansdowne/Castlelea Estate and the proposed development will also include estate roads, footpaths, public open space, foul and surface water drainage, landscaping and all associated infrastructure works and services on 1.128ha.
2360194	Community	7/2/2024	Permitted 1. Change of use of existing spaces to retail, education, community, recreational and event use, including an ancillary café area. 2. Outdoor shelters and use of same for retail, market stalls and community event uses. 3. Modifications to elevations of existing buildings 4. Uses on the site as described by Class 37, Schedule 2, Part 1 of the Planning and Development Regulations for a period not exceeding 15 days continuously and not exceeding an aggregate of 84 days per annum. 5. Opening hours of 9am – 10pm daily
2560066	Residential	4/6/2025	Awaiting Decision remove 2 No. existing steel sheds; the construction of 3 No. single occupancy, single-storey residential care units (each with an individual gross floor area of 65 sq m), provided in 2 No. standalone buildings A and B (with gross floor areas of 147 sq m and 74 sq m respectively) to the rear of the main residential care unit; the decommissioning of the existing wastewater treatment system and percolation area and provision of a new wastewater treatment system and percolation area in a revised location; hard and soft landscaping; soakaways; EV charging stations; plant; bicycle parking; and all associated site and development works, both above and below ground. Additionally retention permission is sought for 2 No. laundry sheds (14 sq m and 18 sq m respectively) and a 282 sq m car parking area.
Kildare County Council			
2360116	Recreational	12/19/2023	Permitted for the development of a Water Sports Hub comprising of (a) a single storey building with classroom, office, changing rooms/ toilets, kitchenette, drying room, workshop and external storage/ covered areas (b) A wastewater treatment system and percolation area (c) 2no. Equipment storage containers (d) all associated site works including a floating pontoon to River Barrow, paths, parking and boundary treatments.
2360285 ABP - 319795	Residential	5/12/2024	Permitted for the demolition of a blockwork section of boundary wall at the entrance to the site and demolition of the existing bungalow (89.3sqm); The redevelopment of the following existing buildings to provide 21 no. apartments: The Malt House, consisting of 17 apartments (6 no.1 beds, 11 no.2 beds); The Managers House consisting of 2 No. apartments (both 2 bed units); the existing stable block consisting of 2 No. apartments (both 1 bed units). The proposed construction of 16 No. two storey, residential dwellings comprising of: 1 No. two bed dwelling; 8 No. 3 bed dwellings; and 7 No. 4 bed dwellings. Also 2 no. new single storey apartments (both 2 bed units). 39 No. units proposed in total. All with associated internal access roads, footpaths, car parking spaces, cycle parking, bin storage, site works, landscaping, boundary treatments, drainage and alterations to both the existing vehicular entrance and the entrance to Station House (Protected Structure, RPS No. B21-07).
23522	Residential	7/11/2023	Permitted Development of 113 dwellings at the unfinished housing estate at Brocan Wood, Cowpastures Lane. The proposed development will consist of (i) 33 No. 4 x bedroom detached dwellings, 22 No. 4x bedroom semi-detached dwellings, 34 No. 3 x bedroom semi-detached dwellings, and 24 No. 3 x bedroom terrace swellings (all two storey) (ii) Creche (single storey), pumping station, (iii) 2 No. pedestrian access points from Cowpastures Land and 1 No. from Dublin Road, (iv) Cycle lane and footpath along Cowpastures Land and Dublin Road, (v) Landscaping and new site boundaries and (vi) Upgrade of existing Dublin Road and Cowpastures Lane junction and (vii) Services and all associated and ancillary works. Vehicular access has been via existing access on Cowpastures Lane.
2461129	Recreational	3/23/2025	Awaiting Decision for a proposed all-weather pitch with a 2.4m high perimeter fence, 4 no. 12m high floodlights, and all ancillary site works
2460538	Residential	12/4/2024	Permitted for the development consisting of 8 no. 2 storey dwellings comprised of 2 and 3 bed, detached, semi-detached and terraced dwellings located within the existing Ferns Bridge development, previously permitted under Ref.s 15/1104 & 21/267, and Ref.s 15/1041 & 20/1460. The proposed development provides for all associated site development works on a 0.23 hectare site at Ferns Walk, Ferns Bridge, Monasterevin, County Kildare. Revised by Significant Further Information which consists of; 8 no. 2 storey dwellings, comprised of 5 no. 3 bed semi-detached and terraced houses and 3 no. 2 bed terraced houses, all associated site development works on a 0.23 hectare site.
2360296	Residential	6/18/2024	Permitted for 1) Demolition of existing dwelling and garage; 2) Construction of 26 no. dwellings. The dwellings will consist of 1 no. Detached bungalow, 1 no. 2-storey terrace block containing 2 no. 3-bed houses and 3-no. 2-bed houses, 1 no. 2-storey terrace block containing 2 no. 3-bed houses and 2 no. 2-bed houses, including bin and bike stores to mid-terrace units, 8 no. 2-storey 4-bed semi-detached houses, 4 no. 3-bed semi-detached houses & 1 no. 2-storey apartment block containing 4 no. 1-bed units and adjoining bin store; 3) New recessed access road off the R414 with vehicular connection and pedestrian connections to Oldgrangewood housing scheme; 4) Provision of new cycle lane and footpath to boundary of the R414; 5) Footpath on R414 to connect to Ball Alley crossroads, 6) Decommissioning of existing septic tank; 7) Connection to existing foul water sewer at Oldgrangewood housing scheme and 8) All associated ancillary site-works.

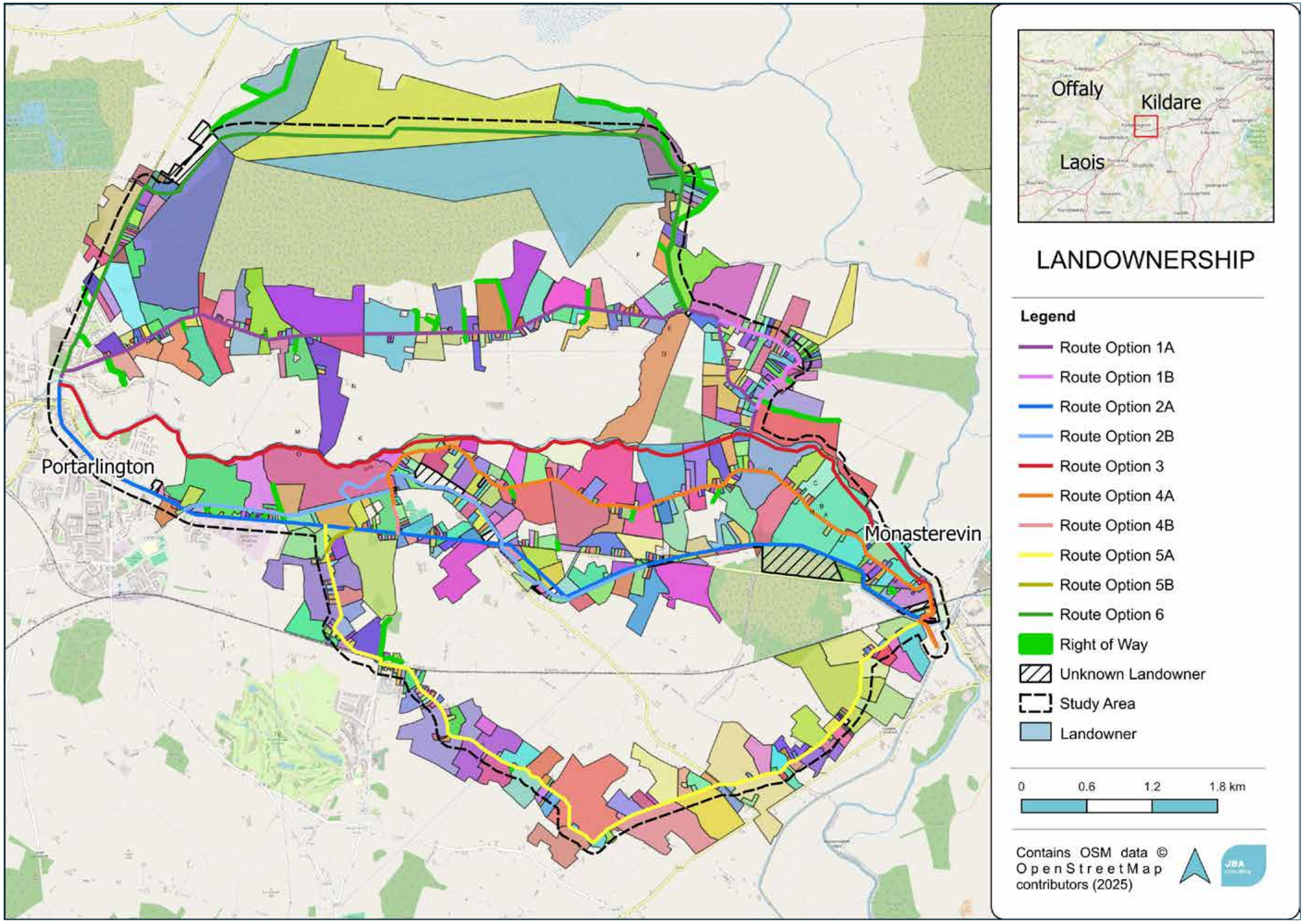


Figure 2-5 Landownership of the Transient Lands

3.0 POPULATION & HUMAN HEALTH

3.1 Development Plans and Development Pressures

TThe study area extends from the borders of Portarlington, Monasterevin, and Killenard, with the aim of connecting these three towns. Monasterevin is located in the Kildare-Newbridge Municipal District of Co. Kildare and Killenard is located in the municipal district of Graigucullen-Portarlington in Co. Laois. Portarlington is situated on the boundary of Laois and Offaly, lying approx. 75% within Co. Laois, and the rest within Offaly. Portarlington is therefore located within both the municipal districts of Graigucullen-Portarlington, and Edenderry, respectively. Within the Offaly County Development Plan (OCDP) 2021-2027, Portarlington has been identified as a self-sustaining town, while in the Laois County Development Plan (LCDP) 2021-2027, it has been identified as a self-sustaining growth town. Within the same CDP, Killenard is identified as a village and within the Kildare County Development Plan (KCDP) 2023-2029, Monasterevin is classed as a self-sustaining town. The identified roles of these towns are shown in Table 3-1 below.

Table 3-1 Roles of towns within study area as identified in CDPs

Town	Role	Description
Monasterevin	Self-sustaining town	High level of population growth and a weak employment base. Has the potential to improve employment through biotechnology, tourism, and food and beverage products.
Portarlington	Self-sustaining growth town	Market and commuter town with good transport links, offering a moderate level of jobs and services, with the capacity for growth to become more self-sustaining.
	Offaly	Provide essential functions for residents and surrounding areas, including housing, employment, and services. Rapid population growth has led to commuter-focused expansion, necessitating investment in services, infrastructure, transport, amenities, and local employment to become more self-sustaining.
Killenard	Village	Play a crucial role in providing local services and amenities, featuring attractive streetscapes and heritage buildings, and offer opportunities for future expansion to attract residents seeking a rural lifestyle.

Given the population growth and commuter-focused residential expansion in these towns, developing an active travel corridor between Portarlington, Monasterevin, and Killenard is necessary. This corridor would enhance connectivity, facilitate safe and efficient travel, and reduce reliance on cars. Improved transport links would ensure better access to local services, employment, and amenities, helping the towns grow sustainably while keeping housing development in balance with infrastructure needs.

3.1.1 Transport

All three CDPs address the importance of integrating sustainable mobility and transport options within their respective counties, to provide more sustainable modes of travel and to transition towards a lower carbon transport system.

Chapter 5 of the KCDP outlines the 'Avoid-Shift-Improve' policy, which aims to reduce the need for motorised travel, shift towards more sustainable travel modes, and enhance the energy efficiency of motorised transport. A key component of this policy is the improvement and development of sustainable cycling pathways and facilities. This initiative will also contribute to creating 10-minute settlements and reducing traffic congestion. Developing greenways and cycle/pedestrian routes is mentioned in several objectives in the KCDP (TM O24, TM O36, LR O48) and in the Monasterevin Local Area Plan (LAP) 2016-2022 (TO 3, UD 9).

Chapter 10 of the LCDP details the Council's commitment to promoting sustainable travel options, including public transport, walking, and cycling. It emphasises the importance of encouraging a shift from private car use to more eco-friendly alternatives. The chapter also highlights the numerous benefits of greenways, such as providing safe, traffic-free spaces for walking and cycling, offering secure commuting routes to school and work, and promoting healthy exercise. Additionally, it recognises the economic advantages of greenways, which create jobs in cycle hire and service roles within the food and construction sectors. Objectives relating to greenways and cycle routes can be found within both the LCDP (NRPO 5, NRPO 6, NRPO 7, NRPO 10, NRPO 13, ABT 4) and the Portarlington Joint LAP 2025-2031 (12.13, 15.9, 15.15).

Chapter 8 of the OCDP outlines the Council's commitment to enhancing regional accessibility, promoting sustainable transport, and developing a safer, more efficient, and connected network while supporting the transition to a low-carbon system. The OCDP follows the 'Avoid-Shift-Improve' framework to reduce reliance on private cars by encouraging walking and cycling—eco-friendly travel modes that support transport, recreation, and well-being. To achieve this, the Council aims to create a safe, integrated, and accessible network for pedestrians and cyclists across urban and rural areas. This will include developing cycling and expanding greenways to enhance connectivity and accessibility, as per objectives TRP-16 and SMAO-08 of the OCDP.

3.1.2 Environment

The County Councils of Kildare, Offaly, and Laois integrate biodiversity and environmental objectives into their CDPs, aiming to protect natural ecosystems, preserve biodiversity, and promote sustainable development. Their goals include safeguarding the environment, benefiting all sectors of society, and strengthening efforts to combat biodiversity loss and ecosystem degradation.

The River Barrow, an EU designated Special Area of Conservation, and the Barrow Line of the Grand Canal, a proposed Natural Heritage Area, are both vital habitats with high conservation value. These ecological assets must be taken into account when developing the project.

3.1.3 Cultural Heritage

Chapter 11 of the KCDP 2023-2029 recognises the significance of built and cultural heritage, ensuring its protection, management, and enhancement through appropriate measures. Monasterevin contains an Architectural Conservation Area (ACA) which is located approx. 80m south and east of the study area.

Lea Castle, an Anglo-Norman masonry castle, is located within the study area along the banks of the River Barrow. This 13th century feature is recognised within the LCDP Record of Protected Structures (RPS) (RPS 403) and is protected by the National Monuments Service (LA00110). Lea Castle House, a 19th century two-storey dwelling, is located approx. 180m southeast of Lea Castle and is listed on the National Inventory of Architectural Heritage (Reg. No. 12800555) in addition to the Laois RPS (RPS 549).

The Laois, Kildare, and Offaly CDPs highlight numerous additional RPS sites within the study area. In line with the objectives of these plans, identified built and cultural heritage must be preserved and maintained throughout development within the study area. This is discussed in more detail in Chapter 9 of this Baseline Report

3.2 Community Facilities

Within the urban centres adjacent to the study area, there are a range of community services including Portarlington Primary Care Centre, nursing homes, Garda and Fire Stations, libraries, leisure centres, community centres and churches. In addition to these there are several primary and secondary schools spread across Portarlington, Monasterevin and Killenard. Future expansion of school sites has been based on population growth in the town.

Over the lifetime of the CDP, it is expected that the range of educational, sporting and community facilities has been expanded.

3.3 Recreational Amenities

The study area and its surroundings feature a variety of sports facilities and clubs, including GAA, rugby, soccer, and golf. It also features several children's playgrounds, multi-use games areas, and walking and cycling routes, such as those along the canal.

In addition to these larger amenities, there are numerous smaller public open spaces that provide vital recreational value to residents. Examples include the People's Park in Portarlington and the Riverside Park in Monasterevin. Both parks offer green spaces with paved pathways and benches, with the People's Park also featuring a playground and multi-use games area.

Recreational amenities and tourism are discussed in more detail in Chapter 10 of this Baseline Report.

3.4 Public Consultation

Contact will be made with individual landowners where necessary as surveys progress. Further engagement with the scheme will be encouraged.

3.5 Potential Constraints and Opportunities

Constraints which will be considered in the development of the Study include public support and Constraints which has been considered in the development of the study include public support and engagement and public access to local amenity areas. Engagement with the local community is important for gaining support for an assessment such as this. Recreational amenities that fall within the study area will need to be considered so that access is not disturbed, and relevant parties consulted with. Additionally, accessing private land has been a constraint, requiring permission from a large number of different landowners.

The study may provide positive opportunities and benefits for the local population in regard to improved recreational amenities and community spaces. Additionally, there is a potential increase in tourism and income for the nearby urban areas from increased footfall and users of the proposed greenway

4.0 LANDSCAPE, GREEN & BLUE INFRASTRUCTURE

4.1 Landscape Character

The study area covers three local authority areas areas, comprising Kildare, Laois and Offaly County Councils. The County Development Plan for Kildare and Laois contains a Landscape Character Assessment that identifies the principal Landscape Character Areas (LCA) for Kildare and Landscape Character Types (LCT) for each Laois (Figure 4-1 overpage). Offaly does not yet have a Landscape Chararacter Assessment, but the OCDP does include discussions on landscape sensitivity and general landscape types.

The majority of the study area is within Co. Laois and includes the Lowland Agricultural and Urban Fringe LCTs. The southeast section of the study area includes Kildares River Barrow and Southern Lowlands LCAs and the northern section is included in County Offaly's Landscape Character Assessment.

The landscape of County Kildare is composed of a central plain surrounded by uplands to the east, which lie at the foothills of the Wicklow and Dublin Mountains, and hills at the Chair of Kildare and the Newtown Hills. The main watercourses include the River Liffey, River Barrow, River Slate, River Boyne, Royal Canal, Grand Canal and Rye Water River, providing essential landscape features.

The Landscape Character Assessment (LCA) for County Kildare was prepared in 2004, focusing on the "the discernment of the character of the landscape based on its land cover and landform, but also on its values, such as historical, cultural, religious and other understandings of the landscape." (KCDP, 2023-2029).

The LCDP 2021-2027 defines the Lowland Agricultural LCT as a flat, open landscape large fields bounded by deciduous hedgerows and mature trees, and includes many 18th and 19th-century demesnes with mixed woodland and parkland. It covers the largest area in Co. Laois. Policy Objective LCA 13 of the LCDP regonises "that this lowland landscape character area includes areas of significant landscape and ecological value, which are worthy of protection, particularly the 18th and 19th century estate landscapes and associated parkland & woodland to develop them as a tourism resource". The Urban Fringe LCT is characterised by development along radiating road routes, forming a ribbon-like pattern.

Table 4-1 Landscape Objectives of KCC applicable to the Study Area

Objective	Description
LR O1	Ensure that consideration of landscape sensitivity is an important factor in determining development uses. In areas of high landscape sensitivity, the design, type and the choice of location of the proposed development in the landscape has been critical considerations.
LR O2	Require a Landscape/Visual Impact Assessment to accompany proposals that are likely to significantly affect:
	· Landscape Sensitivity Factors;
	· A Class 4 or 5 Sensitivity Landscape (i.e. within 500m of the boundary);
	· A route or view identified in the KCDP
LR O4	Ensure that local landscape features, including historic features and buildings, hedgerows, shelter belts and stone walls, are retained, protected and enhanced where appropriate, so as to preserve the local landscape and character of an area.
LR O9	Continue to support development that can utilise existing structures, settlement areas and infrastructure, whilst taking account of local absorption opportunities provided by the landscape, landform and prevailing vegetation.
LR O10	Recognise that the lowlands and the transitional area are made up of a variety of working landscapes, which are critical resources for sustaining the economic and social well-being of the county and include areas of significant landscape and ecological value, which are worthy of protection.
HAO1.1	To protect the special landscape character of historic landscape areas and ensure that new development enhances the special character and visual setting of the historic landscapes and to prevent development that would have a negative impact on the character of the lands within the Historic Landscape Areas.
BI O48	Avoid developing walking/cycling trails through sensitive ecological habitats. A multi-disciplinary team including an ecologist and flood risk expert shall review all riverine sites to determine the appropriate zonation and permissible uses.
BI O70	Ensure that the Green Infrastructure Strategy and Network identified in this County Development Plan and Local Area Plans is used to inform the development management process to ensure that new residential areas, business/ industrial development tourism and other relevant projects contribute towards the conservation and protection of Kildare's habitats and species, and the protection, management and enhancement of theexisting Green Infrastructure in terms of design, layout and landscaping.

The findings of Kildare and Laois' Landscape Character Assessment, along with the OCDP, outline a landscape sensitivity rating (Figure 4-2 overpage), which is measured by "the ability of the landscape to accommodate change or intervention without suffering unacceptable effects to its character and values. It is determined using the following factors: slope, ridgeline, water bodies, land use and prior development." (KCDP, 2023-2029).

The landscape sensitivity of the study area within Co. Kildare is generally identified as Class 1 – Low, apart from the River Barrow riparian zone which is rated as Class 4 – Special Sensitivity.

Class 1 comprises the areas with the capacity to generally accommodate a wide range of uses without significant adverse effects on the appearance or character of the area. Class 4 does not allow for such a wide variety of new uses, as it is deemed as being susceptible to significant effects on the appearance or character of the landscape.

The Kildare County Development Plan identified the likely compatibility between land uses and principal landscape areas.

The Southern Lowlands are most suitable for agricultural but can accommodate agricultural, forestry, housing, tourism, infrastructure, extraction or energy developments. The River Barrow only allows for agriculture, forestry or tourism projects, and has low to least compatibility with any other land use.

It is a policy of County Kildare to "protect and enhance the county's landscape, by ensuring that development retains, protects and, where necessary, enhances the appearance and character of the existing local landscape."

The objectives are consistent with the council's policy, aiming to ensure the character of the landscape and visual amenity is protected and not significantly impacted. Examples of some key objectives applicable to the study area are as shown in Table 4-1 above.

LCDP's Low Sensitivity landscape, which accounts for all of the study area located in Laois, is capable

of accommodating a variety of uses without significantly affecting the landscape's appearance or character. Laois CDP recognises the principles for developments for landscapes of low sensitivity which include:

- Recognise the ecological and landscape value of 18th and 19th century estate landscapes, parkland, and woodland for tourism development.
- Permit development that uses existing structures, settlement areas, and infrastructure, considering visual absorption opportunities from topography and vegetation.
- Acknowledge the importance of working landscapes in sustaining the county's economic and social wellbeing.
- Develop mixed-use amenity areas to create a landscape buffer transitioning between urban and rural areas.

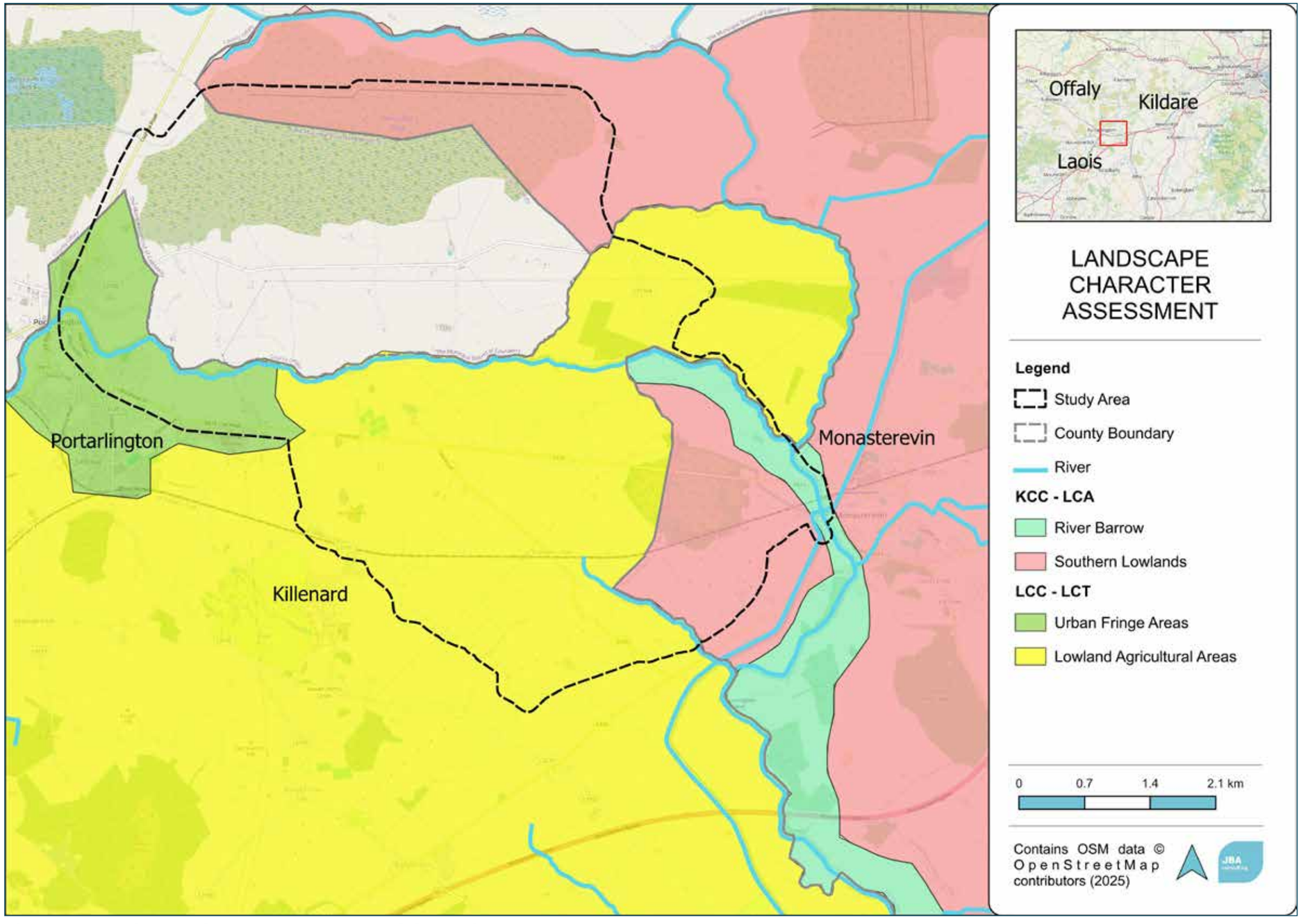


Figure 4-1 Landscape Character Assessment of the study area

The landscape sensitivity of the study area within Co. Offaly is predominantly classed as low sensitivity, with a small section classed as high sensitivity along the banks of the River Barrow. Additionally, the bog north of the study area is classed as moderate sensitivity. Low sensitivity areas are resilient landscapes that can tolerate change, including Offaly's main urban and farming regions. These areas are capable of accommodating development and can effectively absorb well-designed and appropriately located projects across various categories, making them suitable for a wide range of developments. Moderate sensitivity areas can accommodate development but with constraints on scale and impact, as certain landscape elements are more susceptible to change. High sensitivity areas are vulnerable and can only support minimal development pressure, with landscape elements highly sensitive to alterations. Exceeding these limits may significantly impact the landscape's character.

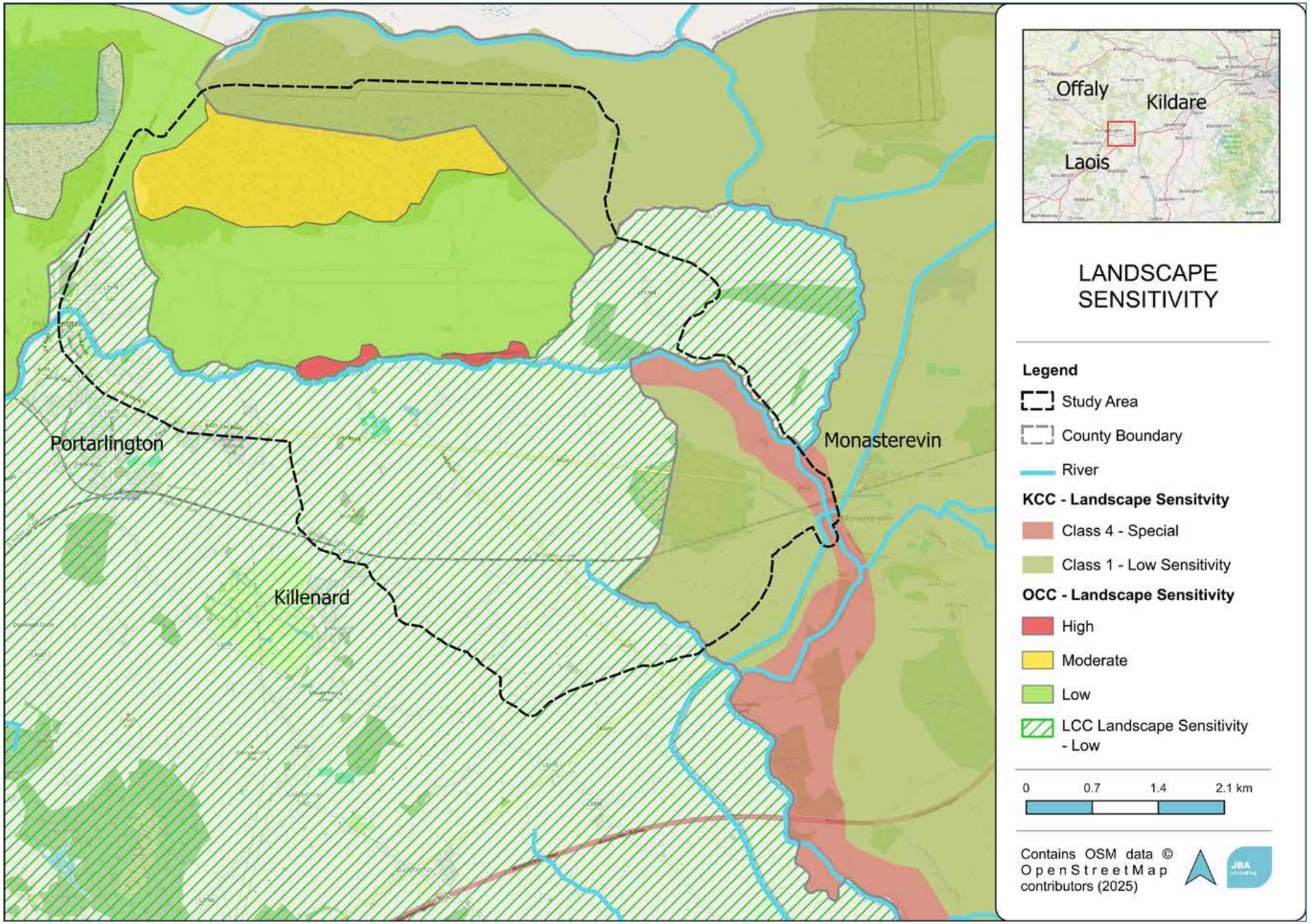


Figure 4-2 Landscape Sensitivity of the study area

4.1.1 Scenic and Protected Views

Several designated views and scenic routes have been identified within the study area boundary and immediate environs. These are located particularly along water corridors and to and from many built and archaeological features. Scenic routes and protected views consist of important and valued views and prospects within each county. Existing designated views and scenic routes are shown in Figure 4-3 below.

Protected views from existing built features, as identified in the KCDP, include the views of the River Barrow from the following three bridges:

- RB6 – Pass Bridge
- RB8 – Baylough Bridge
- RB10 – Monasterevin Bridge

Additionally, the KCDP includes the following protected views of the Grand Canal, located within the vicinity of the study area:

- GC1 – Macartney's Bridge
- GC28 – High Bridge
- GC35 – Clogheen Bridge

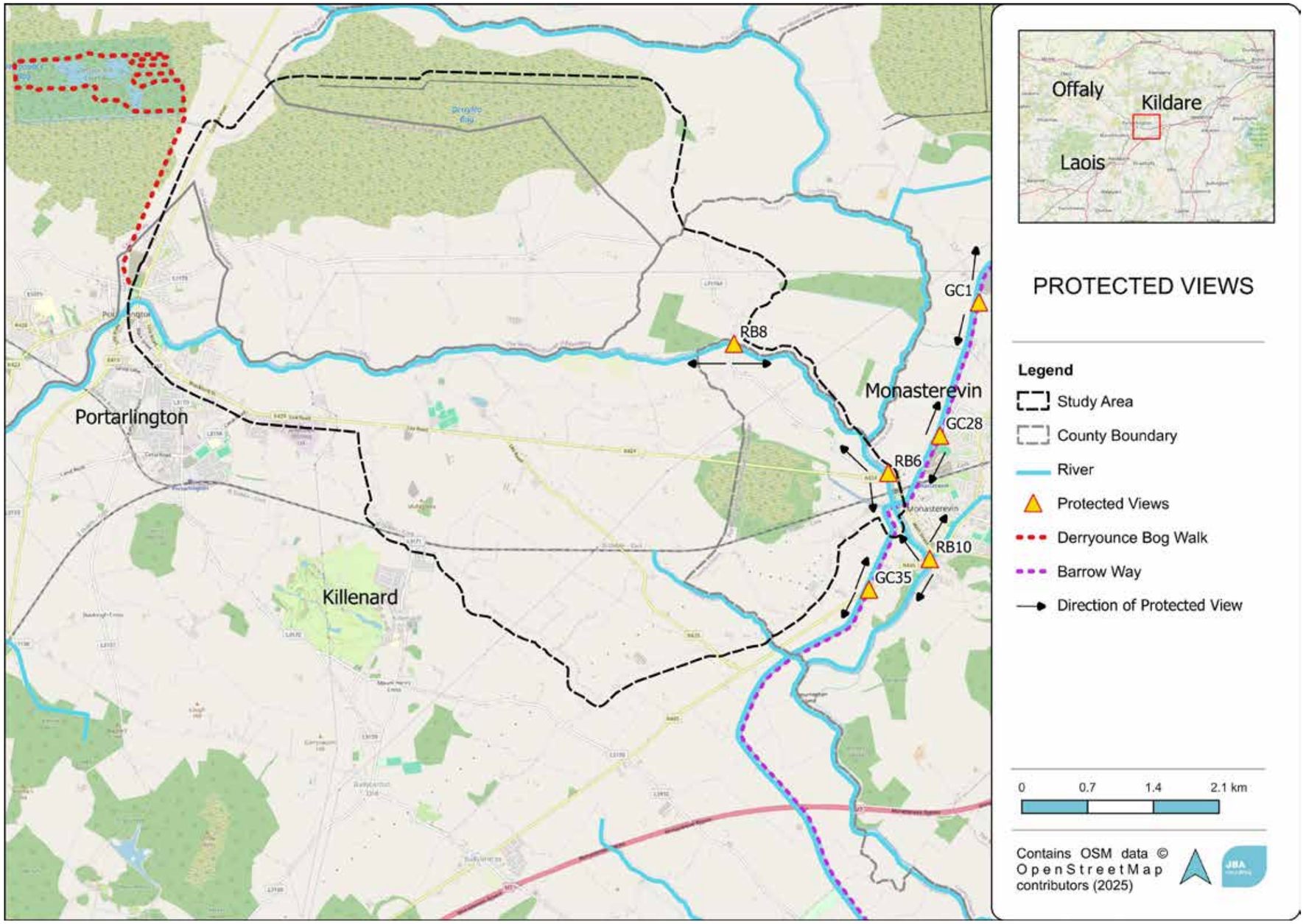


Figure 4-3 Scenic Views within the study area

In addition to the protected views above, it is also an objective of Kildare County Council, as described in the Monasterevin LAP, "to protect key views and prospects particularly to and from the River Barrow, Grand Canal and from approach roads into the historic town centre".

There are no protected views or scenic routes within Laois or Offaly within the study area. The nearest protected view is in Laois, located southeast of Killenard, along the R445 at the Heath townlands, is facing away from the study area.

The National Trail Register, as recognised by Sport Ireland, identifies two trails within the study area. The Derryounce Bog Walk begins north of Portarlington and travels up towards Derryounce before looping back. The Barrow Way extends from Lowtown, Co. Kildare to St. Mullins, Co. Carlow and follows the towpath of the river, extending for 114km.

It is the policy of Kildare County Council to "protect and enhance the county's landscape, by ensuring that development retains, protects and, where necessary, enhances the appearance and character of the existing local landscape".

It is the policy of Laois County Council to "protect rural amenities, natural archaeological and natural heritage, visual amenities, eco-systems, conservation areas, landscape and scenic views from adverse impacts of agricultural practices and development particularly in high amenity areas and ensure that it is appropriate in nature and scale, and ensure it does not have an undue negative impact on the visual/scenic amenity of the

countryside and identify mitigating measures where required".

It is an objective of Offaly County Council to "protect Key Scenic Views and Key Prospects from inappropriate development".

4.1.2 High Amenity

There are also certain special landscape areas within each council defined as High Amenity. The River Barrow valley is of significance in terms of landscape and amenity value and as such is sensitive to development. The River Barrow is also a designated Special Area of Conservation (SAC). The river valley is characterised by smooth terrain and low vegetation, with extensive upland views. The topography is such that it allows vistas over long distances without disruption along the river corridor. However, undulating topography and existing shelter vegetation along some stretches of the valley provides physical shielding and the potential to enclose the built form within the river valley. This is further enhanced by the presence of natural and native woodland that grows on the floodplains of the river, as well as by conifer plantation in adjacent lands.

The Grand Canal Corridor is also listed as a High Amenity area recognised for its smooth terrain, gentle landform, and low canal bank grassland, which allows for uninterrupted long-distance vistas. Consequently, development can have a significant visual impact, challenging the existing topography's ability to absorb it. Natural vegetation and plantations adjacent to the canals provide visual barriers, offering shielding qualities. The Grand Canal is also a proposed Natural Heritage Area (pNHA).

It is the policy of Kildare County Council to *"protect High Amenity areas from inappropriate development and reinforce their character, distinctiveness and sense of place".*

It is an objective of Offaly County Council to "ensure that new development, whether individually or cumulatively, does not impinge in any significant way on the character, integrity and distinctiveness of or the scenic value of the Areas of High Amenity".

4.2 Trees, Woodlands and Hedgerows

Trees, woodlands and hedgerows make a valuable contribution to the landscape and visual amenity of County Kildare, Laois and Offaly, and provide wider environmental benefits that include carbon storage, habitats for wildlife, biodiversity protection and enhancement, as well as producing oxygen, absorbing pollutants and providing food sources.

A total of 57 no. champion and heritage trees have been identified in County Kildare in the Tree Register of Ireland (source: treeregister.ie). There is one within the study area, the Yew (*Taxus baccata*) on Monasterevin Main Street. The immediate environs also include another Yew at Moore Abbey. These trees were selected due to their habitat value within historical landscapes. There are no Tree Preservation Orders within the study area.

There are no champion or heritage trees in Co. Laois or Co. Offaly that are located within the study are or immediate environs.

It is the policy of each county council to protect existing woodlands, trees and hedgerows, which are of amenity and biodiversity value.

4.3 Riparian Zones

Riparian zones are vegetated areas bordering rivers and other bodies of surface water. These are specifically important due to the rich habitat provision along water bodies, which enable wildlife corridors to establish, facilitating species movements from place to place. The landscape of riparian corridors can vary between flood plains to steep embankments, while functioning as buffer zones that protect / improve the water quality in associated watercourses. The natural presence and the protection of existing riparian vegetation plays an important role in the successful establishment and flow of the existing watercourses.

Riparian zones are particularly vulnerable to damage from inappropriate development. A key requirement of an integrated watercourse protection strategy is the set aside of sufficient land along the river margin or corridor, as shown in Figure 4-4. The buffer zone, if sufficiently large and managed will:

- *"Filter out pollutants and sediments from overland surface run off;*
- *Provide bank stabilisation which can assist in preventing fluvial erosion;*
- *Provide a refuge for animals with close affinity to rivers;*
- *Create habitat necessary for aquatic life;*
- *Provide amenity and recreation to local people and visitors to the area;*
- *Enhance flood alleviation".* (KCDP, 2023-2029)

Where developments are proposed adjacent to waterways, on private or publicly owned land, the Planning Authority will require a setback distance of "*an absolute minimum of 10m from the water's edge, however, the actual set-back will be determined by the scale and importance of the River, with*

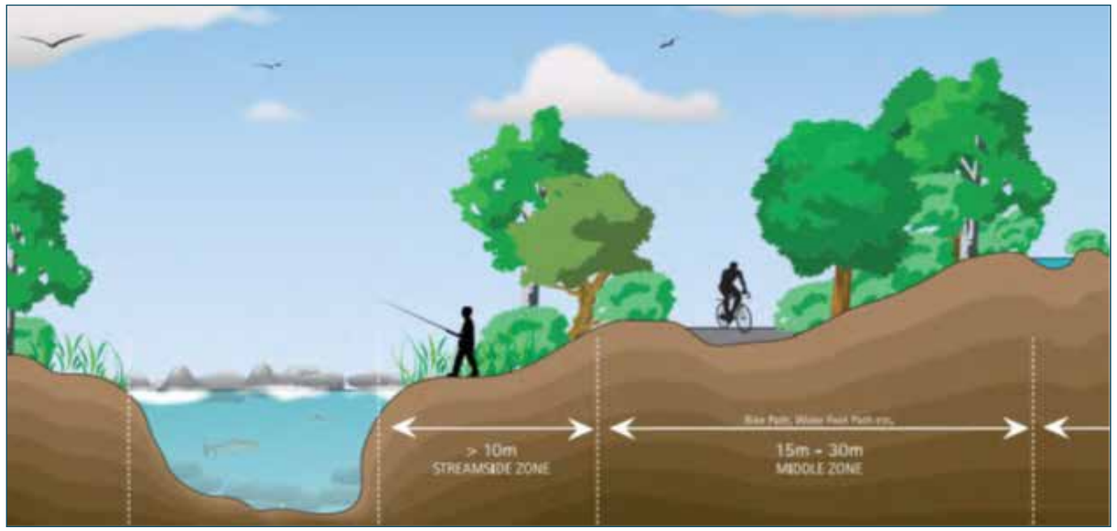


Figure 4-4 Riparian Buffer zones (Source: Planning for Watercourses in the Urban Environment, IFI, 2020

up to 100m or more being required along the larger and more important rivers such as the Liffey (except on town centre/regeneration sites where there is a history of development or where there is a key public infrastructure required for public benefit)." (KCDP, 2023-2029)

Figure 4-4 above shows the guidelines for a riparian zone within a natural river embankment. Although the objective of vegetation and habitat retention and protection has been applicable to riparian zones for all watercourses, the distances for embankment stabilisation and protection would be adjusted for built canals.

Where developments are proposed adjacent to waterways, on private or publicly owned land, the Planning Authority will require a setback distance of *"an absolute minimum of 10m from the water's edge, however, the actual set-back has been determined by the scale and importance of the River, with up to 100m or more being required along the larger and more important rivers such as the Liffey (except on town centre/regeneration sites where there is a history of development or where there is a key public infrastructure required for public benefit)"* (KCDP, 2023-2029).

Riparian Zones are defined in Planning for Watercourses in the Urban Environment (IFI, 2020) as

having three zones. These zones have distinct characteristics and can facilitate different uses. The buffer zone is dependent on the nature and design of the development, with development only occurring within 48m from the water's edge.

It is imperative that the **streamline zone** (<10m) is protected with very restricted use except for fishing or waking trails, if properly installed. This area should comprise native riparian vegetation in order to ensure the physical and ecological integrity of the stream ecosystem is maintained.

The **middle zone** provides distance between upland development and streamside zone and acts and a filter for nutrients and sediment and should be kept within a 15 to 30m width. The vegetation in this section can include managed woodland with some clearing/open space allowed. Native species should be a priority, although appropriate non-native broadleaved and evergreen vegetation can be considered, such as in areas where historical ornamental planting exists. The use of new non-native species should be assessed on a case by case basis, to ensure the appropriate planting is selected. Uses in the middle zone are restricted, but some recreational routes such as cycle tracks or footpaths which can also function as a flood zone.

The **outer zone**, with a minimum of 8m width, is aimed to prevent encroachment of developments and filter hard surface runoff. Woodland planting is encouraged but turfgrass is usually utilised. Native planting has been required, in the interest of climate action and the All-Ireland Pollinator recommendations. Uses in this location are unrestricted, and can accommodate residential uses, including lawn and swales. Stormwater treatments will usually occur in the outer zone.

In general, the width of the riparian/buffer zone will depend on factors such as existing land use, land topography, soil type, channel width/gradient and critical habitats to be protected. The buffer zone should be large enough to protect the ecological integrity of the river, including vegetation, and the riparian zone, bankside vegetation including trees, and the historical use of the area.

The Kildare County Council recognises that *"key public infrastructures may be permitted within the riparian zone where there are no alternatives available or where it enhances the public and civic amenity or tourist potential of a site"* (KCDP, 2023-2029). The appropriate zoning and identification of allowable uses within potential sensitive sites should be assessed by a multi-disciplinary team, including ecologists and flood risk experts, in advance of any development. This is to ensure the sensitive landscapes are protected in full and new infrastructures, including walking trails, are proposed in the appropriate setting.

The study area comprises one main watercourse, the River Barrow, which traverses the landscape between Portarlington and Monasterevin. The Grand Canal Barrow Line runs adjacent to the eastern boundary of the study area, through Monasterevin. While the Grand Canal is largely located outside of the study area, apart from one section, it still influences the local landscape and amenity provision.

The River Barrow extent varies in use and thus comprises different riparian widths. Where the landscape is agricultural, field boundaries made of native hedgerow and tree lines also form part of the vegetated riparian strip along the River Barrow. Urbanised areas such as Portarlington and Monasterevin include a narrower green corridor across the river border. Residential estates include an open space allowance between river and buildings, with different levels and sizes of vegetation provided. Portarlington's People's Park includes a multi-use amenity along a portion of the river. This comprises play and exercise spaces, footpaths and seating. Similarly, the Riverside Park in Monasterevin utilises the River Barrow to create a recreational space which offers open spaces and seating, with Monasterevin Community Playground located across the road.

It is the policy of Kildare County Council to *"recognise and promote inland waters, natural environmental assets and to protect rivers, streams and other watercourses and, wherever possible, maintain them in an open state capable of providing suitable habitats for fauna and flora while discouraging culverting or realignment."*

It is the policy of Laois County Council to *"protect riparian corridors by reserving land along their banks for ecological corridors and maintain them free from inappropriate development"*. When developments are proposed near waterways in previously undeveloped areas, the Planning Authority will mandate a minimum setback distance of 10 metres from the waterway's edge, considering site-specific characteristics and the development's nature and design. In previously developed areas, this setback distance may be reduced and should be discussed during pre-planning consultations with the Council.

It is the policy of Offaly County Council to *"preserve riparian buffer strips free from development by reserving a minimum of 10 metres either side of all watercourses (measured from top of bank) with the full extent of the protection determined on a case by case basis by the Council, based on site specific characteristics and sensitivities".*

4.4 Green Infrastructure (GI)

4.4.1 GI General

Green infrastructure refers to the network of linked high quality green spaces and other environmental features within an urban setting. This strategically planned and delivered network should be designed and managed as a multifunctional resource, able to provide a wide range of environmental and quality of life uses for local communities. This comprises, but not limited to, climate change adaptation, recreation, waste and water management, food production and health benefits, biodiversity corridors and economic benefits.

The National Planning Framework (NPF) requires that policies *"identify and strengthen the value of greenbelts and green spaces at regional and city scale, to enable enhanced connectivity to wider strategic networks, prevent coalescence of settlement and to allow for the long-term strategic expansion of urban areas".*

The benefits of Green Infrastructure include the following, according to KCDP 2023-2029:

- Attracting businesses and inward investment by creating an attractive environment;
- Access nature, outdoor recreation and for social interaction;
- Space for nature and wildlife to flourish;
- Recreational, tourism and cultural roles;
- Climate change adaptation - for example flood alleviation and cooling urban heat islands,
- Forestry, crop production, agriculture and energy development;
- Local food production - in allotments, gardens and through agriculture;
- Provides green buffers /green wedges between built up areas;
- Improves air quality;
- Environmental education
- Improves health and well-being;
- Creating a sense of place and local distinctiveness
- Encouraging physical activity and improved health and well-being by providing quality green spaces for walking and cycling and other physical activity.

It is the policy of the Council to "i*dentify the key elements of the green infrastructure network in Kildare; and seek to protect, enhance, and expand the County's green infrastructure network, through informed, evidence-based methods, which do not threaten the integrity of existing native biodiversity*" and to "*recognise the importance of Green Infrastructure in Kildare and protect this valued biological resource, the ecosystem services it provides and the contribution to climate resilience*".

It is also an objective of the Council to "*encourage the provision, improvement and expansion of more*

varied social, cultural, recreational and sporting facilities to serve the needs of the town."

It is the policy of Laois County Council to *"ensure that areas and networks of Green Infrastructure are identified, protected, enhanced, managed and created to provide a wide range of environmental, social and economic benefits to communities".*

The LCDP also includes the objective to *"promote a network of paths and cycle tracks to enhance accessibility to the Green Infrastructure network, while ensuring that the design and operation of the routes respect and where possible enhances the ecological potential of each site".*

It is the policy of Offaly County Council to *"protect existing green infrastructure within the county, to provide additional green infrastructure where possible and to encourage green infrastructure to be spatially connected to facilitate the extension or establishment of ecological corridors".* Additionally, it is County policy to *"integrate the provision of green infrastructure with infrastructure provision and replacement, including walking and cycling routes, as appropriate, while protecting natural heritage"*.

4.4.2 Kildare GI Strategy

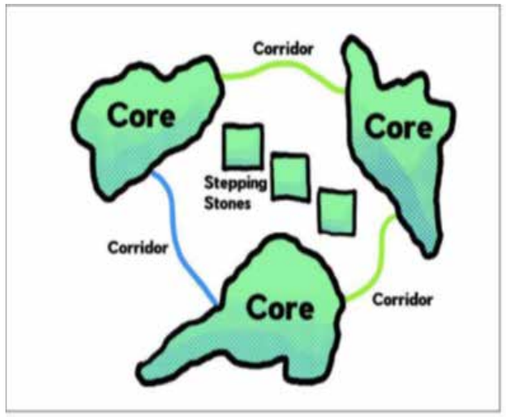
The GI can be described in three key elements. Core or hub areas work as anchors within a GI network. They are large geographical areas that function as the point of origin and destination for wildlife and are sites at which essential ecological processes occur. Corridors symbolise the physical links that join the network together. They can include linear open spaces, watercourses and hedgerows and allow for the migration of species between core habitats. Stepping-stones are smaller areas of public and private open space. They offer complementary routes for the movement of species within the whole network and contribute to local biodiversity.

The study area comprises extensive stretches of hedgerows as well as the riparian vegetation along the Barrow, who act as corridors for wildlife. Derryounce and Derrylee bogs would act as the largest core areas along with the bog in Coolnaferagh. Smaller wooded and overgrown areas are scattered along the entirety of the study area.

The GI can be further enhanced by catering to additional active travel infrastructure such as footpaths and cycle lanes which would benefit the human connection with nature and improve health and wellbeing. An example of this will be connecting the GI of the study area to the wider context, including the Barrow Canal blueway and Derryounce Bog Oak Walk.

4.4.3 Urban & Public Open Spaces Green Infrastructure

Urban Green Infrastructure inclu des residential gardens, the parkland settings of enterprise parks and employment areas, street verges, open spaces and parks, woodlands, hedgerows, cemeteries and allotments. These areas, in combination with the local network of sports and recreational facilities, collectively contribute to strengthened Green Infrastructure network and the living environment in the county.



These areas cater to habitats for ecological processes, for active and passive recreation, promote community interaction and facilitate mitigation of the impacts of climate change.

The western and eastern ends of the study area are generally urban, encompassing the towns of Portarlington and Monasterevin, which benefit from the inclusion of urban green infrastructure elements such as street trees and verges, which connect to other landscape features such as hedgerows and habitats at the existing river, canal and farmland.

One of the LCDP's climate adaptation objectives is to introduce drought-resistant trees and plants in public amenity areas, providing shade and enhancing green infrastructure connectivity. Additionally, the LCDP outlines how the development of green infrastructure should be encouraged and facilitated to maximise benefits in the provision of open space amenities, sustainable water management, biodiversity protection and management, cultural heritage preservation, and safeguarding landscape sensitivities.

Similarly, the OCDP incorporates eco-friendly and pollinator-supportive infrastructure, including green open spaces, green roofs and walls, and an abundance of trees, as part of their development principles.

It is the policy of Kildare County Council to *"recognise the importance of Urban Green Infrastructure in addressing a broad range of urban challenges, such as connecting people with nature, adapting to climate change, supporting the green economy and improving social cohesion and to seek to protect and enhance this resource, particularly existing semi-natural areas, or habitats (such as hedgerows, canals, rivers, ponds)"*. To implement this, KCC will strengthen ecological networks between urban areas, creating robust connections to Natura 2000 sites, proposed Natural Heritage Areas, parks, open spaces, and the broader regional GI network. Additionally, all new developments has been required to include multi-functional open spaces that support both ecology and sustainable water management.

4.4.4 Sustainable Urban Drainage Systems and Green Infrastructure

Sustainable Urban Drainage Systems (SuDS) seek to collect, store and release surface water back to the environment using natural systems in a slow and controlled way, thus reducing the risk of fluvial and pluvial flooding. SuDS represents a change in drainage by getting water to be infiltrated or conveyed more slowly to water courses via constructed wetlands, permeable surfaces, filter strips, ponds, swales and basins, all of which contribute to more environmentally friendly and aesthetically pleasing approaches of controlling surface water.

Nature based solutions such as SuDS include flood risk management benefits, but will also improve water quality, protect biodiversity and provide to climate adaptation and mitigation. The role of green infrastructure in nature-based solutions includes the urban greening into designs, planning and construction of roads, community, and public realm s, and as a mechanism to promote biodiversity, reduce habitat fragmentation, and for carbon sequestration.

The recently adopted Kildare County Council Sustainable Drainage Systems Guidance Document will be utilised in this Study.

It is the policy of the Council to "*promote and support the development of Sustainable Urban Drainage Systems (SuDS) to ensure surface water is drained in an environmentally friendly way by replicating natural systems*".

It is an objective of Laois County Council to "*require the use of SuDS in accordance with the Greater Dublin Regional Code of Practice for Drainage Works for new developments (including extensions)".*

It is the policy of Offaly County Council to *"minimise and limit the extent of hard surfacing and paving and require the use of sustainable urban drainage systems (SuDs) where appropriate, for new developments or for extensions to existing developments, in order to reduce the potential impact of existing and predicted flooding risks".*

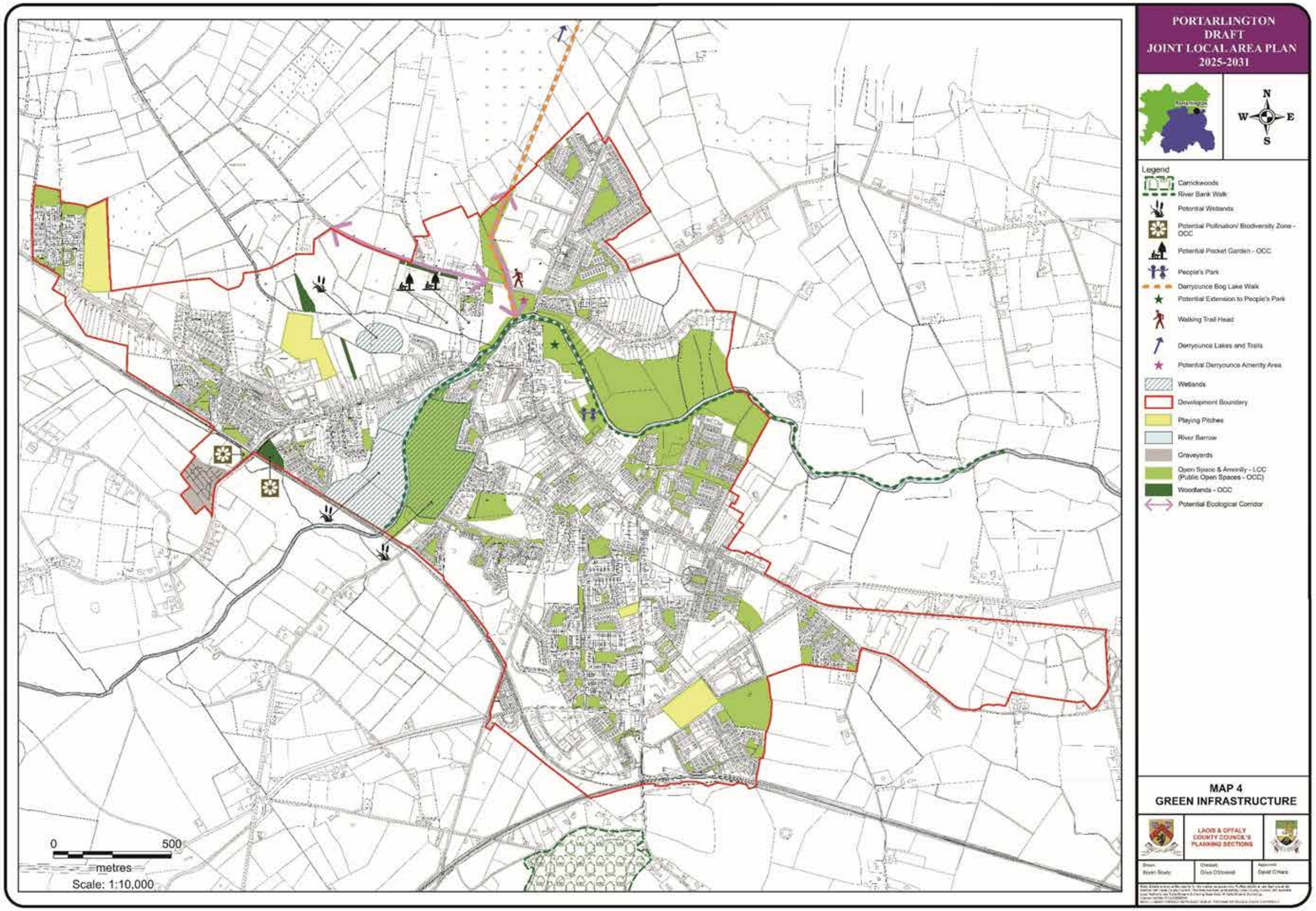


Figure 4-5 Green infrastructure within Portarlington (Draft Portarlington Joint Local Area Plan 2025-2031)

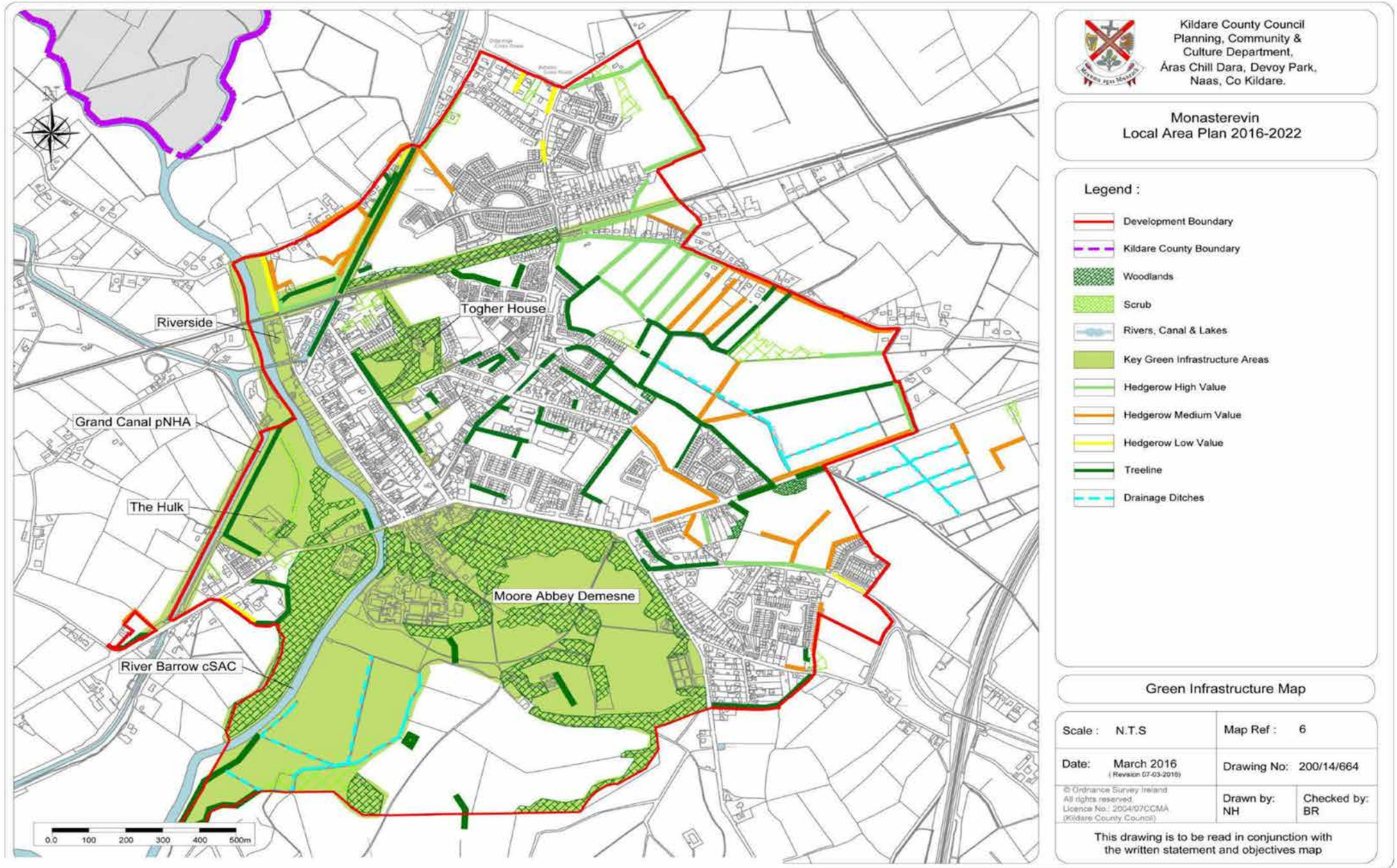


Figure 4-6 Green infrastructure within Monasterevin (Monasterevin Local Area Plan 2016-2022)

4.4.5 Transport Strategy

The transport strategies included in the Local Area Plans and County Development Plans seeks to provide active travel routes and road/path improvement works. The provision of universally accessible paths and bicycle lanes caters to the facilitated circulation and well-being of the user. The opportunity to connect the towns of Monasterevin, Portarlington and Killenard will enhance the already rich green infrastructure of the study area.

It is the policy of Kildare County Council to to "facilitate and encourage walking and cycling as a more convenient, popular and safe method of transport, through the provision of pedestrian and cycle facilities linking population, commercial, community, tourism, recreation and transport areas".

It is an objective of Laois and Offaly County Council to "promote a network of paths and cycle tracks to enhance accessibility to the Green Infrastructure network, while ensuring that the design and operation of the routes respond to the ecological protection needs of each site".

4.5 Existing Sites

The study area is comprised of predominantly rural land use, with urban land use being found in the eastern and western sections, within the towns of Monasterevin and Portarlington. The River Barrow flows in an easterly direction, traversing the whole study area. It is framed by agricultural fields in the majority of the landscape in the study area. Monasterevin and Newbridge include parks which back on to the river. These parks create a scenic aesthetics while also providing an opportunity to improved the well being to the community.

4.6 Summary

The study area is split between low and special sensitivity, with the latter being focused on the River Barrow Corridor. The existing green infrastructure is rich due to the riparian corridors within the River Barrow and Grand Canal.

The CDP and LAP objectives for the provision of a sustainable travel network will complement the GI and subsequently provide a rich cycle infrastructure within and between Portarlington and Monasterevin. Additionally, areas zoned for open space will also benefit the GI. A dense Green Infrastructure will comprise a rich network of ecological corridors and open space, as well as the provision of sustainable travel routes and recreational amenity. A successful GI will cater to the needs of habitats and nature while also providing recreational and sustainable travel options for the community.

Existing bridges within the study area coincide with the location of protected views, due to their scenic quality towards the river, canal and riparian vegetation.

The provision of a Greenway between Portarlington and Monasterevin will need to take into consideration KCC, OCC, LCC and national policies and objectives on riparian zones, scenic views, open space, SuDS and green infrastructure.

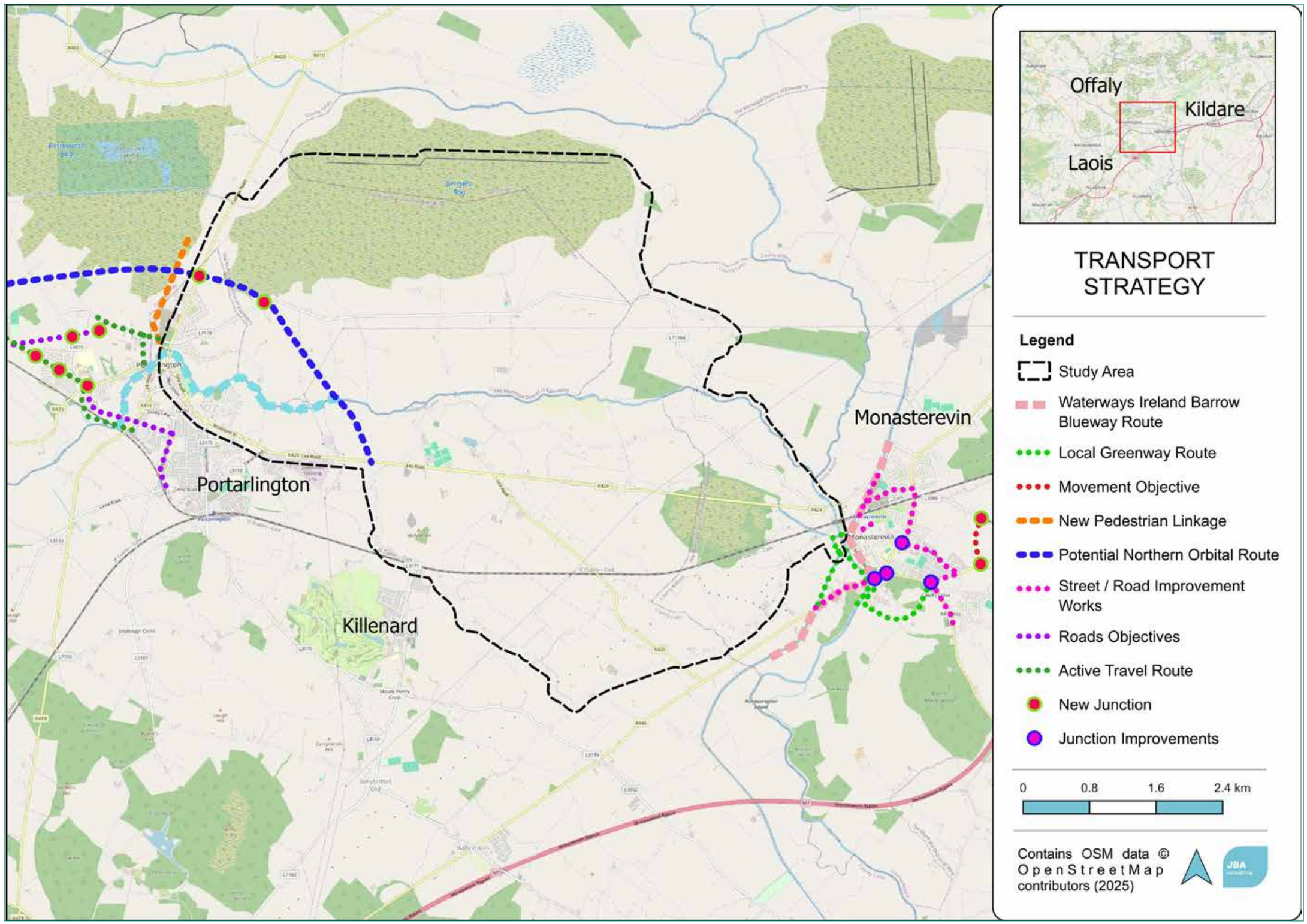


Figure 4-7 Transport Strategy

5.0 BIODIVERSITY

5.1 Methodology

In order to inform the ecological baseline, the following assessments were carried out in line with current best practice guidance (CIEEM, 2018):

- A desk-based assessment to identify any records of protected and/or priority habitats and species, and designated nature conservation sites in the vicinity of the proposed site.
- Ecological walkover surveys to record the presence of any rare / protected flora and fauna, as well as invasive non-native species (INNS).

5.1.1 Ecological baseline

To determine the ecological baseline conditions at the site a review of all available information was made. When determining the conditions on the proposed site, including the presence or absence of protected habitats and/or species, the precautionary principle was used where limited information was available. This review included the following:

- A desk-based assessment was carried out to collate information regarding protected/notable species and statutorily designated nature conservation sites in, or within close proximity to, the study area;
- A data search for protected and notable species was conducted using the National Biodiversity Data Centre (NBDC) Mapping System (NBDC, 2025) for the study area within the last 15 years. Invasive Non-native Species were also included;
- Information for statutory designated sites including Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Ramsar Sites, National Heritage Areas (NHAs) and proposed NHAs (pNHAs) was collected from the online resources provided by the National Parks and Wildlife Service (NPWS).

In addition, the following existing reports and data sources were also used to inform this baseline study:

- Freehan, J. & Hamond, F., 2006. An Ecological and Industrial Heritage Survey of the Mountmellick Canal. The Heritage Council / Laois County Council;
- Scott Cawley, 2014. Bat Survey Report – Lea Castle, Co. Laois. Lea Castle Conservation Group; and
- MacGowan, F., 2014. Ecological Report for the area around Lea Castle, Portarlington, Co. Laois. Arts & Heritage Group of Portarlington Community Development Association.

Other information on the local area was obtained, including information from the following sources:

- NPWS (2019a). The Status of EU Protected Habitats and Species in Ireland. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland;
- NPWS (2019b). The Status of EU Protected Habitats and Species in Ireland. Habitats Assessment Volume 2. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland;
- NPWS (2019c). The Status of EU Protected Habitats and Species in Ireland. Species Assessment Volume 3. Habitats Assessment Volume 2. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland Environmental Protection Agency online databases on water quality (Available online at https://gis.epa.ie/EPAMaps/);
- Aerial photography available from www.osi.ie and Google Maps http://maps.google.com/;
- All Ireland Red Data lists for vascular flora (NPWS, 2016), mammals (NPWS, 2019a), butterflies (NPWS, 2010), various invertebrate classes (NPWS, 2011a), amphibians (NPWS, 2011b) and fish (NPWS, 2011b);
- Water Framework Directive water maps (available online at http://www.wfdireland.ie/maps.html and https://www.catchments.ie);
- IFI Open Data Portal - Water Framework Directive Rivers Fish Ecological Status 2008-2022 (https://opendata-ifigeo.hub.arcgis.com/datasets);
- International Union for Conservation of Nature and Natural Resources (IUCN) Red List of Threatened Species;
- Irish Birding (https://www.irishbirding.com/birds/web).

5.1.2 WFD Objectives

The River Basin Management Plan (2022-2027) has been adopted by all local authorities in order to achieve the aims of the WFD (DHLGH, 2022). The Plan sets out the new approach that Ireland will take to enhance protection, prevention, and monitoring of Irish waterbodies. The main actions include:

- Improve wastewater treatment;
- Conservation of leakage reduction;
- Scientific assessment of waterbodies and implementation of local measures;
- A new collaborative Sustainability and Advisory Support Programme;
- Dairy Sustainability Initiative;
- Development of water and planning guidance for local authorities;
- Extension of Domestic Waste Water Treatment Systems grant schemes;
- A new Community Water Development Fund;

Regardless of their current quality, surface water should be treated the same in terms of the level of protection and mitigation measures employed, i.e., there should be no negative change in status.

5.1.3 Field Surveys

Two ecological walkover surveys were undertaken between Spring and Summer 2025 (28/03/2025 and 16/05/2025). These surveys conducted by JBA Ecologists (William Mulville, Michael Coyle, Matt Hosking, and Jai Dolan) recorded the presence of any rare / protected flora and fauna, as well as invasive species. The survey methods were in general accordance with those outlined in the following documents:

- Best Practice Guidance for Habitat Survey and Mapping. The Heritage Council. (Smith et al., 2011).
- Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (NRA, 2008).

5.1.4 Zone of Influence

The Zone of Influence (ZoI) for the study area is based on a judgement of the likely extent of the potential ecological impacts on key ecological receptors, which in turn highlights the likely constraints and overall feasibility of future projects within the study area. This will vary for different ecological features, depending on their sensitivities to environmental change.

The constraints assessment for the study area uses the source-pathway-receptor (S-P-R) model as outlined in guidance (OPR, 2021). Using the source-pathway-receptor model allows for the potential significant effects to be eliminated if no viable source, pathway, or receptor is present.

The S-P-R method uses an examination of the potential future construction methods or proposed projects within to allow sources of impact to be determined. This also allows a ZoI for the study area to be generated based on the potential size, scale and nature of future works. The pathways for impact are also analysed to see if a functional pathway for impact is present. This methodology allows one to assess the potential presence of surface water, groundwater, land and air impact pathways between the study area and ecologically designated sites and other areas known to support protected species within the ZoI. If any of the three parts to the model are not present (source-pathway-receptor) the potential for negative impacts from the future developments or works within the study on the local designated sites and valued ecologically areas can factor into the overall feasibility of such projects or works.

5.1.4 Limitations and Assumptions

This report is based on two site visits and existing data from the above-mentioned sources. The report relies on some assumptions and is subject to some limitations. These do not affect the conclusion, but the following points are recorded in order to ensure the basis of the assessment is clear:

- The walkover surveys were carried out for targeted areas within the study area. Field data from outside these survey areas within study area (e.g., bog habitat present to the south of the R424) is limited and was not the subject of the walkover survey. Available desktop data compliments the survey data, and the gathered data is considered to be sufficient to carry out the assessment;
- The site visits were carried out during the 2025 spring and early summer period and the data does not reflect the whole ecology of the site throughout the year. The precautionary principle is used at all times when determining potential ecological sensitivity of the site.

5.2 Existing Environment

5.2.1 Designated Sites

The ZoI for this project is set by S-P-R model methodology, which assess the potential presence of surface water, groundwater, land and air impact pathways between the proposed site of development or works and ecologically designated sites and other areas known to support protected species within the ZoI. Only one Natura 2000 site was recorded within the ZoI, River Barrow and River Nore SAC. Details of this site and distance are listed in Table 5-1 and mapped in Figure 5-1 in relation to the proposed study area site.

Connections are assessed for impacts relating to noise disturbance (400m), air pollution (emissions and dust) (250m), and any supporting habitat for SAC/SPA species beyond these distances that may have Qualifying Interest (QI) / Special Conservation Interest (SCI) species that utilise the site. The ZoI for air pollution was considered as per the Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024), including ex-situ habitats used by QI species associated with local Natura 2000 sites.

The S-P-R model was also used to examine the potential presence of non-statutory sites, i.e., proposed and existing Natural Heritage Areas (pNHAs and NHAs). One pNHA was identified within ZoI, Grand Canal pNHA. in relation to the proposed study area site. The QIs and ecological features of the Natura 2000 and pNHA sites are listed in Table 5-2 and Table 5-3 respectively.

Table 5-1 Natura 2000 and pNHA sites within ZoI of the study area

Site Name	Site Code	Direct Distance from Site	Hydrological Connection
River Barrow and River Nore SAC	002162	Present within the study area	Present within the study area
Grand Canal pNHA	002103	Present within the study area	Present within the study area

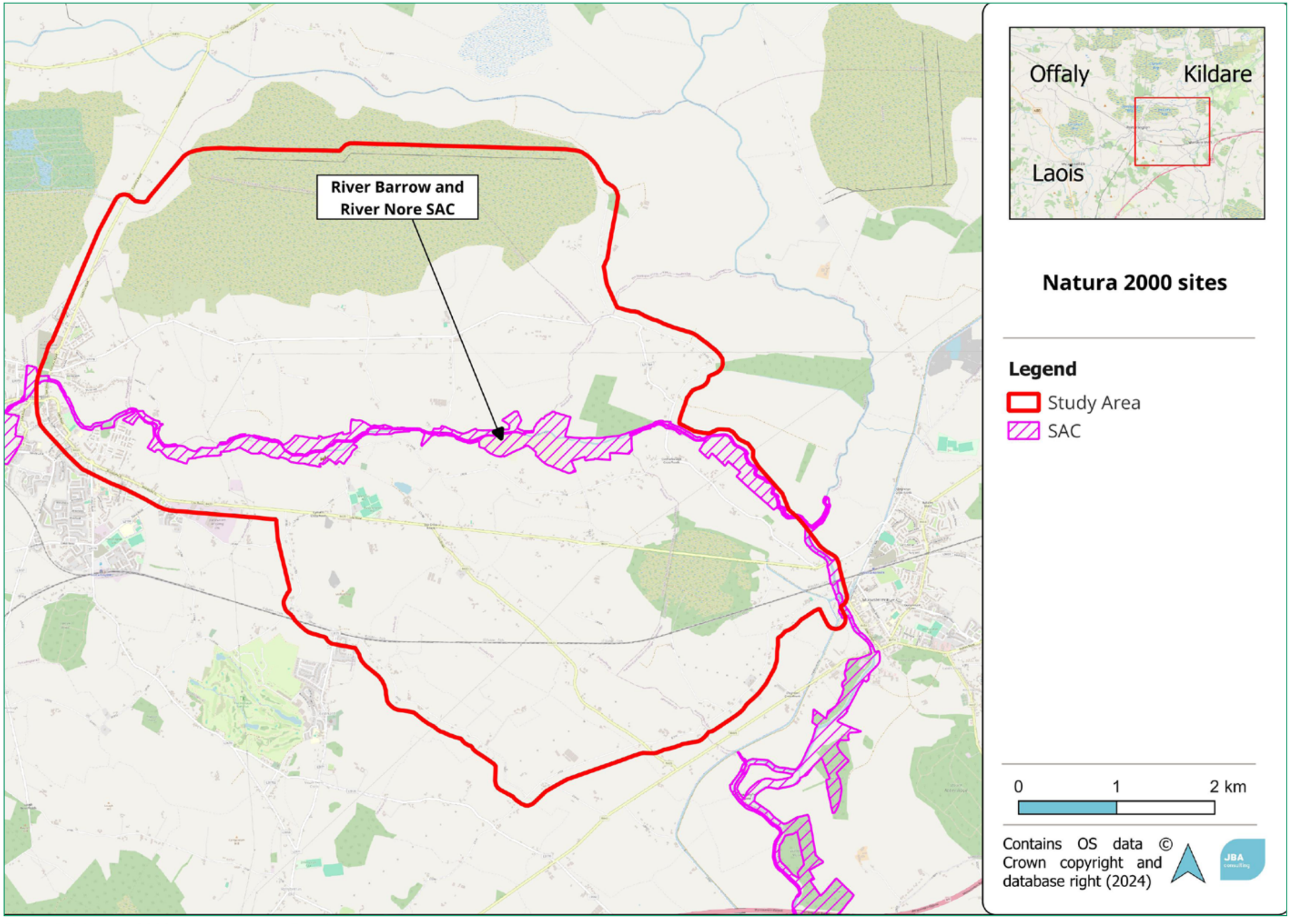


Figure 5-1 Natura 2000 sites within the ZoI of the proposed study area

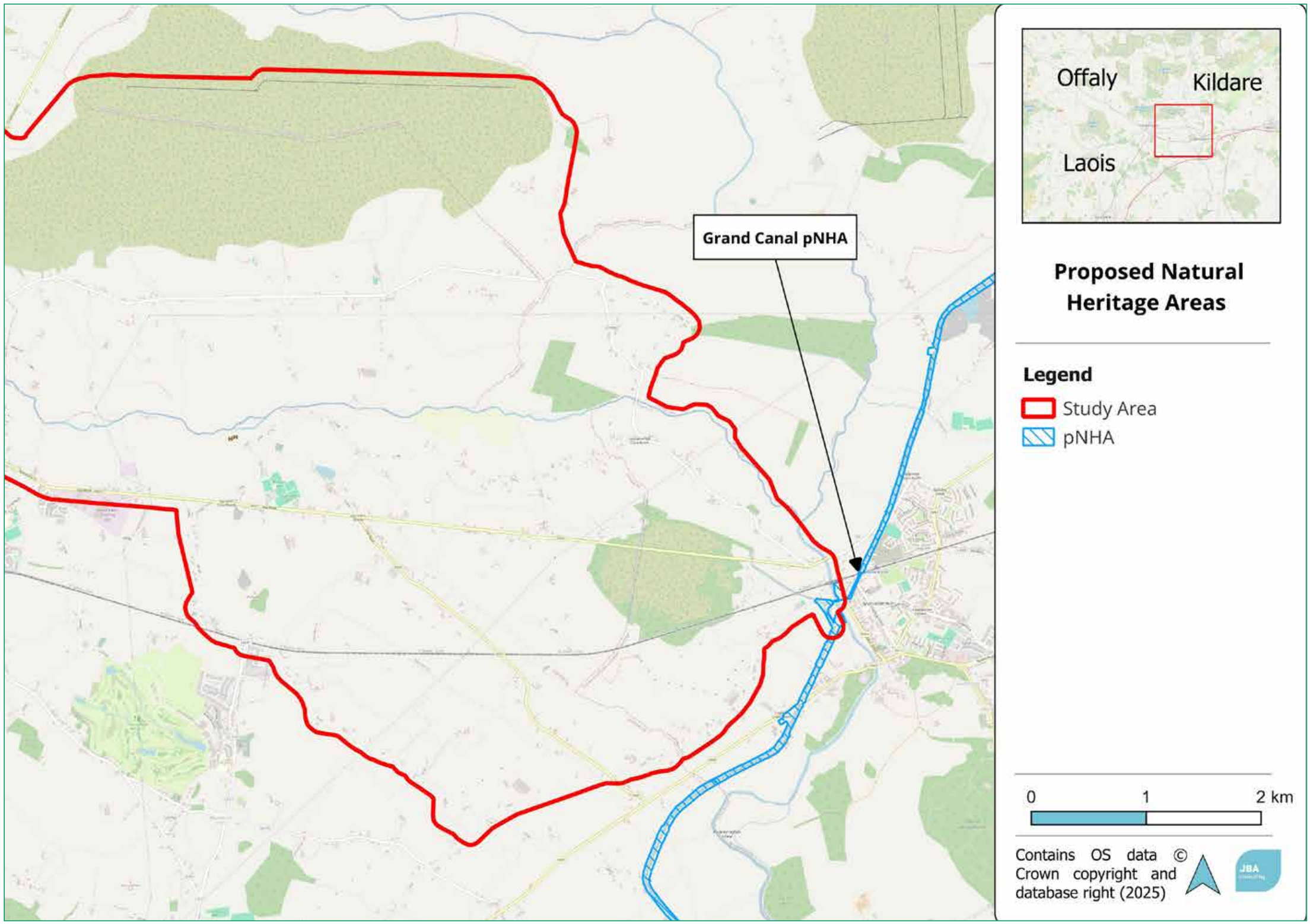


Figure 5-2 pNHAs within the ZoI of the proposed study area

Table 5-2 Site briefs; QIs; and project-relevant threats / pressures and their impacts / sources to the Natura 2000 sites within the ZoI

Site Name	Brief	Qualifying Interests / Ecological Features of Interest	Project-relevant Threats / Pressures: Impact (Source)
River Barrow and River Nore SAC	This site consists of the freshwater stretches of the Barrow and Nore River catchments as far upstream as the Slieve Bloom Mountains, and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford. The site passes through eight counties – Offaly, Kildare, Laois, Carlow, Kilkenny, Tipperary, Wexford and Waterford. Major towns along the edge of the site include Mountmellick, Portarlington, Monasterevin, Stradbally, Athy, Carlow, Leighlinbridge, Graiguenamanagh, New Ross, Inistioge, Thomastown, Callan, Bennettsbridge, Kilkenny and Durrow. The larger of the many tributaries include the Lerr, Fushoge, Mountain, Aughavaud, Owenass, Boherbaun and Stradbally Rivers of the Barrow, and the Delour, Dinin, Erkina, Owveg, Munster, Arrigle and King's Rivers on the Nore. The site is very important for the presence of a number of E.U. Habitats Directive Annex II animal species including Freshwater Pearl Mussel Margaritifera margaritifera, White-clawed Crayfish, Salmon, Twaite Shad, three lamprey species – Sea Lamprey, Brook Lamprey and River Lamprey, the tiny whorl snail Vertigo moulinsiana and Otter. (NPWS, 2024)	Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Reefs [1170] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows Glauco-Puccinellietalia maritimae [1330] Mediterranean salt meadows Juncetalia maritimi [1410] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] European dry heaths [4030] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430] Petrifying springs with tufa formation Cratoneurion [7220] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] Desmoulin's Whorl Snail Vertigo moulinsiana [1016] Freshwater Pearl Mussel Margaritifera margaritifera [1029] Whited-clawed Crayfish Austropotamobius pallipes [1092] Sea Lamprey Petromyzon marinus [1095] Brook Lamprey Lampetra planeri [1096] River Lamprey Lampetra fluviatilis [1099] Twaite Shad Alosa fallax fallax [1103] Salmon Salmo salar [1106] Otter Lutra lutra [1355] Killarney Fern Trichomanes speciosum [1421] (NPWS, 2011)	Dredging / removal of limnic sediment: Moderate (inside) Forest and Plantation management and use: Moderate (both) Fishing and harvesting aquatic resources: Moderate (outside) Pollution to surface waters (limnic, terrestrial, marine & brackish): High (both) Removal of hedges and copses or scrub: Low (inside) Erosion: High (inside) Intensive fish farming, intensification: Low (inside) Human induced changes in hydraulic conditions: Moderate (both) Peat extraction: Moderate (outside) Leisure fishing: Low (inside) Modifying structures of inland water courses: High (inside) Invasive non-native species: Moderate (inside) Changes in abiotic conditions: Moderate (inside) Netting: Low (inside) (EEA, 2020)

Table 5-3 Site Briefs and ecological features of conservation concern of proposed Natural Heritage Areas within the ZoI

Site Name	Brief	Qualifying Interests / Ecological Features of Interest
Grand Canal pNHA	The Grand Canal is a man-made waterway linking the River Liffey at Dublin with the Shannon at Shannon Harbour and the Barrow at Athy. The Grand Canal proposed Natural Heritage Area (pNHA) comprises the canal channel and the banks on either side of it. The canal system is made up of a number of branches - the Main Line from Dublin to the Shannon, the Barrow Line from Lowtown to Athy, the Edenderry Branch, the Naas and Corbally Branch and the Milltown Feeder. The Kilbeggan Branch is dry at present, but it is hoped to restore it in the near future. Water is fed into the summit level of the canal at Lowtown from Pollardstown Fen, itself a pNHA. Otter Lutra lutra spraints are found along the towpath, particularly where the canal passes over a river or stream. The Smooth Newt Lissotriton vulgaris breeds in the ponds on the bank at Gollierstown in Co. Dublin. The rare and legally protected Opposite-leaved Pondweed Groenlandia densa (Flora Protection Order 1987) is present at a number of sites in the eastern section of the Main Line, between Lowtown and Ringsend Basin in Dublin. (NPWS, 2009)	*Opposite-leaved Pondweed Groenlandia densa* *Otter Lutra lutra* *Smooth Newt Lissotriton vulgaris*

5.3 Surface Water Network

The study area is divided across five WFD sub-catchments, namely the Barrow_SC_020, Barrow_SC_030, Barrow_SC_040, Barrow_SC_050, and Barrow_SC_060, within the WFD Barrow catchment. The study area contains a number of notable natural and artificial watercourses / waterbodies, including the Grand Canal Barrow Line and Barrow watercourse. The WFD status and current risk levels of these waterbodies are shown in Table 5-4 below and their locations displayed Figure 5-3 overleaf.

Table 5-4 The WFD waterbodies within the ZoI of the proposed works

WFD Waterbody	WFD Status (2016-2021)	Risk Status
Barrow_070	Poor	At risk
Barrow_080	Poor	At risk
Barrow_090	Poor	At risk
Barrow_100	Moderate	At risk
Barrow_110	Good	Not at risk
Grand Canal Barrow Line (Barrow)	Good	Review
Figile_080	Good	Review

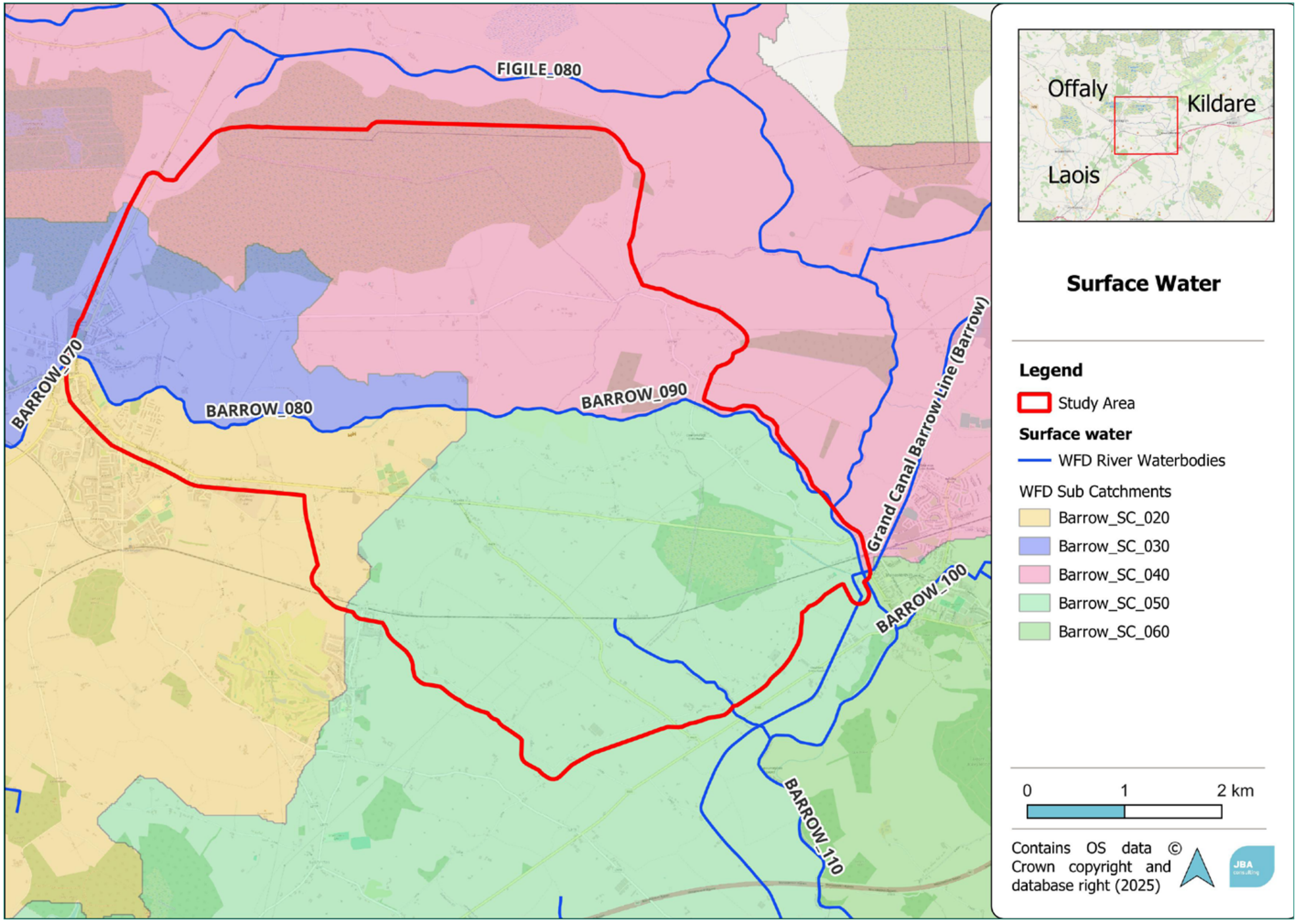


Figure 5-3 The study area's surface water network, including watercourses and sub-catchments (OSM, 2025)

5.4 Groundwater Bodies

The majority of the study area is underlain by the WFD Cushina groundwater body. Additionally, parts of the site are underlain by the Bagenalstown Upper and Industrial Facility (P0274-01) groundwater bodies (Figure 5-4). The Cushina groundwater body has a 'Good' WFD status (2016-2021), while its risk status is 'Not at risk'. The Bagenalstown Upper has 'Good' WFD status (2016-2021), while its risk status is 'Not at risk'. Industrial Facility (P0274-01) has 'Good' WFD status (2016-2021), while its risk status is 'At risk'.

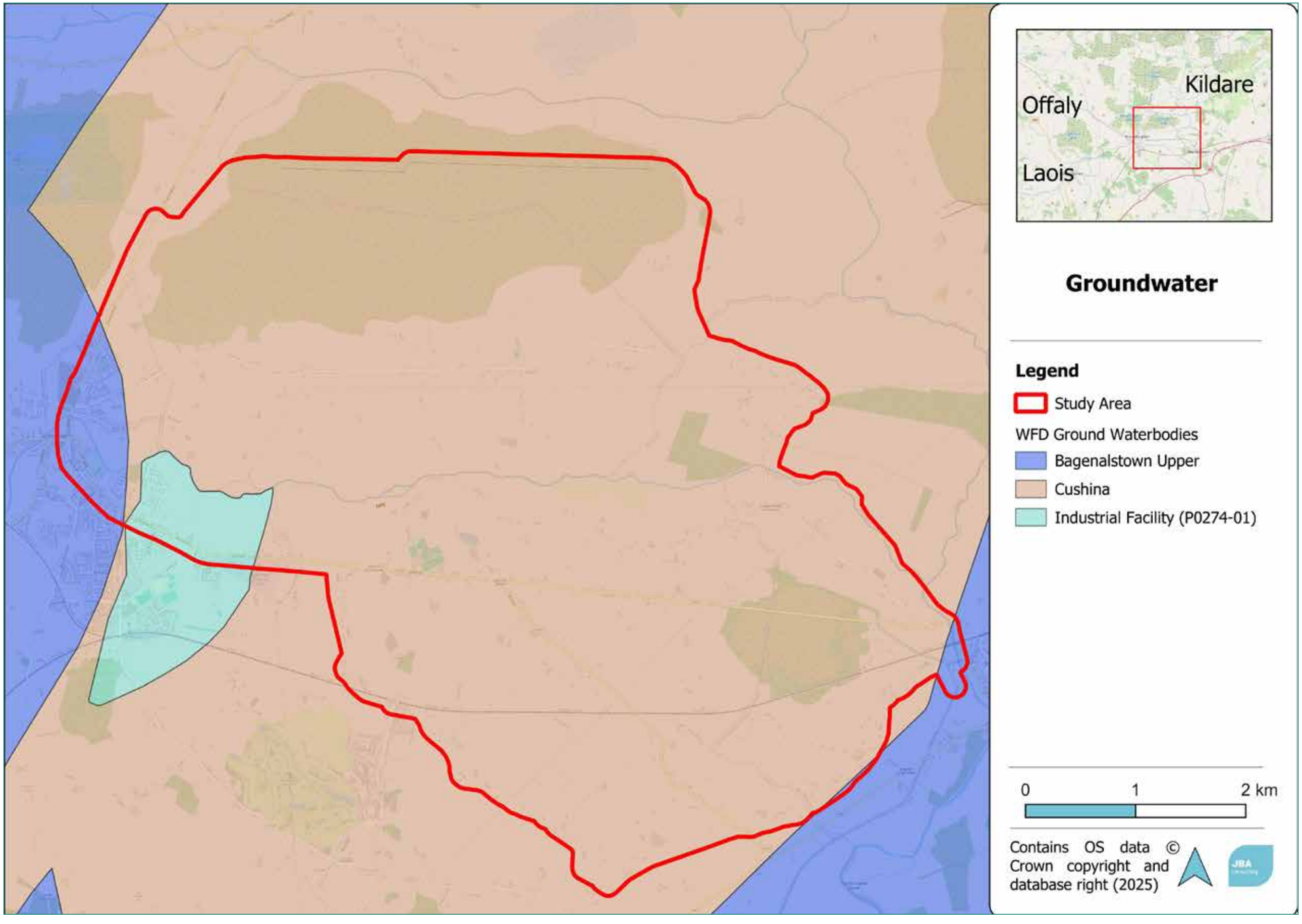


Figure 5-4 Groundwater bodies underlying the study area

5.4.1 Underlying Geology & Aquifer Vulnerability

The bedrock underlying the study area is comprised of a mix of thick-bedded limestone, which is locally peloidal, dark limestone & shale, and crinoidal wackestone/packstone limestone. The majority of subsoil permeability underlying the site is moderate, with some areas to the east and north of Portarlington having low subsoil permeability. There are additional areas with high subsoil permeability to the east of Portarlington and to the north of Monasterevin. There are several areas around Kilenard have unmapped subsoil permeability as well as an area to the south of Monasterevin. The aquifer underlying the site largely has moderate and high vulnerability. There are additional areas to the north of Monasterevin with low aquifer vulnerability, and an area to the east of Portarlington whose aquifer is 'Rock at or near surface'.

The aquifer underlying Portarlington and Monasterevin is a regionally important karstified aquifer. 'Karstification' is the process whereby limestone is slowly dissolved away by percolating waters. It most often occurs in the upper bedrock layers and along certain fractures, fissures and joints, at the expense of others. Karstification frequently results in the uneven distribution of permeability through the rock, and the development of distinctive karst landforms at the surface (e.g. swallow holes, caves, dry valleys), some of which provide direct access for recharge/surface water to enter the aquifer. The landscape is characterised by largely underground drainage, with most flow occurring through the more permeable, solutionally-enlarged, interconnected fissure/conduit zones, which may be several kilometres long. Groundwater velocities through fissures/conduits may be high and aquifer storage is frequently low. Groundwater often discharges as large springs (>2,000 m 3 /d), which range from regular and dependable to highly variable ('flashy'). There is strong interconnection between surface water and groundwater. The dominate flow type in this aquifer is diffuse.

The aquifer underlying the majority of the area between Portarlington and Monasterevin is a locally important aquifer with bedrock which is moderately productive only in local zones. This aquifer has a limited and relatively poorly connected network of fractures, fissures and joints, giving a low fissure permeability which tends to decrease further with depth. A shallow zone of higher permeability may exist within the top few metres of more fractured/weathered rock, and higher permeability may also occur along fault zones. These zones may be able to provide larger 'locally important' supplies of water. In general, the lack of connection between the limited fissures results in relatively poor aquifer storage and flow paths that may only extend a few hundred metres. Due to the low permeability and poor storage capacity, the aquifer has a low 'recharge acceptance'. Some recharge in the upper, more fractured/weathered zone is likely to flow along the relatively short flow paths and rapidly discharge to streams, small springs and seeps. Groundwater discharge to streams ('baseflow') can significantly decrease in the drier summer months.

There are two areas to the west of Monasterevin, around Kilenard and Clonnany, is a locally important karstified bedrock aquifer. This aquifer has similar properties to the regionally important karstified bedrock aquifer underlying Portarlington and Monasterevin, but with a smaller continuous area (GSI, 2025).

There is an additional area to the north of Monasterevin which is underlain by a locally important gravel aquifer. A sand/gravel aquifer is classed as locally important if it can supply locally important abstractions. It is highly permeable, more than 10 m thick or has a saturated thickness of at least 5m and normally extends between 1 - 10 km2. Groundwater flows through the pore spaces between sand/gravel grains, and the permeability is mainly determined by the grain size (larger grains give larger pore spaces), and the 'sorting' of the material (the more uniform, the higher the permeability). There is a relatively uniform distribution of groundwater, good aquifer storage and long groundwater flow paths, typically limited by the aquifer's extent. Groundwater gradients are typically low ('flatter' water tables), giving relatively low groundwater velocities. There is generally a strong interaction between surface water and groundwater, with groundwater discharging into streams if the water table is high, or conversely, the surface water moving into the aquifer, if the surface water level is high. Large, dependable springs (>2,000 m 3 /d) are often associated with sand/gravel aquifers, especially in low-lying areas or at the periphery of the aquifer.

5.5 Desktop Ecological Data

5.5.1 Local NBDC Data

5.5.1.1 Protected Flora and Fauna

Records of rare and protected flora and fauna have been collated from the NBDC (2025) database. All records present within the surrounding 2km of the study area, within the past 15 years. Appendix B.1 includes their level of protection, if they are red or amber listed on the International Union for the Conservation of Nature and Natural Resources (IUCN) Red List or the Birds of Conservation Concern in Ireland (2020-2026) and the date of the last record of this species at this location.

Two QI species of the River Barrow and River Nore SAC were identified within these records, Freshwater White-clawed Crayfish Austropotamobius pallipes and Otter Lutra lutra. There were several additional species of conservation concern not associated with protected sites that were also identified within the NBDC data. All species of conservation concern recorded within the NBDC records are listed below in Table 5-5 overleaf.

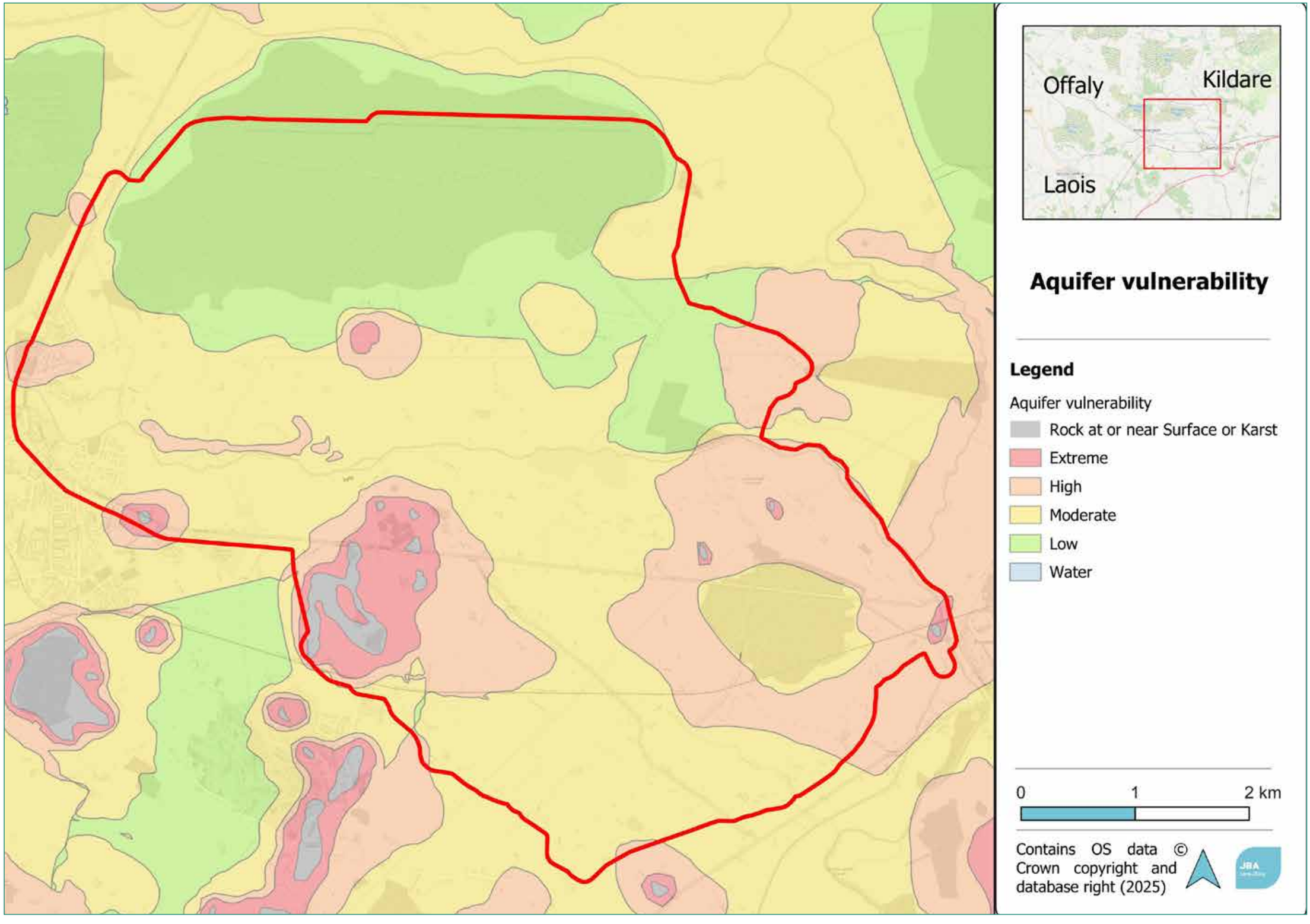


Figure 5-5 The local aquifer vulnerability throughout the study area

Table 5-5 All species of conservation concern recorded within the study area (NBDC, 2025)

Species of Conservation Concern (Protected and/or Amber / Red-listed)	
Amphibians Common Frog *Rana temporaria*	
Birds Barn Owl *Tyto alba*	Hen Harrier *Circus cyaneus*
Barn Swallow *Hirundo rustica*	House Martin *Delichon urbicum*
Black-headed *Gull Larus ridibundus*	House Sparrow *Passer domesticus*
Common Coot *Fulica atra*	Lesser Black-backed *Gull Larus fuscus*
Common Kestrel *Falco tinnunculus*	Little Egret *Egretta garzetta*
Common Kingfisher *Alcedo atthis*	Little Grebe *Tachybaptus ruficollis*
Common Linnet *Carduelis cannabina*	Mallard *Anas platyrhynchos*
Common Redshank *Tringa totanus*	Meadow Pipit *Anthus pratensis*
Common Sandpiper *Actitis hypoleucos*	Merlin *Falco columbarius*
Common Snipe *Gallinago gallinago*	Mute Swan *Cygnus olor*
Common Starling *Sturnus vulgaris*	Northern Lapwing *Vanellus vanellus*
Common Swift *Apus apus*	Peregrine Falcon *Falco peregrinus*
Common Wood Pigeon *Columba palumbus*	Redwing *Turdus iliacus*
Eurasian Curlew *Numenius arquata*	Rock Pigeon *Columba livia*
Eurasian Teal *Anas crecca*	Sand Martin *Riparia riparia*
Eurasian Tree Sparrow *Passer montanus*	Skylark *Alauda arvensis*
Eurasian Wigeon *Anas penelope*	Spotted Flycatcher *Muscicapa striata*
Eurasian Woodcock *Scolopax rusticola*	Stock Pigeon *Columba oenas*
European Golden Plover *Pluvialis apricaria*	Tufted Duck *Aythya fuligula*
European Greenfinch *Carduelis chloris*	Tundra Swan *Cygnus columbianus*
Goldcrest *Regulus regulus*	Whinchat *Saxicola rubetra*
Great Cormorant *Phalacrocorax carbo*	Whooper Swan *Cygnus cygnus*
Grey Wagtail *Motacilla cinerea*	Willow Warbler *Phylloscopus trochilus*
	Yellowhammer *Emberiza citrinella*
Invertebrates Freshwater White-clawed Crayfish *Austropotamobius pallipes*	Marsh Fritillary *Euphydryas aurinia*
	Large Red Tailed Bumble Bee *Bombus (Melanobombus) lapidarius*
Mosses Large White-moss *Leucobryum glaucum*	Wedge-leaved Screw-moss *Tortula cuneifolia*

Continues overleaf

Table 5-5 All species of conservation concern recorded within the study area (NBDC, 2025)

Species of Conservation Concern (Protected and/or Amber / Red-listed)	
Reptiles Common Lizard *Zootoca vivipara*	
Terrestrial Mammals Brown Long-eared Bat *Plecotus auritus*	Nathusius's Pipistrelle *Pipistrellus nathusii*
Common Pipistrelle *Pipistrellus pipistrellus*	Natterer's Bat *Myotis nattereri*
Daubenton's Bat *Myotis daubentoniid*	Pine Marten *Martes martes*
Eurasian Badger *Meles meles*	Pipistrelle *Pipistrellus pipistrellus sensu lato*
Eurasian Red Squirrel *Sciurus vulgaris*	Soprano Pipistrelle *Pipistrellus pygmaeus*
European Otter *Lutra lutra*	West European Hedgehog *Erinaceus europaeus*
Irish Hare *Lepus timidus subsp. Hibernicus*	Whiskered Bat *Myotis mystacinus*
Lesser Noctule *Nyctalus leisleri*	

5.5.1.2 Invasive Non-native Species (INNS)

Certain invasive non-native animals and plants are listed under the First Schedule of the European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374/2024). This makes it an offence to release, plant them in the wild or cause them to disperse, spread or otherwise cause them to grow. If these species occur on a site proposed for development or other work which may disturb the ground, control of these species is likely to be required.

European Council's Regulation on the prevention and management of the introduction and spread of invasive alien species [374/2024] sets out to prevent, minimise and mitigate the adverse impacts of the introduction and spread, both intentional and unintentional, of invasive alien species on biodiversity and the related ecosystem services as well as on human health and the economy.

Table 5-6 displays a list invasive species (flora and fauna) recorded within 2km of the study area (NBDC, 2025). The list includes species, their level of impact, and whether they are listed on the First Schedule of the European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374/2024). A full list of INNS within 2km of the study area, including dates of recording is also available to view in Appendix B.2.

Table 5-6 INNS recorded within 2km of the study area

Invasive Non-native species	Impact	S.I. No. 374/2024
Eastern Grey Squirrel *Sciurus carolinensis*	High	Yes
European Rabbit *Oryctolagus cuniculus*	Medium	No
Giant Hogweed *Heracleum mantegazzianum*	High	Yes
Indian Balsam *Impatiens glandulifera*	High	Yes
Jenkins' Spire Snail *Potamopyrgus antipodarum*	Medium	No
Sycamore *Acer pseudoplatanus*	Medium	No

5.5.2 Irish Birding Records (2015 – 2025)

Irish Birding's online database contains records of bird sightings across Ireland since its establishment in 2000. This database provides information on the location and timing of each individual sighting. A search of this database for the Portarlington / Monasterevin area revealed 12 bird species within the study area over the past 10 years, 7 of which are on the Birds of Conservation Concern in Ireland (2020-2026) Amber or Red lists (Table 5-7).

Table 5-7 Irish Birding data for townlands within the study area (Irish Birding, 2025)

Townland / Area	Bird Species	
Portarlington	Barn Owl *Tyto alba* Buzzard *Buteo buteo* Carrion Crow *Corvus corone* Great-spotted Woodpecker *Dendrocopos major* Hen Harrier *Circus cyaneus* Kingfisher *Alcedo atthis*	Marsh Harrier *Circus aeruginosus* Swift *Apus apus* Waxwing *Bombycilla garrulus*
Monasterevin	Barn Owl Buzzard Hen Harrier Kestrel *Falco tinnunculus*	Peregrine *Falco peregrinus* Whooper Swan *Cygnus cygnus*

5.5.3 Inland Fisheries Ireland (IFI) (2015 – 2025)

Inland Fisheries Ireland data obtained during its WFD fish ecological status surveys are displayed in Table 5-8, which details fish species present within study area's ZoI, i.e., major watercourses within, immediately upstream and/or downstream of the study area.

Table 5-8 Fish species present within the ZoI of the study area (IFI, 2025)

WFD Watercourse (Location)	Fish Species Present	
River Barrow (Monasterevin)	Atlantic Salmon *Salmo salar* Brown Trout *Salmo trutta* Dace *Leuciscus leucisus* Gudgeon *Gobio gobio* Minnow *Phoxinus phoxinus* Perch *Perca fluviatilis* Pike *Esox lucius* Roach *Rutilus rutilus*	Roach x Bream hybrid *Rutilus rutilus x Abramis brama* Stone Loach *Barbatula barbatula*
River Barrow (Portarlington)	Atlantic Salmon Brown Trout Dace Gudgeon Minnow	Stone Loach Three-spined Stickleback *Gasterosteus aculeatus*
River Barrow (Clonterry)	Lamprey species *Lampetra* spp. Minnow Stone Loach	
Triogue River	Brown Trout Dace Gudgeon Minnow	Stone Loach Three-spined Stickleback
Owenass River	Atlantic Salmon Brown Trout Dace Lamprey species	Stone Loach Three-spined Stickleback

Of the species listed in the Table 5-8 above, three species are of conservation concern, namely European Eel, the Lamprey spp. and Atlantic Salmon. European Eel currently has a Critically Endangered IUCN status and is protected under the OSPAR Convention, while Atlantic Salmon and Lamprey species are protected under the Annex II and V of the EU Habitats Directive. European Eel are regarded as being of international ecological importance given the level of international protection afforded to them under the OSPAR Convention.

One of the above listed species, Roach, is recognised as an introduced invasive non-native fish species, and is listed on the First Schedule of the European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374/2024).

5.5.4 Ecological Walkover Survey

Two ecological walkover surveys were undertaken during the spring (28/03/2025) / early summer (16/05/2025) in order to gain an up-to-date baseline of the study area so that a greater understanding / context of the biodiversity within the area could inform this baseline study. These surveys were conducted by JBA Ecologists (William Mulville, Michael Coyle, Matt Hosking and Jai Dolan), who recorded notable habitats and the presence of any rare / protected flora and fauna, as well as any invasive non-native species.

5.5.5 Overview of Notable High Value / Sensitivity Habitats

The study area contains a wide range of high-value habitats that would be sensitive to the potential construction and/or operation of walking / cycling routes. The most sensitive habitats within the study area are as follows:

- Hedgerow and Treelines;
- Wet woodlands;
- Canals (Active Grand Canal);
- Mosaiced wet and dry woodland, marsh and dry meadow (inactive canal);
- Wet woodlands;
- Upland / eroding rivers (Clogheen Stream);
- Lowland / depositing rivers (River Barrow); and
- Mosaiced heathland, cut-over bog, ponds, scrub and woodland.

These habitats are discussed briefly along with their Fossitt (2000) classification within the following sub-sections.

5.5.5.1 Hedgerows (WL1) and Treelines (WL2)

The study area contains a high frequency of hedgerow and treeline habitats, the vast majority of which currently act as field / road boundaries. The diversity and condition of these linear habitats varied notably; however, it was noted that hedgerows and treelines adjacent to the inactive canal sections, historical features (e.g., cemetery), and laneways / trails were generally in better condition with an increased ground floral diversity (Figure 5-6), with species such as Primrose *Primula vulgaris*, Violet *Viola* spp, Barren Strawberry *Potentilla sterilis*, Great Woodrush *Luzula sylvatica*, Herb-Robert *Geranium robertianum*, Lords-and-ladies *Arum maculatum*; as well as bare, raised bank sections containing burrows of mining / cavity nesting bee species.

Figure 5-6 Numerous hedgerows within the study area display diverse understorey flora

5.5.5.2 Wet Woodlands (WN6)

Wet woodland was present between the south bank of the Monasterevin to Portarlington canal's south bank and the bog / heathland, located north of the R424; as well as another patch wet woodland to the northwest of this inactive canal section. These woodlands aligned with Fossitt's (2000) WN6 – Wet willow-alder-ash woodland habitat classification, as they were comprised of Ash *Fraxinus excelsior*; Grey Willow *Salix cinerea*; Goat Willow *Salix caprea* and Silver Birch *Betula pendula*, with an understorey of Yellow Iris *Iris pseudacorus*, Meadowsweet *Filipendula ulmaria*, Pendulous Sedge *Carex pendula*, Ivy *Hedera hibernica*, Horsetail *Equisetum* spp.; and mosses present alongside pools of standing water containing Pondweed *Potamogeton* species (Figure 5-7). These habitats are of particular high-value to local amphibian species as the can support the entire life cycle of both Common Frog *Rana temporaria* and Smooth Newt *Lissotriton vulgaris*.

Figure 5-7 The wet woodland which lies between the Monasterevin to Portarlington canal's south bank and the bog / heathland

5.5.5.3 Canals (FW3) [Active Grand Canal]

The active Grand Canal (pNHA) is present within eastern section of the study area (Figure 5-8). It hosts a range of valuable aquatic, wetland and terrestrial habitats, which in turn support a wide range of faunal species including Otter *Lutra lutra*, the majority of Irish bat species, numerous waterfowl / semi-aquatic bird species, amphibians, cyprinid fish species and freshwater and terrestrial invertebrates. The section within the study area contained habitats suitable for bat roosts (bridges / structures) and waterfowl nesting.

Figure 5-8 Grand Canal north-west of Monasterevin

5.5.5.4 Mosaic: Wet and Dry Woodland (WN6 / WD1), Marsh (GM1) and Dry Meadow (GS2)

The inactive Monasterevin to Portarlington canal section contains a mosaic of wet willow-alder-ash woodland and marsh within the old canal bed, while the upper (dry) banks support mixed broadleaved woodland and dry meadow habitat (Figure 5-9). This allows it to host a wide range of flora and fauna as a result of the habitat diversity, including Badger *Meles meles* (setts), Pine Marten *Martes martes* and Irish Stoat *Mustela erminea hibernica*.

Figure 5-9 Mosaic of wet woodland, marsh, dry meadow and dry woodland along the inactive Monasterevin to Portarlington canal section

5.5.5.5 Upland / Eroding Rivers (Clogheen Stream)

Small natural watercourses are present within the study area, the most notable of which is the Clogheen Stream within the south-eastern section of the study area (Figure 5-10). As a tributary of the River Barrow, this stream has the potential to support Atlantic Salmon, Euoprean Eel and Lamprey species. It's connection to the River Barrow (and the SAC), increases the sensitivity of this watercourse and must be considered when assessing route options.

Figure 5-10 The Clogheen Stream present along route option 5

5.5.5.6 Lowland / Depositing Rivers (River Barrow)

The River Barrow's SAC status makes the range of habitats and fauna within, the most sensitive ecological zone within the study area (Figure 5-11). Route options that involve works within its boundaries / riparian zones and/or over existing bridges will need to undergo thorough assessment given its very high sensitivity.

Figure 5-11 The River Barrow at Portarlington, along route options 2A and 3

5.5.5.7 Mosaic: Heathland, Cut-over Bog, Ponds, Scrub and Dry Woodland

The cut-over bogs within and adjacent to the study area's route options currently support a range of cut-over bog; dry heath; pond; scrub; immature and semi-mature dry woodland habitats. These habitats are important for breeding and wintering bird species, amphibians, and red-listed terrestrial invertebrate species, such as Dark Tussock moth *Dicallomera fascelina* and Small Heath butterfly *Coenonympha pamphilus*. The habitat and floral potential of these habitats, if restoration works take place, also notably raises the sensitivity of these habitats.

Figure 5-12 Heath, scrub and bog ponds to the south of the Monasterevin to Portarlington canal

Figure 5-13 The gradient of habitats within Derrylea Bog, from cut-over bog to scrub / heath, to woodland

Figure 5-14 Bog ponds host in Derrylea hosts a range of bird and invertebrate species

Figure 5-16 Inactive Badger sett entrance along the Monasterevin to Portarlington Canal

5.5.6 Non-volant Mammals

Evidence (pawprints) of the QI mammal species, Otter, was recorded within the bank sediment depositions adjacent to the road bridge at Co. Kildare – Co. Laois border, along route option 6.

JBA surveyors recorded the presence of Badger *Meles meles*, Irish Stoat *Mustela erminea* subsp. *hibernica*, and Pine Marten *Martes martes*, within the boundaries of the study area. These recordings are concentrated within a woodland strip to the north of the bog area to the west of Monasterevin, just north of the R424 (see Figure 5-15). There were additional recording of Badger and Pine Marten activity within Derrylea bog to the north of the study area (Figure 5-17).

Pine Marten and Irish Stoat scat were recorded in the wet woodland area to the north of the bog area, on the northern side of the R424. Several inactive Badger sett entrances and snuffle holes were identified within this area. This woodland habitat contains a high frequency of deadwood which would be suitable for Pine Marten denning, and a canopy in which to hunt; local Badgers are provided with ample foraging resources and minimal disturbance (e.g., earthen banks, Elder, and Bramble); and local Stoats can avail of inactive Badgers setts for their dens and hunt their favoured prey item, European Rabbit, which is also present in the area.

Additionally, several snuffle holes were recorded to the west of the Derrylea bog area to the north of the study area. A Pine Marten scat was identified within a woodland strip within one of the dried-out sections of the bog.

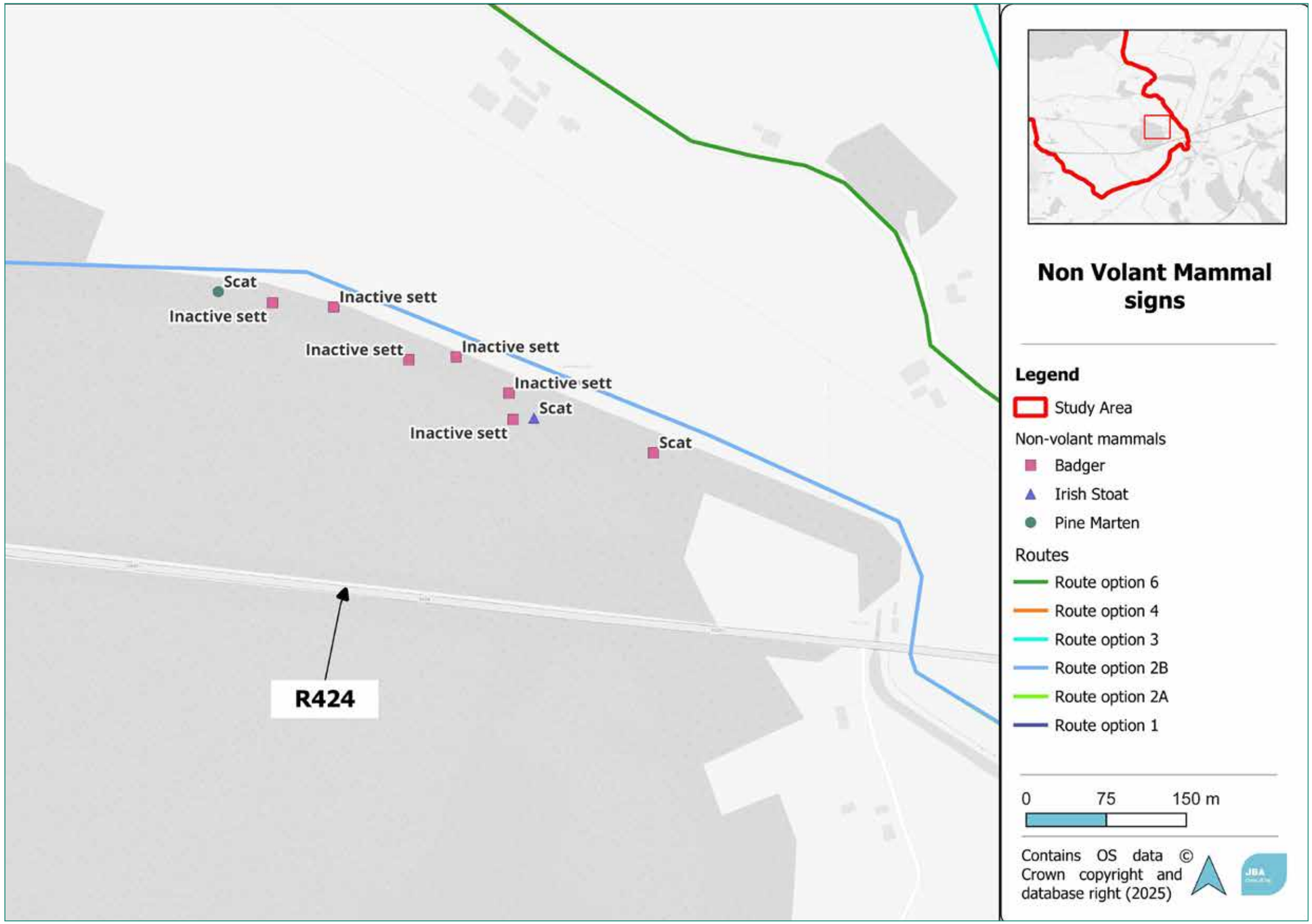


Figure 5-15 Non-volant mammals signs within the bog area to the north of the R424

Figure 5-17 Non-volant mammal signs within Derrylea Bog

5.5.7 Bats

JBA Ecologists recorded a total of 14 potential bat roost features (PRFs) within the boundaries of the study area. These PRFs include both natural features (dead and living trees) and artificial features (buildings and other human-made structures). Five of these features were deemed to be of high potential for bat roosting, all of which are artificial features. Eight of the PRFs were concentrated to the east of the study area between Monasterevin and a bog area to the west of Monasterevin. These have been mapped in relation to the proposed routes in Figure 5-18. There were an additional two high potential roosting features identified around Lea Castle House to the west of the study area. Three more PRFs were identified on the outskirts of Portarlington. One low potential feature was recorded within a tree in the green space adjacent to the Portarlington Leisure Centre. Two more low to moderate potential features were identified within the Cushina Road Bridge crossing the River Barrow. These have been mapped in relation to the proposed routes in Figure 5-19.

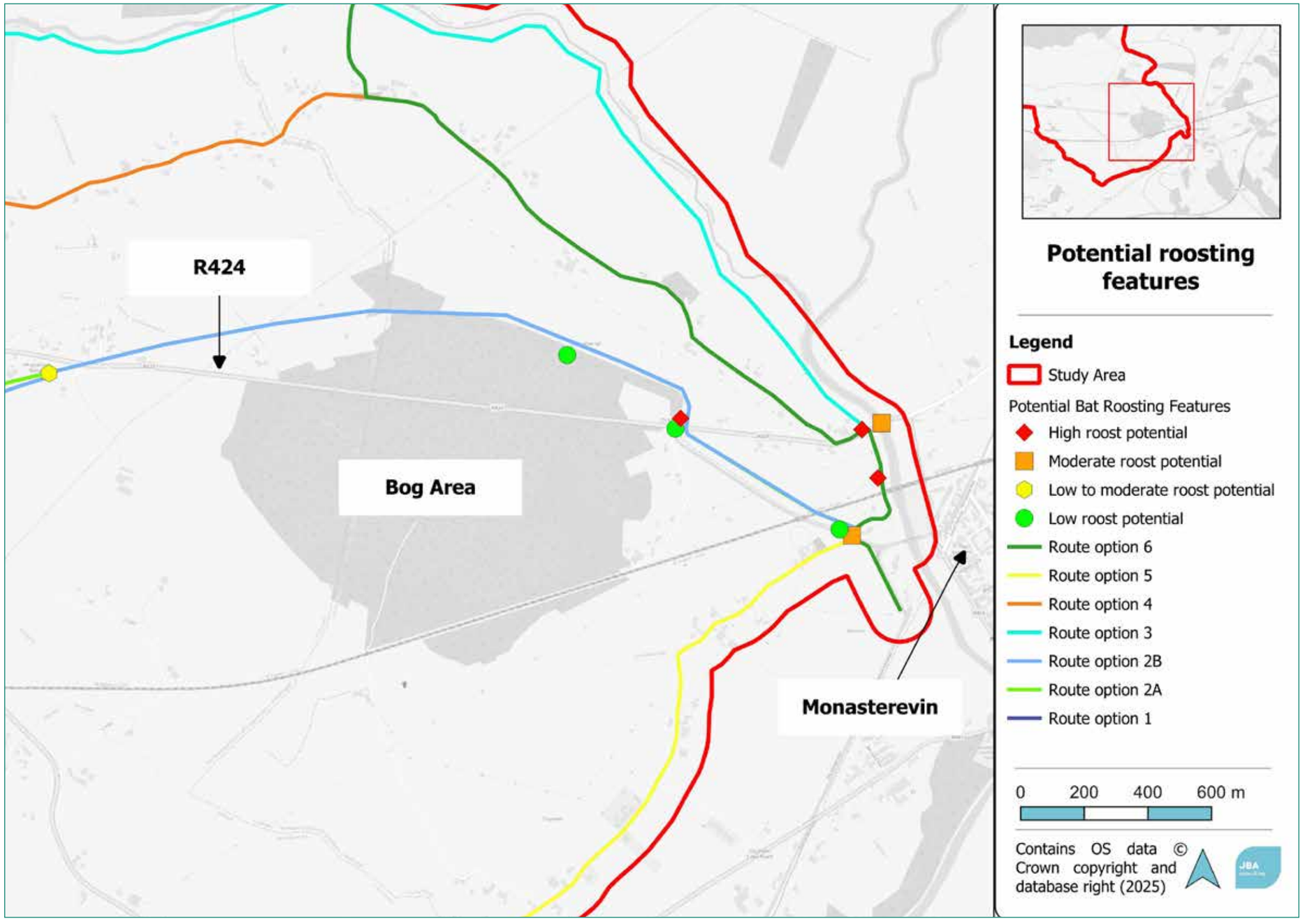


Figure 5-18 Potential bat roost features recorded to the east of the study area

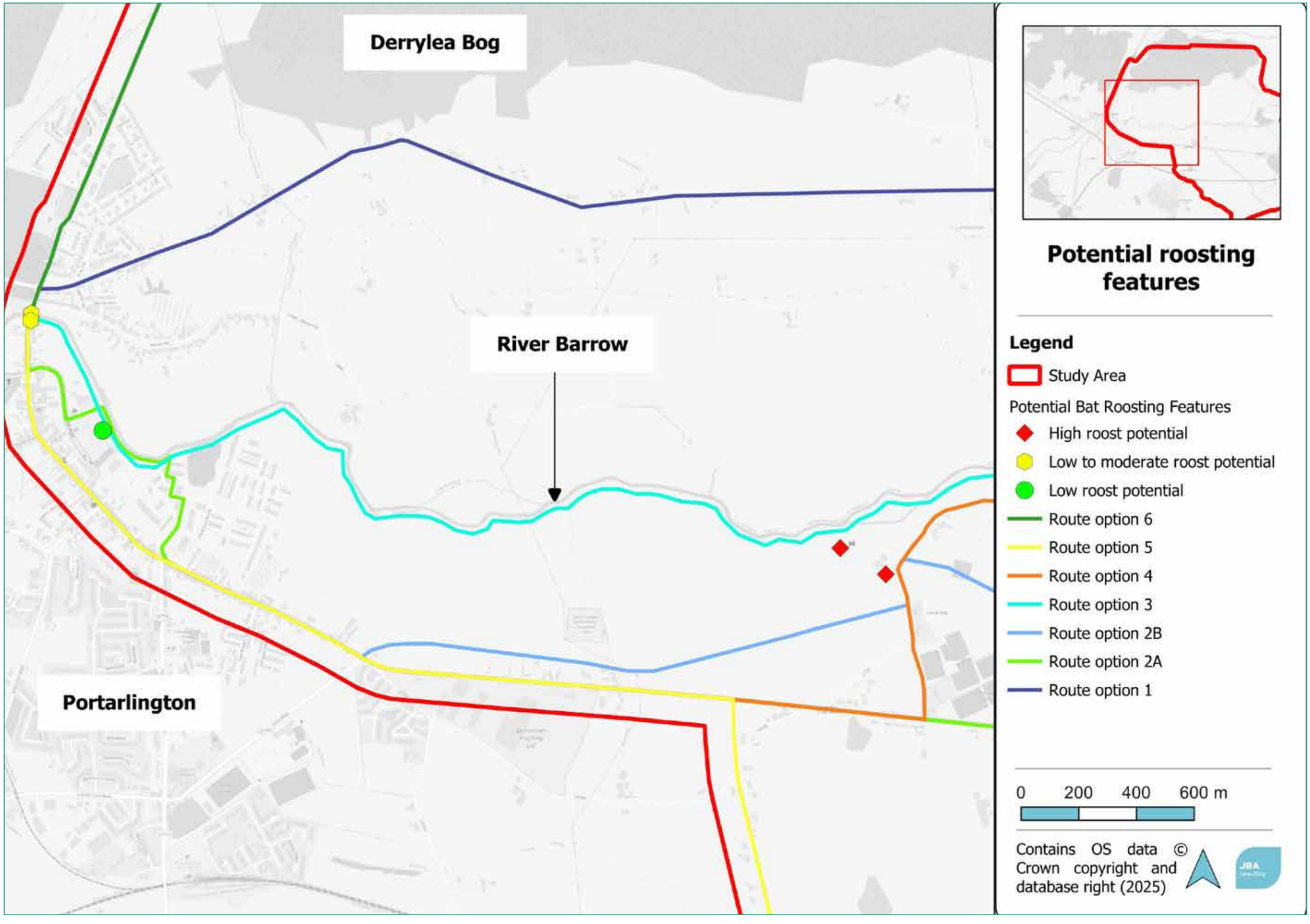


Figure 5-19 Potential bat roost features recorded to the west of the study area

Figure 5-20 Example of potential roost feature – cracks present in the underside of the canal bridge west of Monasterevin along route

5.5.8 Birds

JBA Ecologists recorded the following 20 bird species within the study area across the two ecological walkover surveys. These species are listed below, along with their protection and/or conservation status:

- Blackbird *Turdus merula* (Green-listed);
- Bullfinch *Pyrrhula pyrrhula* (Green-listed);
- Buzzard *Buteo buteo* (Green-listed);
- Common Cuckoo *Cuculus canorus* (Green-listed);
- Common Pheasant *Phasianus colchicus* (Annex II & III; Green-listed);
- Common Snipe *Gallinago gallinago* (Red listed);
- Greater Whitethroat *Curruca communis* (Green-listed);
- Grey Wagtail *Motacilla cinerea* (Red-listed);
- Kestrel *Falco tinnunculus* (Red-listed);
- House Sparrow *Passser domesticus* (Amber listed);
- Mallard *Anas platyrhynchos* (Annex II & III; Amber-listed - Breeding and Wintering);
- Meadow Pipit *Anthus pratensis* (Red-listed);
- Moorhen *Gallinula chloropus* (Green-listed);
- Peregrine Falcon *Falco peregrinus* (Annex I, Green-listed);
- Pied Wagtail *Motacilla alba* subsp. *yarrellii* (Green-listed);
- Sand Martin *Riparia riparia* (Amber-listed);
- Sedge Warbler *Acrocephalus schoenobaenus* (Green-listed);
- Skylark *Alauda arvensis* (Amber-listed);
- Willow Warbler *Phylloscopus trochilus* (Amber listed);
- Wood Pigeon *Columba palumbus* (Annex II & III; Green-listed); and
- Wren *Troglodytes troglodytes* (Green-listed).

During the first survey (28/03/2025) a Peregrine Falcon was spotted resting atop Lea Castle. Past NBDC records also indicate that a pair of Peregrin Falcons have been present within the locality of the castle within the last decade; therefore, we suspect that the pair are potentially nesting atop Lea Castle. While this species is green listed, it is listed in Annex I of the Bird's Directive and protected under the Irish Wildlife Acts.

Figure 5-22 Peregrine Falcon perched atop Lea Castle along route options 3 and 4

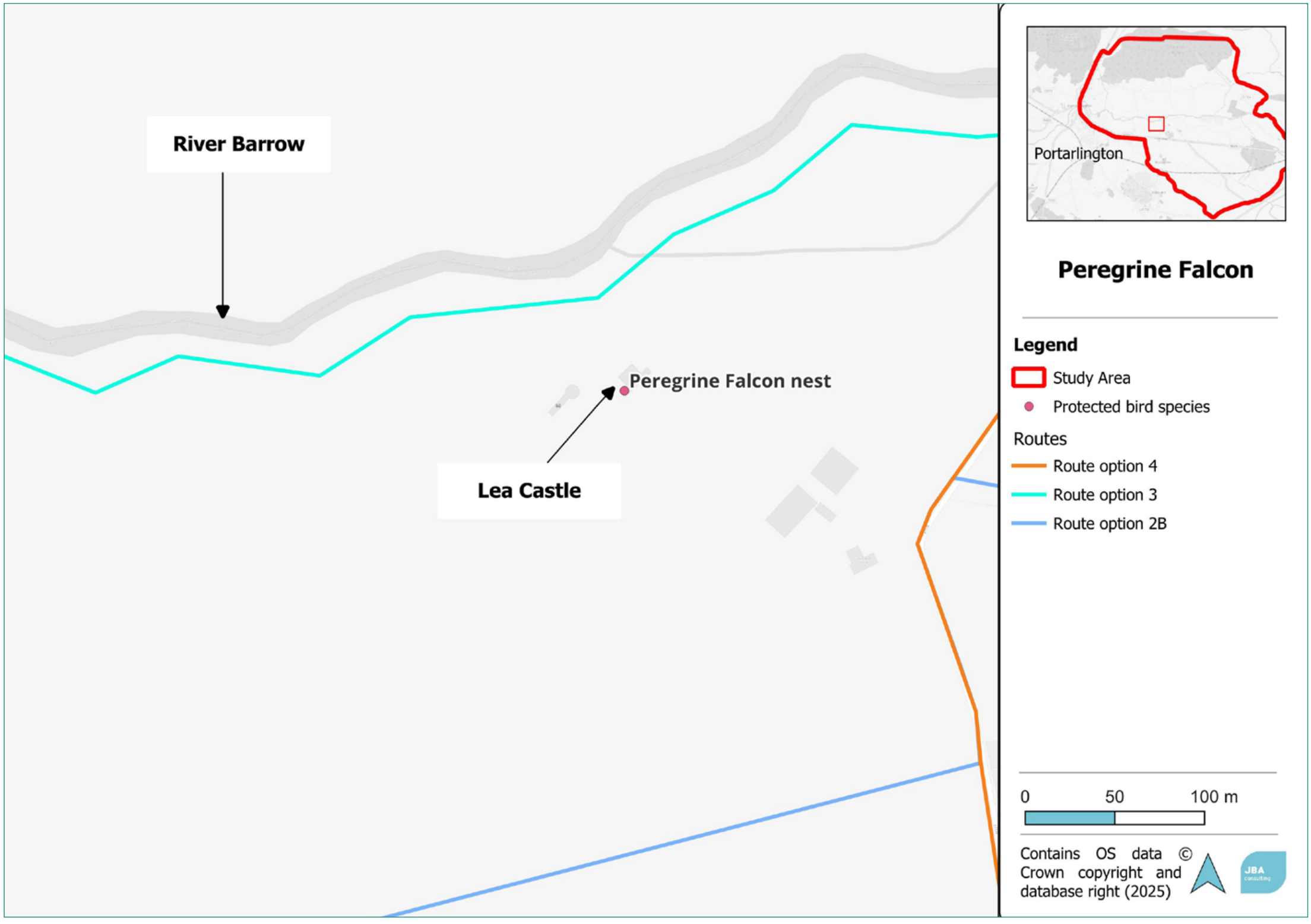


Figure 5-21 Potential Peregrine Falcon nesting within Lea Castle

5.5.9 Amphibians

Common Frog was recorded by JBA surveyors within dry grassland strip immediately west of the Derrylea Bog (Figure 5-23). There is suitable habitat for Common Frog and Smooth Newt, including spawning and hibernation habitats, throughout much of the study area's wetland / waterbody habitats.

Figure 5-23 Common Frog recorded within Derrylea Bog

5.5.10 Fish

JBA surveyors noted several Brown Trout present within the River Barrow at the road bridge at Co. Kildare – Co. Laois border, along route option 6 (see Figure 5-24).

Figure 5-24 Brown Trout present in the River Barrow along the Kildare-Laois border

5.5.10 Fish

JBA surveyors recorded the following three terrestrial invertebrate species within the study area across the two ecological walkover surveys. These species are listed below, along with their respective protection and/or conservation status:

- Dark Tussock Moth *Dicallomera fascelina*;
- Silver Hook Moth *Lithacodia uncula*;
- Green Tiger Beetle *Cicindela campestris*;
- Small Heath Butterfly *Coenonympha pamphilus*;
- Small Copper Butterfly *Lycaena phlaeas* (Figure 5-25);
- Common Blue Damselfly *Enallagma cyathigerum*;
- Large Red Damselfly *Pyrrhosoma nymphula*;
- Small Red Damselfly *Ceriagrion tenellum*;
- Four Spotted Chaser Dragonfly *Libellula quadrimaculata*; and
- Emperor Dragonfly *Anax imperator* (Figure 5-25).

Figure 5-25 Small Copper (left) and Emperor Dragonfly (right) recorded within Derrylea Bog

Two of the species are current of conservation concern was recorded, namely Small Heath (Near threatened) and Dark Tussock Moth (Vulnerable). The locations of these recording are shown below in Figure 5-26 and Figure 5-27.

Figure 5-26 Location of Small Heath recording in Derrylea Bog

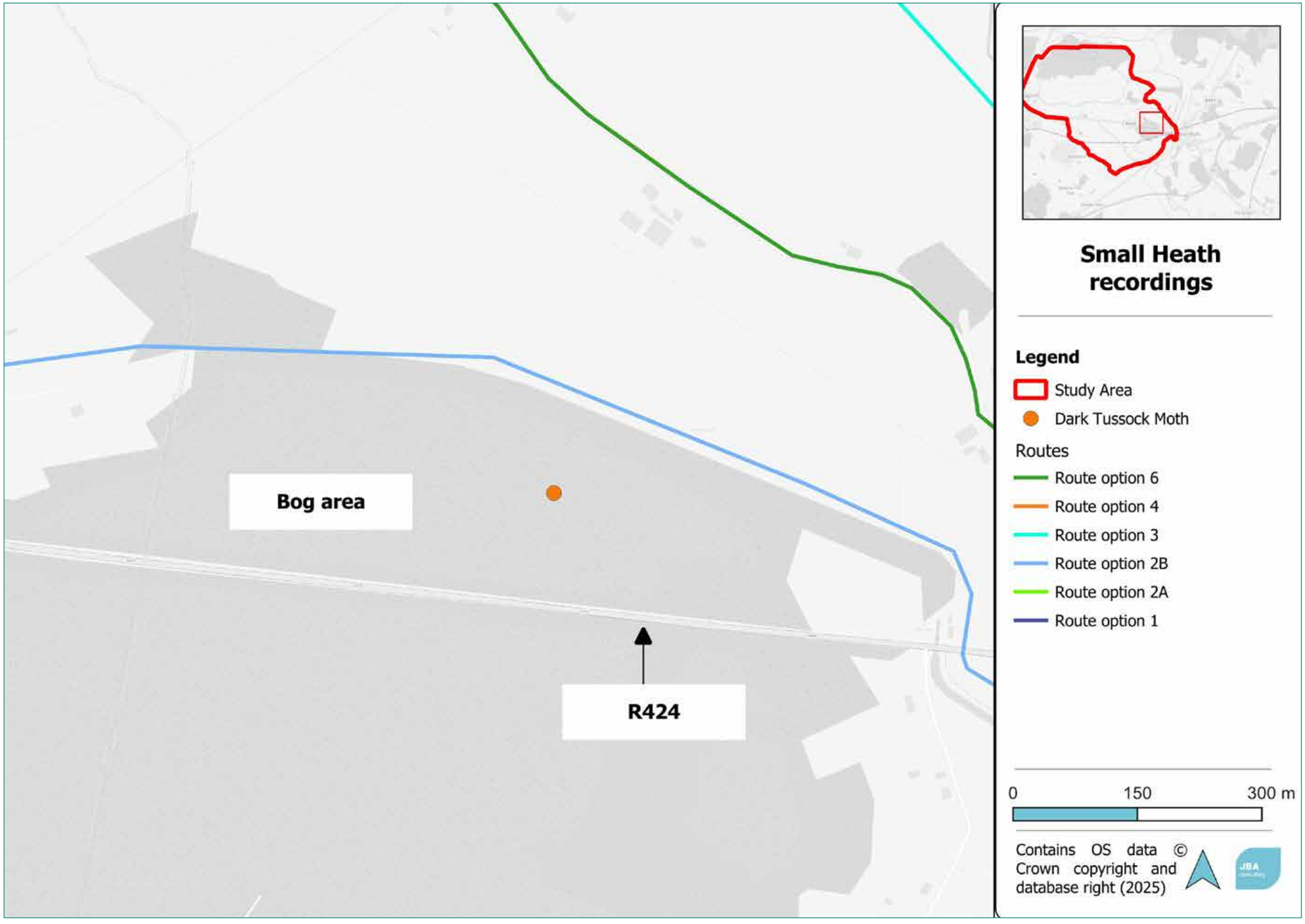
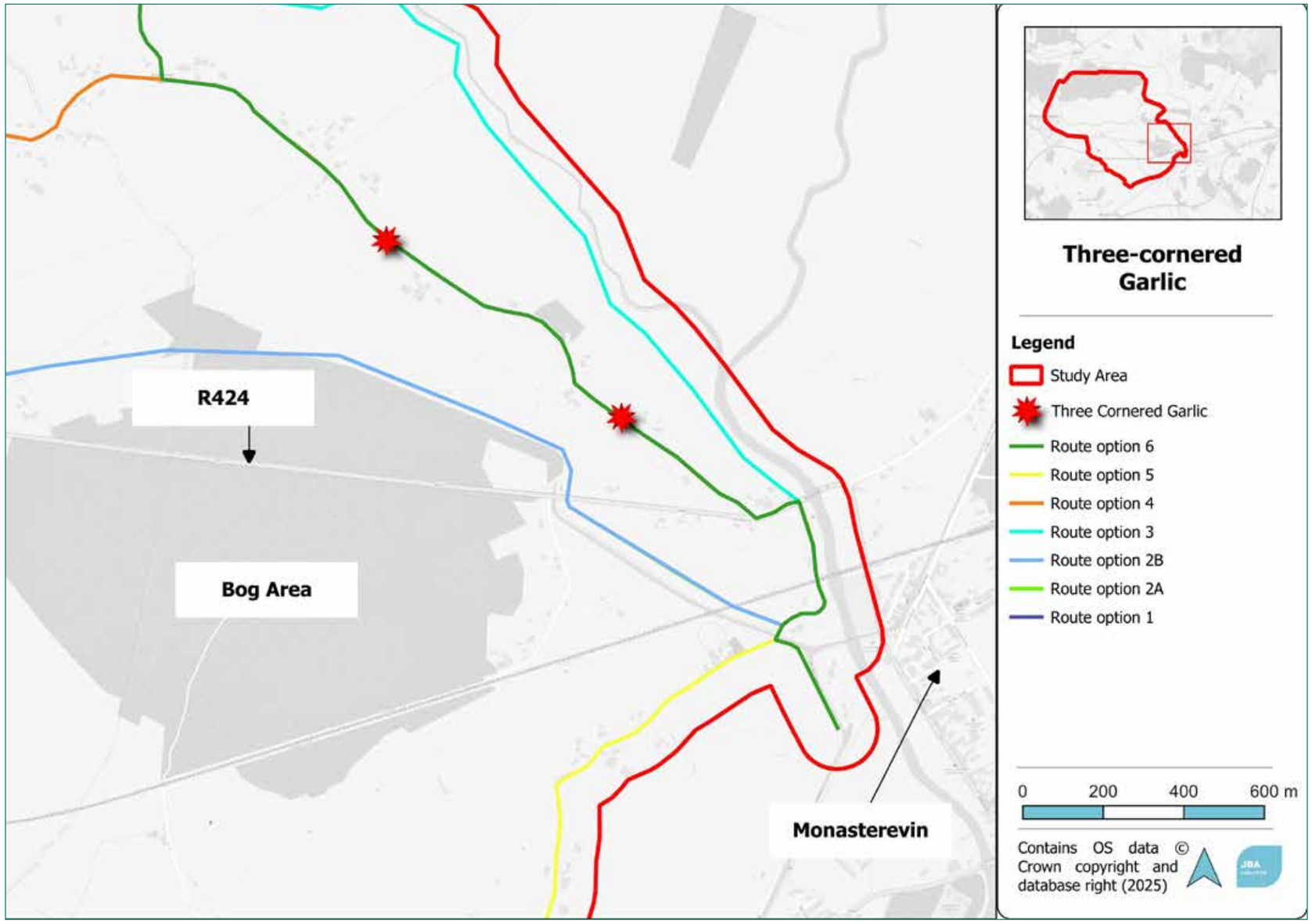


Figure 5-27 Location of Dark Tussock Moth recording

5.5.12 Invasive Non-native Species

The surveyors recorded a total of six invasive non-native floral species within the study area, which are listed below, along with their respective impact levels:

- Cherry Laurel (High Impact);
- Cotoneaster *Cotoneaster horizontalis* (Medium Impact);
- Ground-elder *Aegopodium podagraria* (Low Impact);
- Sycamore *Acer pseudoplatanus* (Medium Impact);
- Three-cornered Garlic *Allium triquetrum* (Medium Impact); and
- Winter Heliotrope *Petasites pyrenaicus* (Low Impact)



Of the six invasives species listed above, only Three-cornered Garlic is currently listed on the First Schedule of the European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374/2024). This species was recorded to the west of the study area along route 6. The location of this particularly problematic species is displayed in Figure 5-28.

Figure 5-28 First Schedule-listed invasive species locations within the study area

5.6 Ecological Sensitivity Map

5.5.12 Invasive Non-native Species

The ecological sensitivity of the study area has been mapped below in Figures 29 to 33. These maps qualitatively highlights the ecological sensitivity of the designated sites, along with the terrestrial and aquatic habitats. Sensitivity maps were created based on the field surveys and aerial imagery. Land cover was classified into five sensitivity categories based on expert opinion, which are outlined in Table 5-9 below.

Table 5-9 Ecological sensitivity categories

Ecological sensitivity category	Land uses
Very High (No-go areas)	Natura 2000 sites, pNHAs, Bog habitat, Rivers
High	Woodland, Hedgerows and Treelines (ecological connectivity)
Moderate	Scrub habitat, artificial waterbodies (i.e. ponds)
Low	Arable Land, Amenity Green Spaces
Negligible	Roads, Residential, Industry (Artificial surfaces)

Very high sensitivity zones have been defined as no-go areas as these represent protected areas and critical habitat. Similarly, it is recommended high sensitivity areas are generally avoided as well. Moderate and low sensitivity areas allow greater flexibility when it comes to the proposed works and are not considered as critical habitat. Negligible areas are comprised of roads and residential areas.

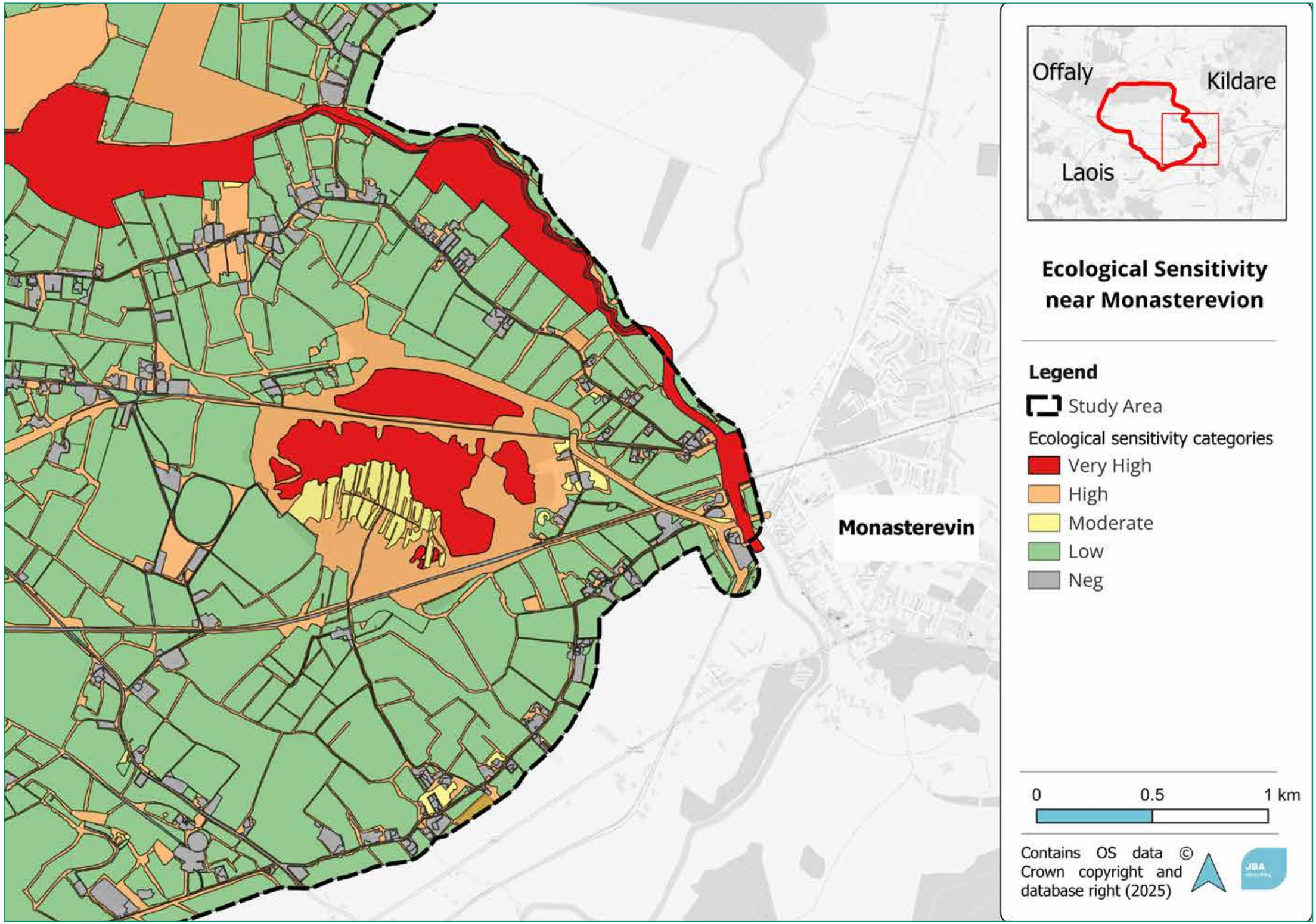


Figure 5-29 Ecological sensitivity map of the east of the study area near Monasterevin

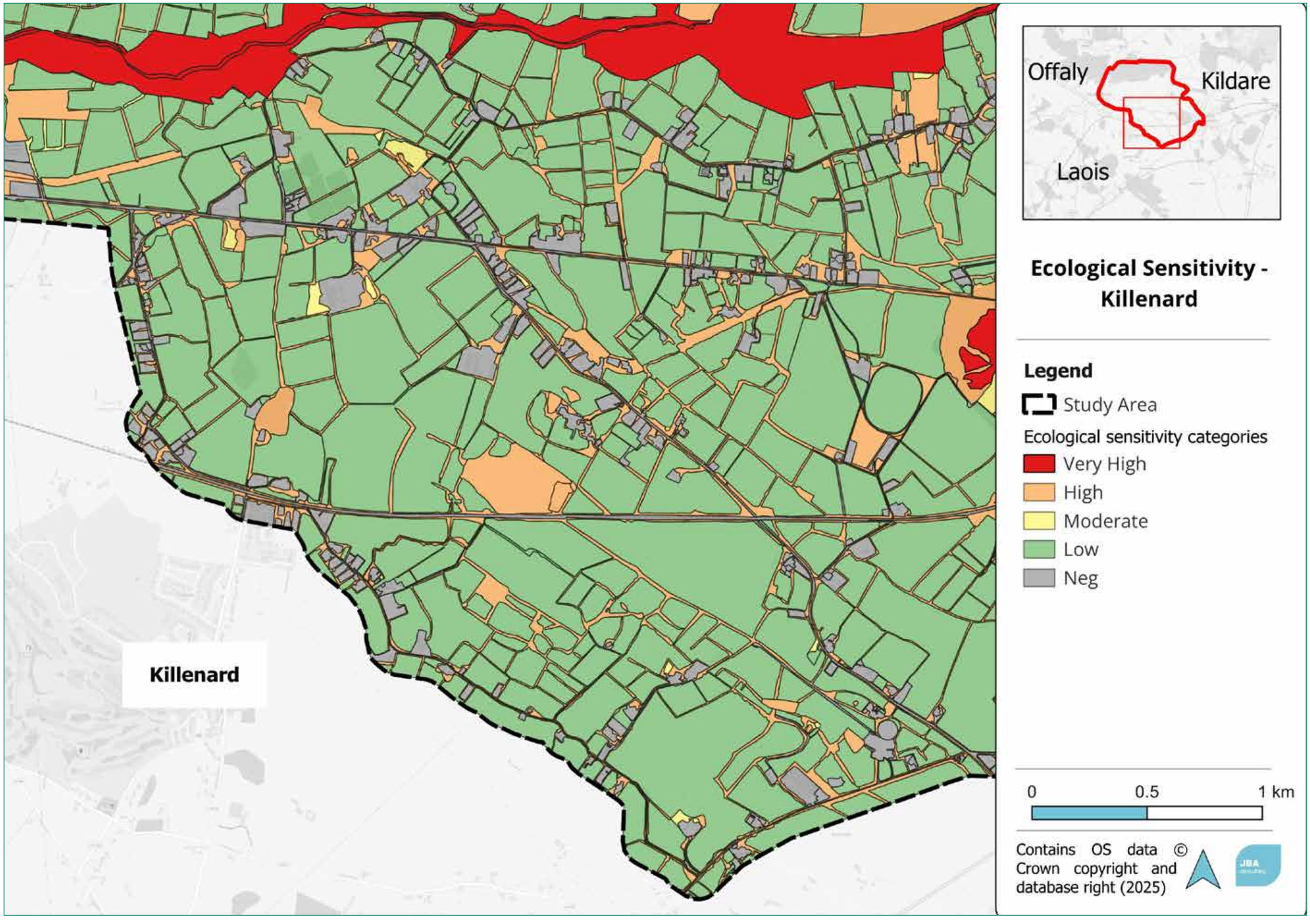


Figure 5-30 Ecological sensitivity map of the south of the study area near Killenard

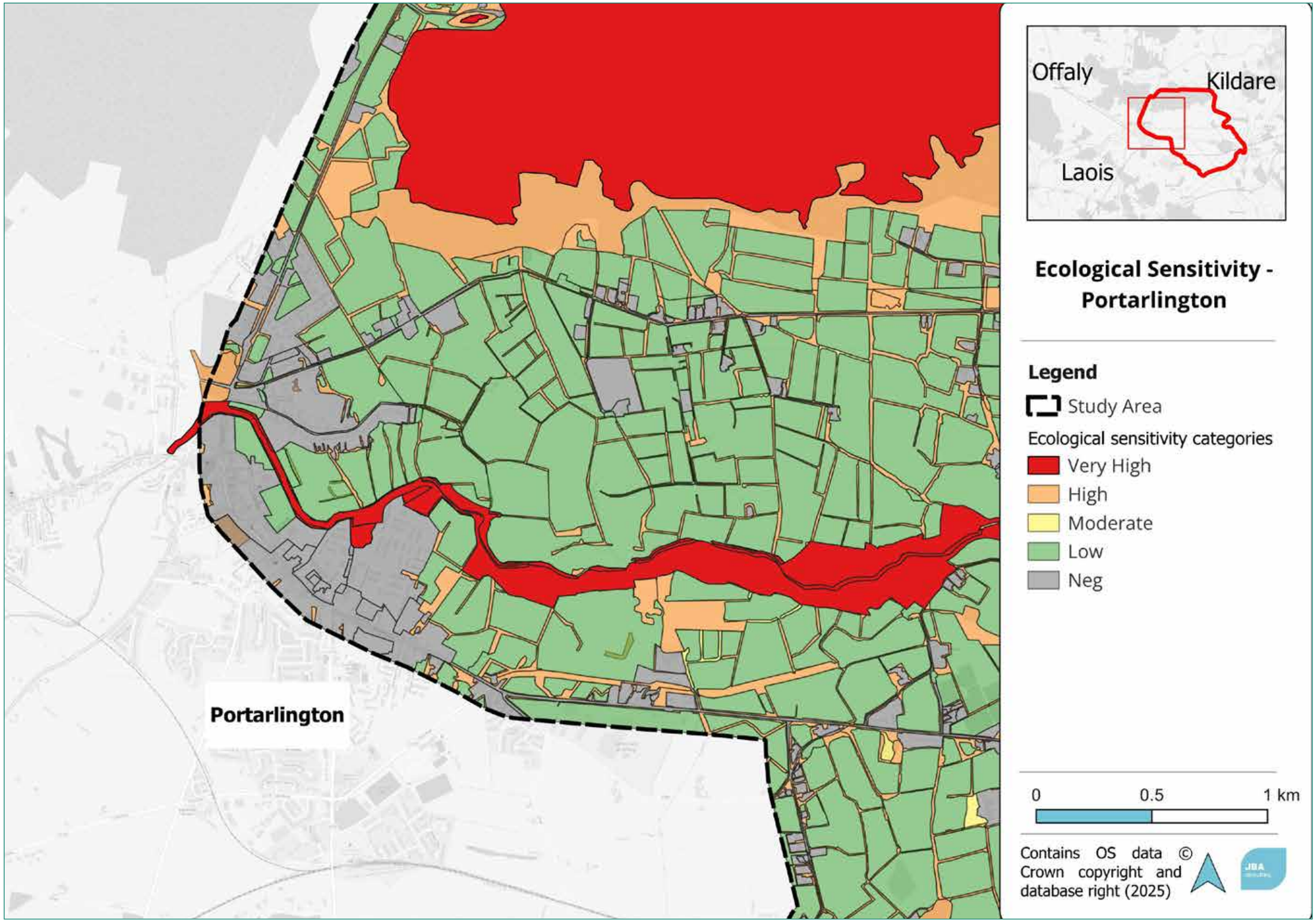


Figure 5-31 Ecological sensitivity map of the west of the study area near Portarlington

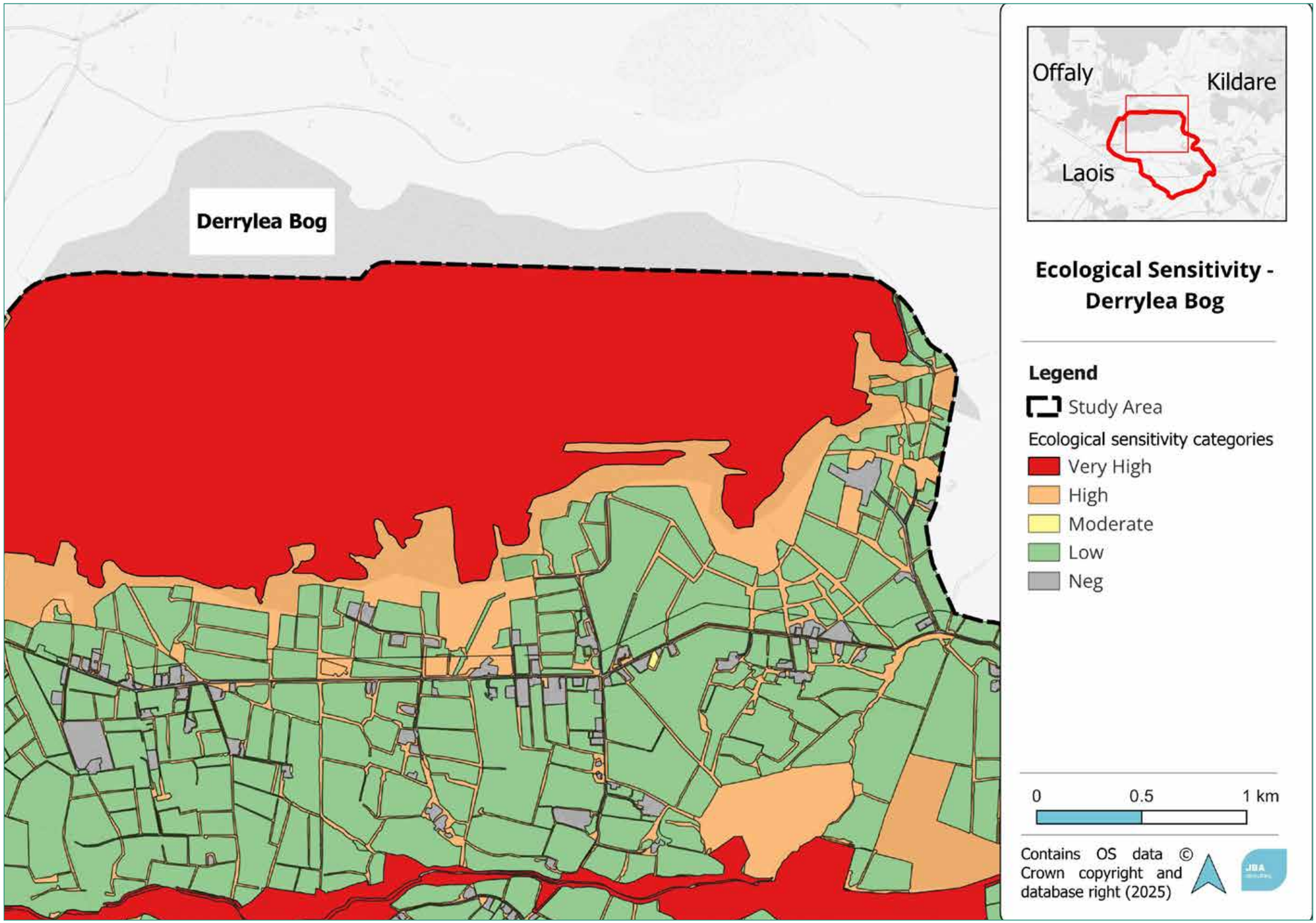


Figure 5-32 Ecological sensitivity map of north of the study area around Derrylea Bog

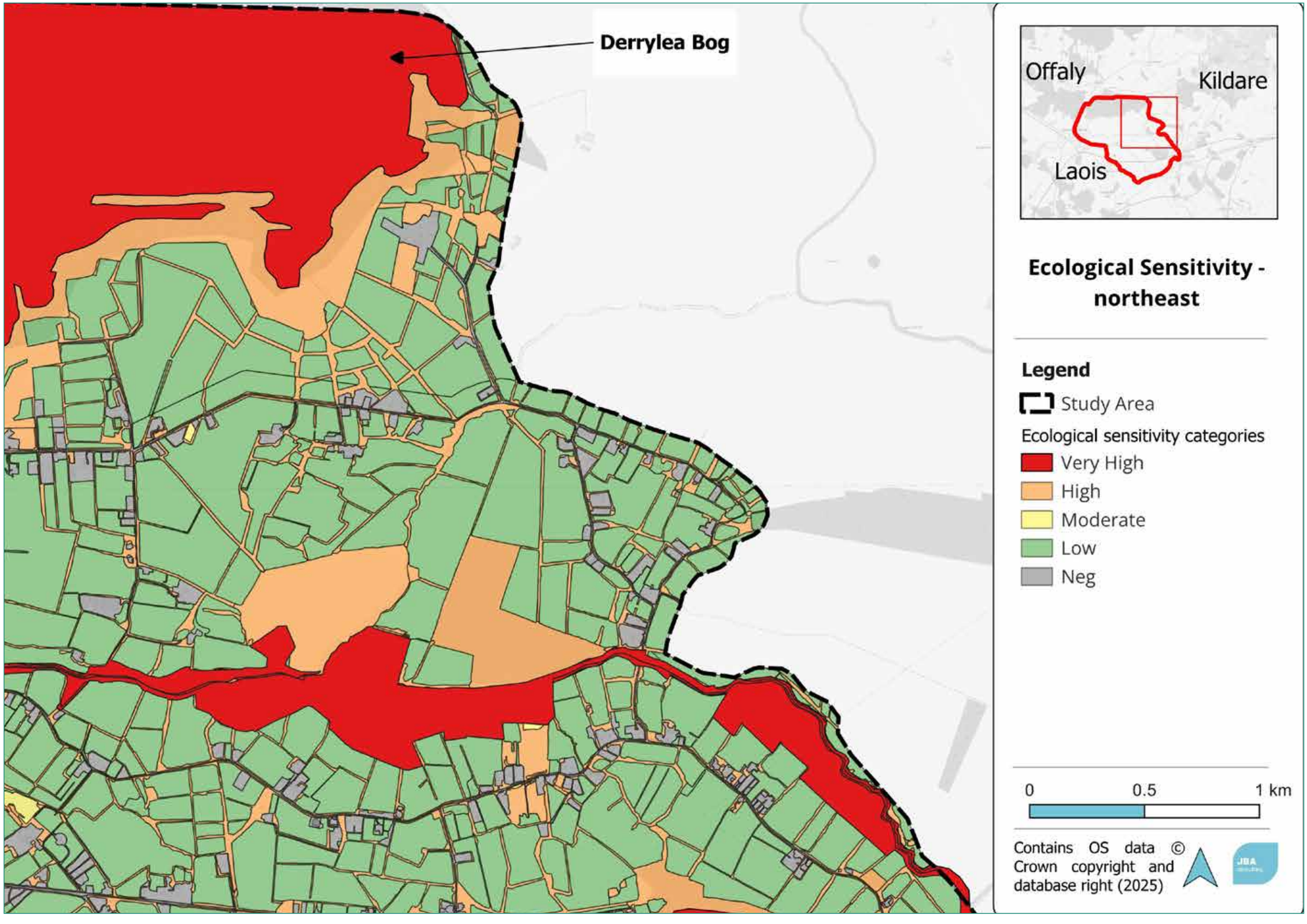


Figure 5-33 Ecological sensitivity map of the northeast of the study area

A Relevant Policy and Legislation

The legislation discussed below is intended as a guide only and does not replace formal legal advice.

A.1 Relevant Policy and Legislation

The National Biodiversity Action Plan 2023-2023' (NPWS, 2024) sets out actions through which a range of government, civil and private sectors will undertake to achieve Ireland's 'vision for Biodiversity' and has been developed in response to the Earth Summit, held in Rio de Janeiro in 1992 (UN Convention on Biological Diversity) and subsequent EU and International biodiversity strategies and policies.

As part of the action plan process Local Authorities (LA) must produce Biodiversity Action Plans (BAP). BAPs highlight local biodiversity issues and set out a series of objectives and action plans for the conservation of priority species and habitats where they occur in each district or county

A.2 Relevant Policy and Legislation

A.2.1 Statutory Designated Nature Conservation Sites

Sites with statutory designations receive varying degrees of legal protection under Irish statute (i.e. Wildlife Act 1976 and Wildlife (Amendment) Act (2000) and European Directives (i.e. the EC Birds Directive (2009/147/EC) and EC Habitats Directive (92/43/EC). The EU directives were transposed into Irish national law and subsequent amendments were revised and consolidated in the European Communities (Birds and Natural Habitats) Regulations 2011 and Irish Statutory Instrument 477/2011.

There are a number of statutory designations used for sites of high nature conservation value in Ireland, which are applied depending upon the importance of the site in a local, regional, national, or international context. These include:

National

- Natural Heritage Area (NHA)
- Wildfowl Sanctuary
- Statutory Nature Reserve
- Refuge for Fauna

European

- Special Protection Area (SPA)
- Special Areas of Conservation (SAC)

International

- UNESCO Biosphere Reserve
- Ramsar Convention Site
- National Park (Category II) Site

A.2.2 Non-Statutory Designations

Non-statutory sites are afforded no statutory legal protection but are normally recognised by local planning authorities and statutory agencies as being of local nature conservation value. A proposed National Heritage Area (pNHA) is an area deemed to be of special interest containing important wildlife habitat and often containing rare or threatened species. They may also be selected on the basis of geology or geomorphology.

A.2.3 Protected and Notable Species

A number of species are protected under Irish and international legislation. In Ireland, primary protection is provided under the 1976 Wildlife Act and Wildlife (Amendment) Acts 2000 & 2010 and revision 2018. Species of European importance receive additional protection in Ireland under the Birds and Natural Habitats Regulations 2011.

The Flora (Protection) Order 2015 makes it illegal to cut, uproot or damage a listed species in any way. It is illegal to alter, damage or interfere in any way with their habitats.

A.2.4 Birds

Almost all resident wild birds are protected under the 1976 Wildlife Act (and amendments). This makes it an offence to:

- Intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built;
- Take, destroy or possess the egg of any wild bird

A.2.5 Badger

Badgers are protected under the 1976 Wildlife Act (and amendments), and it is illegal to intentionally kill, capture, injure or ill-threat any Badger. It is also an offence to obstruct, destroy or damage a Badger sett or disturb Badgers within a sett. Disturbance is defined, for development purposes, as any activity that could damage a sett or be a greater than what Badgers commonly tolerate.

A.2.6 Bats

All Irish bat species are European Protected Species (EPS), protected under the Wildlife Act (and amendments) and the Conservation of Habitat and Species Regulations 2017 (as amended). This makes it an offence to:

- Deliberately capture, injure or kill a bat,
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats,
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time),
- Intentionally or recklessly obstruct access to any bat roost,
- It is also an offence to obstruct access to any bat roost, or to disturb a bat using such a place. Any identified roost(s) are, therefore, protected and any potentially disturbing or destructive works affecting a roost site will require a European Protected Species Licence (EPSL) from Natural England to avoid committing an offence

A.2.7 Otter

The European Otter is an EPS protected under the Conservation of Habitats and Species Regulations 2017 (as amended), making it an offence to:

- Deliberately capture, injure or kill and Otter,
- Deliberately disturb an Otter such as to affect local populations or breeding success, damage or destroy an Otter holt,
- Possess or transport an Otter or any part of an Otter, sell or exchange an Otter.

Otters also receive protection under the Wildlife Act (and amendments), this makes it an offence to:

- Intentionally or recklessly disturb any Otter whilst within a holt, or
- Intentionally or recklessly obstruct access to a holt.

A.2.8 Reptiles and Amphibians

Common Frog, Natterjack Toad, Smooth Newt, and Common Lizard are all protected under the Wildlife Act 1976 (and amendments).

A.2.9 Invasive Non-native Species

Certain invasive non-native animals and plants are listed under the Third Schedule of S.I. No. 477/2011 - European Communities (Birds and Natural Habitats) Regulations 2011. This makes it an offence to:

- Release, plant them in the wild, or
- Cause them to disperse, spread or otherwise cause them to grow.

If these species occur on a site proposed for development or other work which may disturb the ground, control of these species is likely to be required.

European Council's Regulation on the prevention and management of the introduction and spread of invasive alien species [1143/2014] sets out to prevent, minimise and mitigate the adverse impacts of the introduction and spread, both intentional and unintentional, of invasive alien species on biodiversity and the related ecosystem services as well as on human health and the economy.

A.2.10 Fisheries Legislation

The primary legislation governing Inland Fisheries Sector are the Fisheries Consolidation Act 1959 (No. 14 of 1959) and the Inland Fisheries Act 2010 (No. 10 of 2010).

Fisheries Consolidation Act, 1959-2007

The Fisheries Consolidation Act, 1959, has been amended and extended a number of times (1962, 1964, 1976, 1980, 1987, 1991, 1994, 1994, 1997 and 1999). The Fisheries Consolidation Act makes provisions for the licences for sea and freshwater fishing. Under the Fisheries Consolidation Act 1959, it is an offence to disturb the bed of a river. Section 171 of the Act creates the offence of throwing, emptying, permitting or casing to fall onto any waters deleterious matter. Deleterious matter is defined as any substance that is liable to injure fish; to damage their spawning grounds; or the food of any fish; or injure fish in their value as human food; or to impair the usefulness of the bed and soil of any waters as spawning grounds or other capacity to produce the food or fish.

Inland Fisheries Act 2010

An Act to establish Inland Fisheries Ireland and to define its functions, to dissolve the Central Fisheries Board and Regional Fisheries Boards, which had been established under the Fisheries Act, 1980 (amended 1999). The Inland Fisheries Act, 2010, also provides for other matters connected with the foregoing and to amend and extend the Fisheries Acts 1959 to 2007).

A.2.11 Salmonid Regulations

For the protection of fisheries, Ireland supports a network of Salmonid Waters designated by the Department of Environment, Heritage and Local Government under the EU Freshwater Fish Directive (78/659/EEC), S.I. No. 293/1988 - European Communities (Quality of Salmonid Waters) Regulations, 1988. These rivers, and a number of other non-designated waters, are important for salmonids (salmon and trout) and, accordingly, their water quality and fish habitat must be maintained (NRA, 2009). These rivers must ensure to meet certain water quality standards as outlined in Schedule 2 of the legislation.

The regulations list particular rivers/waters which are to be protected under these regulations.

B NBDC Records

B.1 Protected species recorded within 2km of the site within the last 15 years

Species name	Date of last record	Designation
Amphibians		
Common Frog *Rana temporaria*	3/21/2020	EU Habitats Directive >> Annex V Protected Species: Wildlife Acts
Birds		
Barn Owl *Tyto alba*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Red List
Barn Swallow *Hirundo rustica*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Amber List
Black-headed Gull *Larus ridibundus*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Amber List
Common Coot *Fulica atra*	12/31/2011	Protected Species: Wildlife Acts EU Birds Directive >> Annex II, III Birds of Conservation Concern - Amber List
Common Kestrel *Falco tinnunculus*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Red List
Common Kingfisher *Alcedo atthis*	8/31/2023	Protected Species: Wildlife Acts EU Birds Directive >> Annex I Birds of Conservation Concern - Amber List
Common Linnet *Carduelis cannabina*	12/27/2020	Protected Species: Wildlife Acts Birds of Conservation Concern - Amber List
Common Redshank *Tringa totanus*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Red List
Common Sandpiper *Actitis hypoleucos*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Amber List
Common Snipe *Gallinago gallinago*	12/31/2011	Protected Species: Wildlife Acts EU Birds Directive >> Annex II, III Birds of Conservation Concern - Red List
Common Starling *Sturnus vulgaris*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Amber List
Common Swift *Apus apus*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Red List
Common Wood Pigeon *Columba palumbus*	12/31/2011	Protected Species: Wildlife Acts EU Birds Directive >> Annex II, III
Eurasian Curlew *Numenius arquata*	12/31/2011	Protected Species: Wildlife Acts EU Birds Directive >> Annex II Birds of Conservation Concern - Red List
Eurasian Teal *Anas crecca*	12/31/2011	Protected Species: Wildlife Acts EU Birds Directive >> Annex II, III Birds of Conservation Concern - Amber List
Eurasian Tree Sparrow *Passer montanus*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Amber List
Eurasian Wigeon *Anas penelope*	12/31/2011	Protected Species: Wildlife Acts EU Birds Directive >> Annex II, III Birds of Conservation Concern - Amber List
Eurasian Woodcock *Scolopax rusticola*	12/31/2011	Protected Species: Wildlife Acts EU Birds Directive >> Annex II, III Birds of Conservation Concern - Amber List
European Golden Plover *Pluvialis apricaria*	12/31/2011	Protected Species: Wildlife Acts EU Birds Directive >> Annex I, II, III Birds of Conservation Concern - Red List
European Greenfinch *Carduelis chloris*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Amber List
Goldcrest *Regulus regulus*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Amber List
Great Cormorant *Phalacrocorax carbo*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Amber List

Continues overleaf

Species name	Date of last record	Designation
Grey Wagtail *Motacilla cinerea*	9/23/2022	Protected Species: Wildlife Acts Birds of Conservation Concern - Red List
Hen Harrier *Circus cyaneus*	12/31/2011	Protected Species: Wildlife Acts EU Birds Directive >> Annex I Birds of Conservation Concern - Amber List
House Martin *Delichon urbicum*	7/25/2021	Protected Species: Wildlife Acts Birds of Conservation Concern - Amber List
House Sparrow *Passer domesticus*	12/31/2011	Protected Species: Wildlife Birds of Conservation Concern - Amber List
Lesser Black-backed Gull *Larus fuscus*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Amber List
Little Egret *Egretta garzetta*	3/2/2022	Protected Species: Wildlife Acts EU Birds Directive >> Annex I
Little Grebe *Tachybaptus ruficollis*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Amber List
Mallard *Anas platyrhynchos*	12/31/2020	Protected Species: Wildlife Acts EU Birds Directive >> Annex II, III
Meadow Pipit *Anthus pratensis*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Red List
Merlin *Falco columbarius*	12/31/2011	Protected Species: Wildlife Acts EU Birds Directive >> Annex I Birds of Conservation Concern - Amber List
Mute Swan *Cygnus olor*	6/16/2022	Protected Species: Wildlife Acts Birds of Conservation Concern - Amber List
Northern Lapwing *Vanellus vanellus*	12/31/2011	Protected Species: Wildlife Acts EU Birds Directive >> Annex II Birds of Conservation Concern - Red List
Peregrine Falcon *Falco peregrinus*	6/22/2017	Protected Species: Wildlife Acts EU Birds Directive >> Annex
Redwing *Turdus iliacus*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Red List
Rock Pigeon *Columba livia*	12/31/2011	Protected Species: Wildlife Acts EU Birds Directive >> Annex II
Sand Martin *Riparia riparia*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Amber List
SkyLark *Alauda arvensis*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Amber List
Spotted Flycatcher *Muscicapa striata*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Amber List
Stock Pigeon *Columba oenas*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Red List
Tufted Duck *Aythya fuligula*	12/31/2011	Protected Species: Wildlife Acts EU Birds Directive >> Annex II, III Birds of Conservation Concern - Amber List
Tundra Swan *Cygnus columbianus*	2/29/1984	Protected Species: Wildlife Acts EU Birds Directive >> Annex I Birds of Conservation Concern - Red List
Water Rail *Rallus aquaticus*	12/31/2011	Protected Species: Wildlife Acts
Whinchat *Saxicola rubetra*	12/31/2011	Protected Species: Wildlife Acts Birds of Conservation Concern - Red List
Whooper Swan *Cygnus cygnus*	12/31/2011	Protected Species: Wildlife Acts EU Birds Directive >> Annex I Birds of Conservation Concern - Amber List
Willow Warbler *Phylloscopus trochilus*	12/31/2011	Birds of Conservation Concern - Amber List
Yellowhammer *Emberiza citrinella*	7/29/2019	Protected Species: Wildlife Acts Birds of Conservation Concern - Red List
Invertebrates		
Freshwater White-clawed Crayfish *Austropotamobius pallipes*	7/25/2017	EU Habitats Directive >> Annex II, V Protected Species: Wildlife Acts
Marsh Fritillary *Euphydryas aurinia*	12/31/2010	EU Habitats Directive >> Annex II Threatened Species: Vulnerable
Large Red Tailed Bumble Bee *Bombus (Melanobombus) lapidarius*	8/26/2024	Threatened Species: Near threatened

Continues overleaf

Species name	Date of last record	Designation
Mosses		
Large White-moss *Leucobryum glaucum*	11/28/2011	Protected Species: EU Habitats Directive >> Annex IV Threatened Species: Least concern
Reptiles		
Common Lizard *Zootoca vivipara*	9/27/2018	Protected Species: Wildlife Acts
Terrestrial Mammals		
Brown Long-eared Bat *Plecotus auritus*	8/22/2021	Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
Common Pipistrelle *Pipistrellus pipistrellus sensu stricto*	7/13/2022	Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
Daubenton's Bat *Myotis daubentonii*	8/21/2021	Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
Eurasian Badger *Meles meles*	2/3/2016	Protected Species: Wildlife Acts
Eurasian Red Squirrel *Sciurus vulgaris*	9/5/2015	Protected Species: Wildlife Acts
European Otter *Lutra lutra*	8/30/2016	Protected Species: EU Habitats Directive >> Annex II, IV Protected Species: Wildlife Acts
Irish Hare *Lepus timidus* subsp. *hibernicus*	2/21/2006	Protected Species: Wildlife Acts
Lesser Noctule *Nyctalus leisleri*	7/31/2022	Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
Nathusius's Pipistrelle *Pipistrellus nathusii*	7/31/2022	Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
Natterer's Bat *Myotis nattereri*	8/21/2021	Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
Pine Marten *Martes martes*	8/13/2015	Protected Species: EU Habitats Directive >> Annex V Protected Species: Wildlife Acts
Pipistrelle *Pipistrellus pipistrellus sensu lato*	7/31/2022	Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
Soprano Pipistrelle *Pipistrellus pygmaeus*	7/13/2022	Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
West European Hedgehog *Erinaceus europaeus*	5/11/2022	Protected Species: Wildlife Acts
Whiskered Bat *Myotis mystacinus*	7/13/2022	Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts

B.2 Invasive species recorded within 2km of site within the last 15 years

Species name	Date of last record	Designation
Flora		
Giant Hogweed *Heracleum mantegazzianum*	6/16/2022	High Impact Invasive Species Regulation S.I. 477 (Ireland)
Indian Balsam *Impatiens glandulifera*	7/28/2022	High Impact Invasive Species Regulation S.I. 477 (Ireland)
Sycamore *Acer pseudoplatanus*	12/31/2010	Medium Impact Invasive Species
Mollusc		
Jenkins' Spire Snail *Potamopyrgus antipodarum*	7/25/2017	Medium Impact Invasive Species
Terrestrial mammals		
Eastern Grey Squirrel *Sciurus carolinensis*	12/31/2011	High Impact Invasive Species EU Regulation No. 1143/2014 Regulation S.I. 477 (Ireland)
European Rabbit *Oryctolagus cuniculus*	5/5/2017	Medium Impact Invasive Species

6.0 WATERBODIES, SOILS & GEOLOGY

6.1 Waterbodies

6.1.1 Surface Water

The River Barrow stretches across the study area, flowing in a westerly direction from Portarlington to Monasterevin. The River Barrow is one of the The Three Sisters, along with the River Nore and River Suir, and rises approx. 41.5km upstream of Portarlington. It originates in the Slieve Bloom Mountains in Co. Laois. From there, it flows northeast, by-passing Mountmellick and joining with the Owenass and the Triogue rivers. Other tributaries include the Glenlahan River and the Figile. The river ultimately reaches the sea at Waterford Harbour, where it flows into the Celtic Sea. It primarily flows through agricultural land, with some sections passing through urban areas.

Additionally, the Barrow Line of the Grand Canal flows in a southerly direction past Monasterevin. A small section of the Barrow Line crosses into the eastern portion of the study area, flowing over the River Barrow via an aqueduct. The Barrow Line and the River Barrow travel parallel to each other in a southerly direction for approx. 23.6km before converging in Athy. The Barrow Line diverges from the Grand Canal west of Robertstown, Co. Kildare. The Grand Canal provides connections to Dublin and Shannon and is managed by Waterways Ireland.

The River Figile converges with the River Barrow along the perimeter of the study area, just north of Monasterevin town. The Figile rises approx. 39km upstream of the study area, within the Timahoe Bog in northwest Kildare. Additionally, there are potentially numerous small streams and drainage ditches scattered throughout the study area, particularly along field boundaries and other natural divisions.

6.1.2 Groundwater

The main WFD groundwater body within the study area is Cushina (European Code: IE_SE_G_048). The Cushina groundwater body has a 'Good' WFD status and is currently 'Not at Risk' of not meeting its WFD objectives, according to the EPA.

A small north-western section of the study area is located within the Industrial Facility (P0274-01) groundwater body (European Code: IE_SE_G_005). This groundwater body has a 'Poor' WFD status and is 'At Risk' of failing to meets its WFD objectives.

The Bagenalstown Upper groundwater body (European Code: IE_SE_G_153) borders the east and west boundaries of the study area, with a small portion of the study area situated within this groundwater body on both sides. The Bagenalstown Upper groundwater body has a 'Good' WFD status and is 'Not at Risk' failing to meet its WFD objectives.

Groundwater vulnerability varies across the study area. The south-west section is located within areas of 'Extreme' vulnerability, including areas consisting of 'Rock at or near Surface or Karst'.

6.1.3 Water Framework Directive

The study area is located within the Water Framework Directive (WFD) Barrow catchment (14). There are five WFD sub-catchments situated within the study area: the Barrow_SC_020 in the south-west, the Barrow_SC_030 in the north-west, the Barrow_SC_040 in the north-east, the Barrow_SC_050 in the south-east, and a small section of the Barrow_SC_060 in the east of the study area (Figure 6-1). The Barrow_SC_050 subcatchment encompasses the largest area. The WFD is discussed in Chapter 11 of the Offaly CDP, Chapter 10 of the Laois CDP and Chapter 6 of the Kildare CDP.

There are six WFD river waterbodies within the study area and one artificial waterbody: BARROW_070, BARROW_080, BARROW_090, BARROW_100, BARROW_110, FIGILE_80 and the Grand Canal Barrow Line (Barrow). These are shown in Figure 6-1.

The BARROW_070 is a 'Poor' status waterbody under the WFD reporting period for 2016-2021 and is 'At Risk' of failing to meet its 2027 WFD objectives. Agriculture is a significant pressure acting on this waterbody.

The BARROW_080 has a 'Poor' status and is 'At Risk' of failing to meet WFD objectives. Pressures acting on this waterbody include Urban Waste Water and Urban Runoff.

The BARROW_090 has a 'Poor' status and is 'At Risk' of failing to meet WFD objectives. Pressures acting on this waterbody include Urban Runoff, Hydromorphology and Invasive Species.

The BARROW_100 has a 'Moderate' status and is 'At Risk' of failing to meet its WFD objectives. Pressures acting on this waterbody include Urban Runoff, Hydromorphology and Urban Waste Water.

The BARROW_110 has a 'Good' status and is 'Not at Risk' of failing to meet its WFD objectives.

The FIGILE_080 has a 'Good' status and its risk status is currently under review.

The Grand Canal Barrow Line (Barrow) has a 'Good' status and its risk status is currently under review.

6.1.4 Potential Constraints and Opportunities

Constraints on the study area related to waterbodies are the potential construction impacts on surface water and groundwater from runoff of contaminated water and accidental spillage, and possible release and/or mobilisation of nutrients and suspended solids. Any impacts of the study area on hydromorphology of the existing rivers will need to be considered. Also of relevance are existing pressures on water quality, namely hyrology (culverts and artificial channels at various points throughout the study area), and urban runoff entering the watercourses.

The addition of hard surfaces associated with construction activities as part of future proposals within the study area would need to be mitigated with sustainable drainage systems. This is to prevent any potential impacts to flow paths or drainage regimes. Adverse effects from potential construction related activities such as realignment of watercourses, bank works, erosion and dredging may lead to deterioration of the quality of the surrounding waterbodies.

There is the potential for the improvement in local water quality, with the addition of planting trees and remediation works included in the Study. Improving water quality is an objective of the Laois, Offaly and Kildare CDPs and is also in line with the National Planning Framework.

6.2.1 Subsoils, Geological Bedrock, and Aquifer Vulnerability

Soils and geology have been assessed within a 2km buffer of the study area. This is in line with guidance from the Institute of Geologists of Ireland (IGI) 2013 'Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements'.

All data on subsoils and geological bedrock was obtained through the Geological Survey Ireland (GSI) website and its interactive mapping section (GSI, 2021).

There are several subsoils present within the 2km study area (Figure 6-2) and listed as follows:

- Alluvial sediments
- Basic Esker sands and gravels
- Cutover peat
- Limestone sands and gravels (Carboniferous)
- Karstified limestone bedrock at surface
- Lacustrine sediments
- Made ground
- Marl (Shell)
- Bedrock at surface

- Limestone till (Carboniferous)

Bedrock types present within the study area are shown in Figure 6-3 and listed as follows:

- Crinoidal wackestone/packstone limestone
- Dark grey to black limestone and shale
- Dark muddy limestone and shale
- Massive unbedded lime-mudstone
- Nodular and muddy limestone and shale
- Oolitic limestone
- Thick-bedded limestone, locally peloidal

Groundwater vulnerability is primarily 'Moderate' across the study area and 2km buffer, although it varies from 'Low' to 'Extreme' (Figure 6-4). The south-west section is located within areas of 'Extreme' vulnerability, including areas consisting of 'Rock at or near Surface or Karst'. In general, this indicates that there is a high possibility of groundwater contamination by human activities in this area.

The bedrock aquifer underlying the majority of the study area is Locally Important, which is moderately productive in local zones only. Additionally, there are two sections in the centre of the study area which are a Karstified Locallly Important Aquifer, and two small sections on both the east and the west perimeters which are Regionally Important Aquifer that is Karstified (Figure 6-5).

Group water schemes, public supply source protection areas and groundwater zones of contribution within and surrounding the 2km buffer zone of the study area are shown in Figure 6-6. The Monasterevin Public Water Supply is located approx. 1.5km east of the study area and the Portarlington, La Bergerie Zone of Contribution is located approx. 1.3km to the southwest.

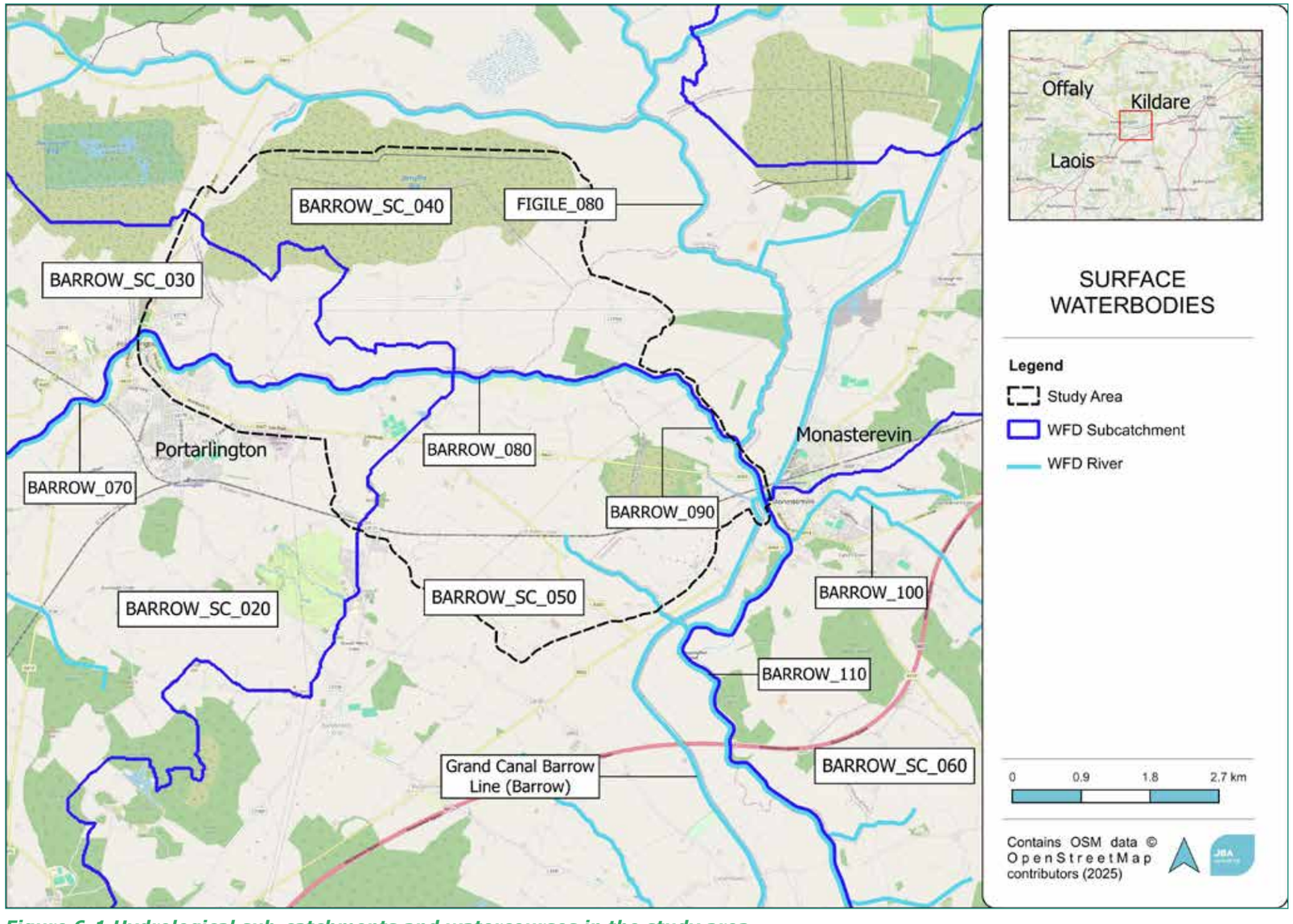


Figure 6-1 Hydrological sub-catchments and watercourses in the study area

6.2.2 Contaminated Land

There are no Seveso establishments, former or active landfills, or active quarry sites in the vicinity of the proposed development. It is possible that smaller-scale sources of contamination are present in the study area. The potential for this has been assessed in later stages of the study.

6.2.3 Potential Constraints

Constraints relating to soils and geology on the study area pertain to changes in groundwater quality or levels, which could lead to adverse impacts on the locally and regionally important bedrock aquifer. Heavy machinery used during the construction period could cause compaction of the soil, and in areas of high and extreme aquifer vulnerability, a pollution event could be spread to the surroundings and could be difficult to contain. Currently unknown sources of contamination may be present in areas which are to be developed, which could act as a constraint at the planning and construction stages of a project.

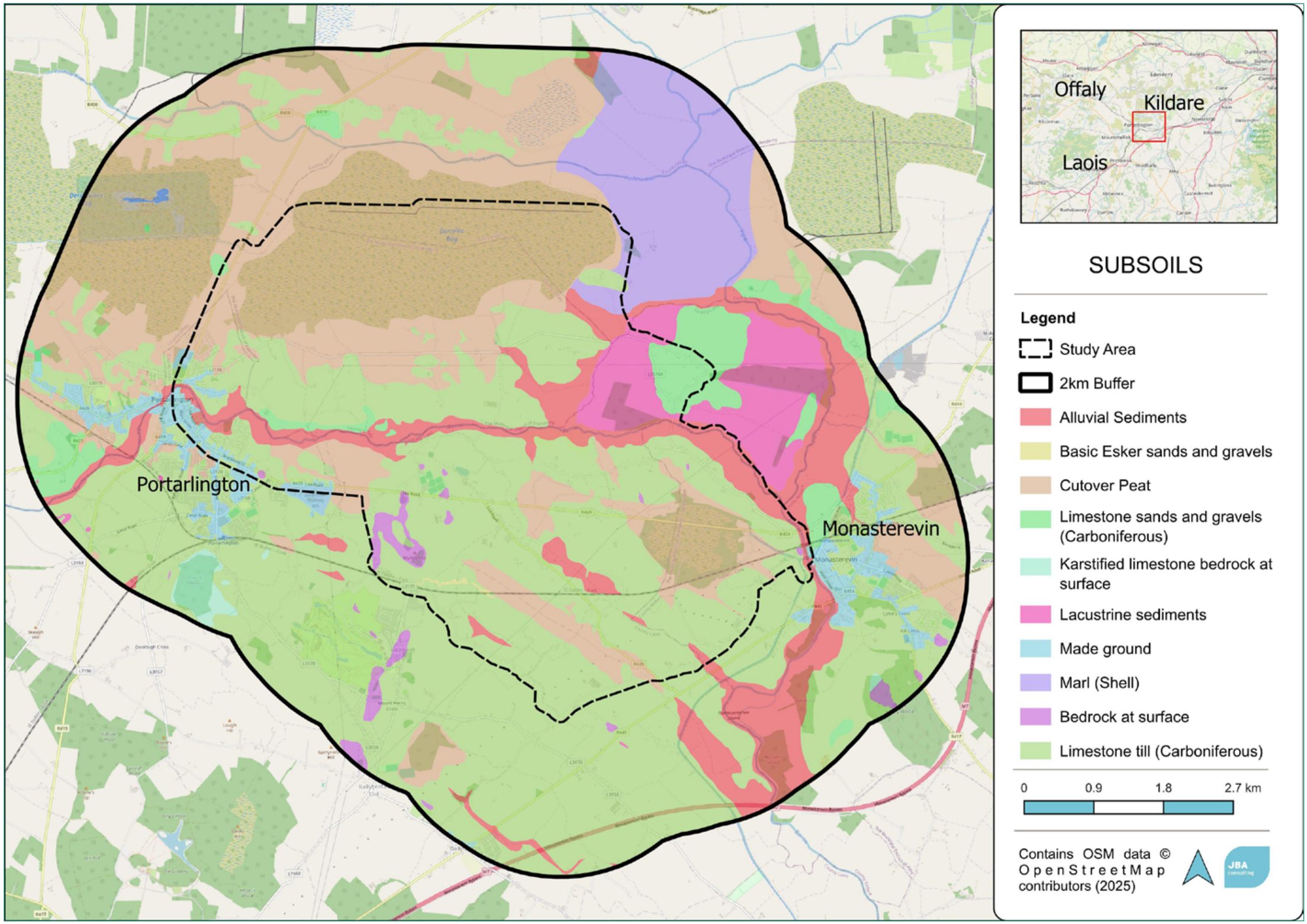


Figure 6-2 Subsoils in the study area

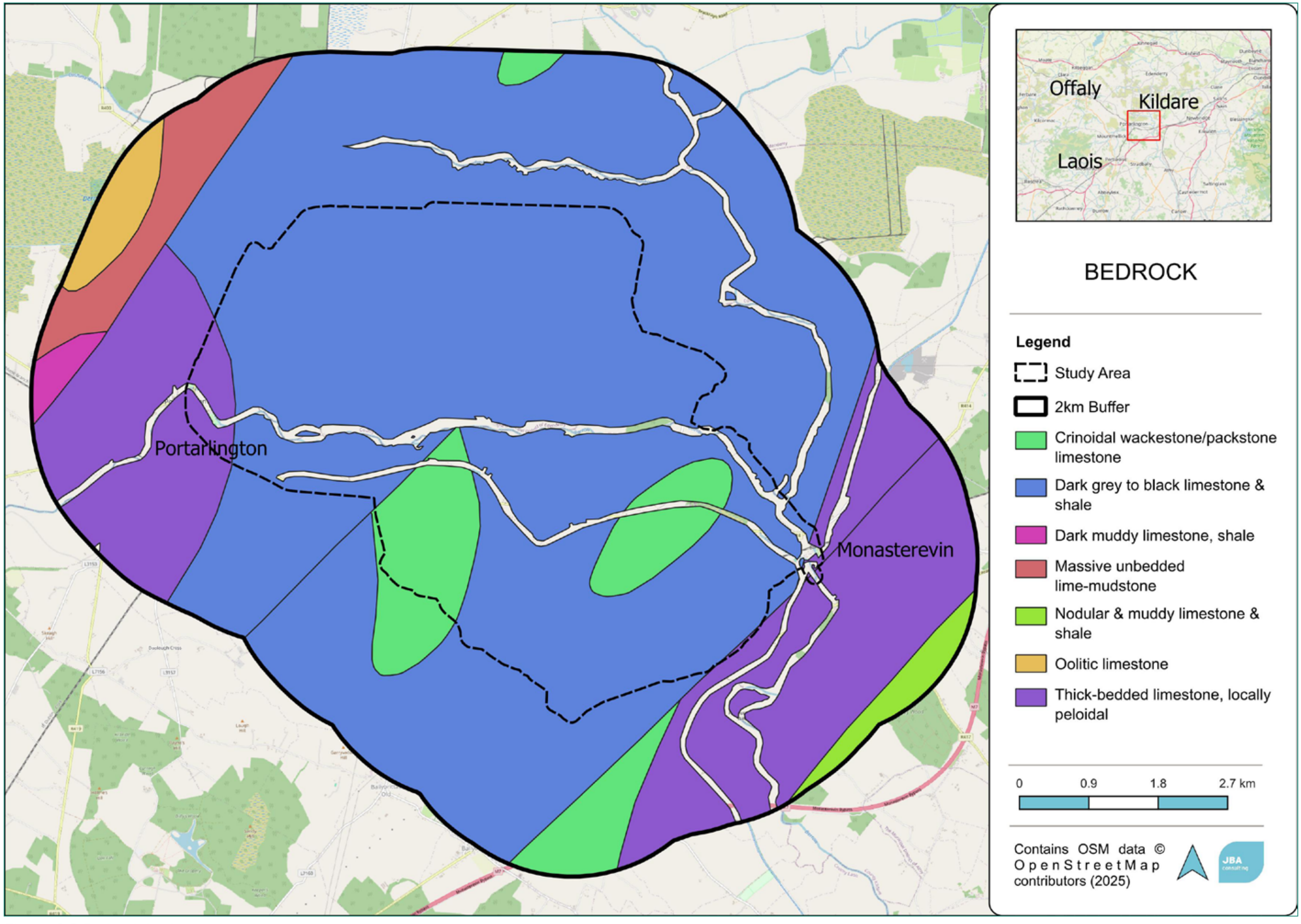


Figure 6-3 Bedrock in the study area

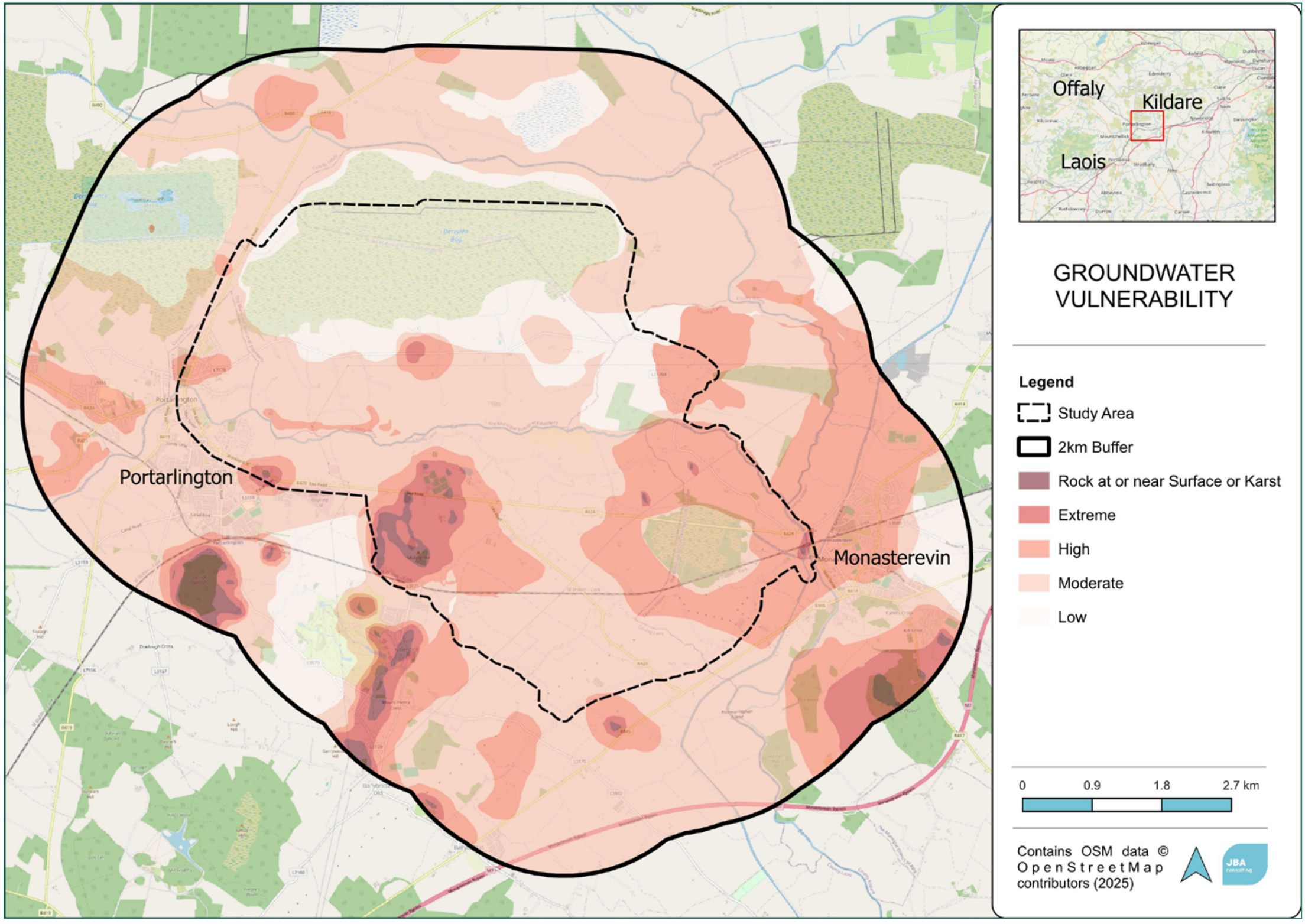


Figure 6-4 Groundwater vulnerability in the study area

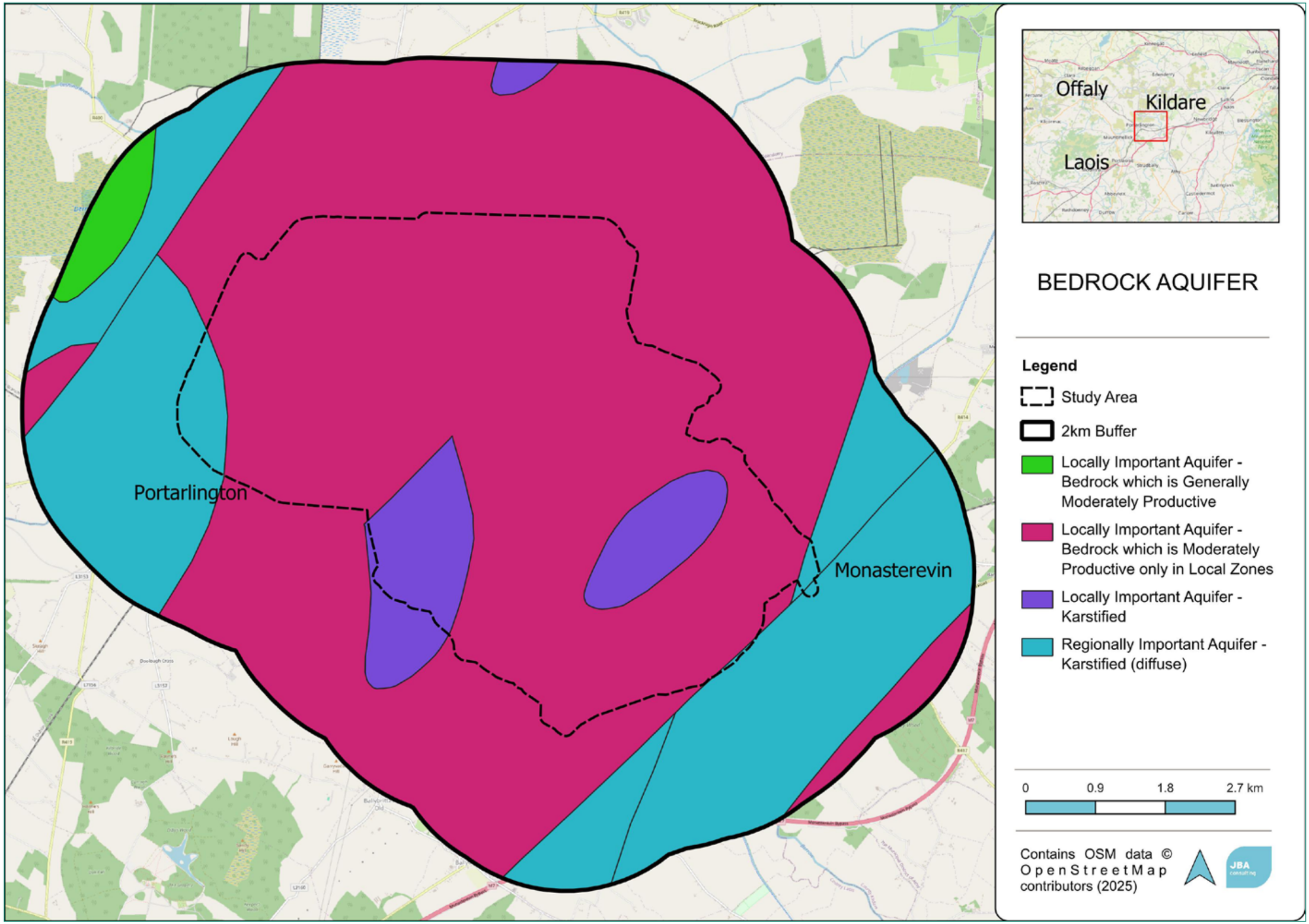


Figure 6-5 Bedrock Aquifer within 2km of the study area

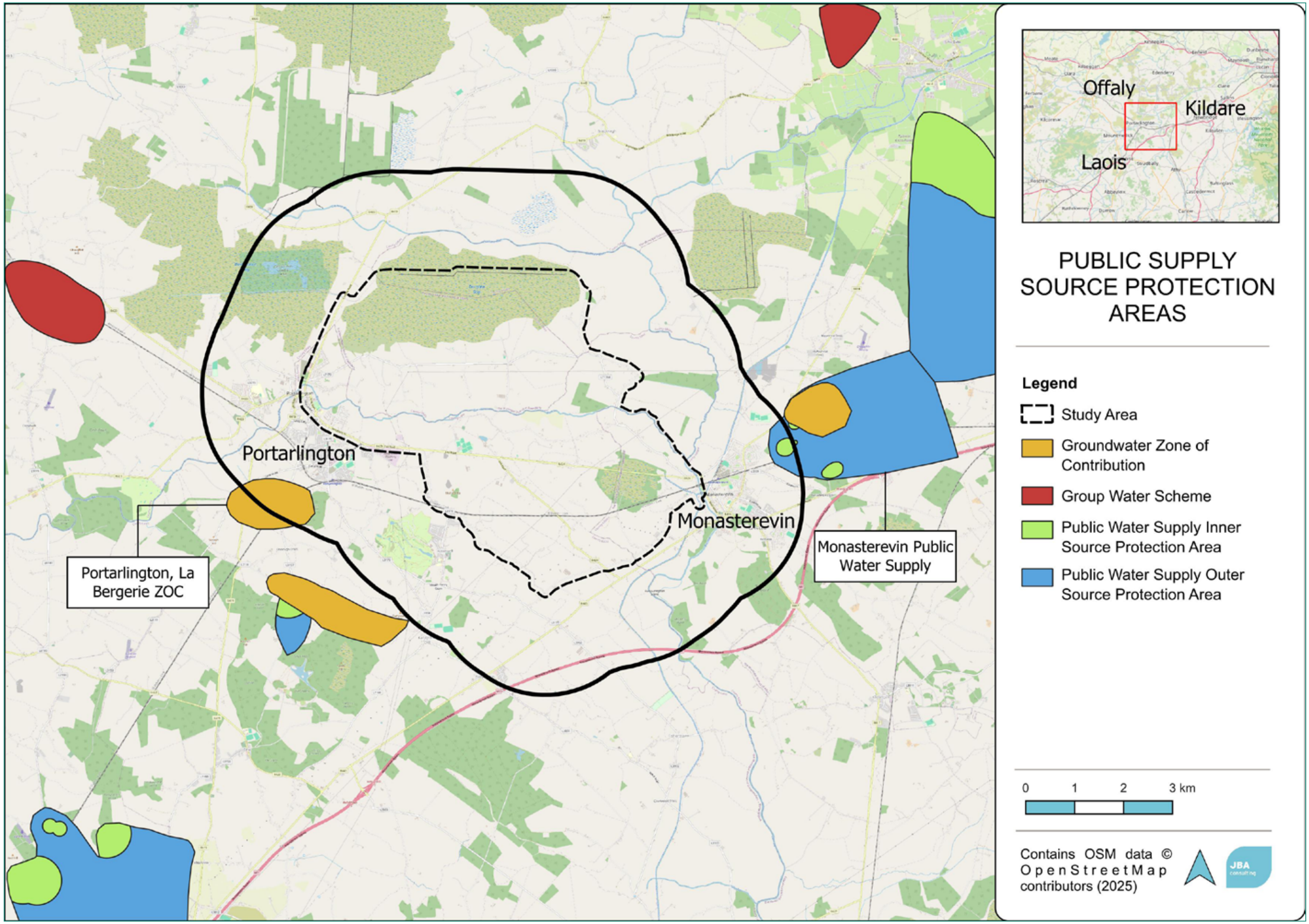


Figure 6-6 Public supply source protection areas within the vicinity of the study area

7.0 DRAINAGE, FLOOD RISK, STRUCTURES & TRAFFIC

7.1 Site Topography

An assessment of the general topography surrounding the study area was carried out. The topography is key to understanding the ground levels along any identified route / corridor and any possible surface water overland flow paths. The topography of the existing lands play a key role in the Feasibility Study, including the upcoming Options Stage.

TII Rural Cycleway Design(Offline and Greenway) Section 4.5.3.2 states "*The overall gradient along a cycle route is an important design consideration. Comfort and attractiveness of a cycleway will be greatly increased if the route follows a shallow gradient.*"

The Irish Wheelchair Associations 'Great Outdoors Access Guidelines' Section 4 for Trails, Greenway & Public Parks shall also be referenced.

The general topography along the study area is shown on Figure 7-1. The study area extends across a predominantly low-lying and gently undulating landscape. Ground levels generally range from approximately 60 metres to 100 metres above ordnance datum (AOD), with the lowest elevations occurring along the River Barrow and its associated floodplain in the vicinity of Monasterevin. The terrain rises gradually westwards, forming a series of shallow ridges and drumlin-like landforms that characterise the central and southern portions of the study corridor. While the overall gradient across the study area is gentle, localised elevation changes are clearly defined by contour lines and may influence route alignment decisions, particularly where gradients may exceed accessible thresholds for shared-use paths.

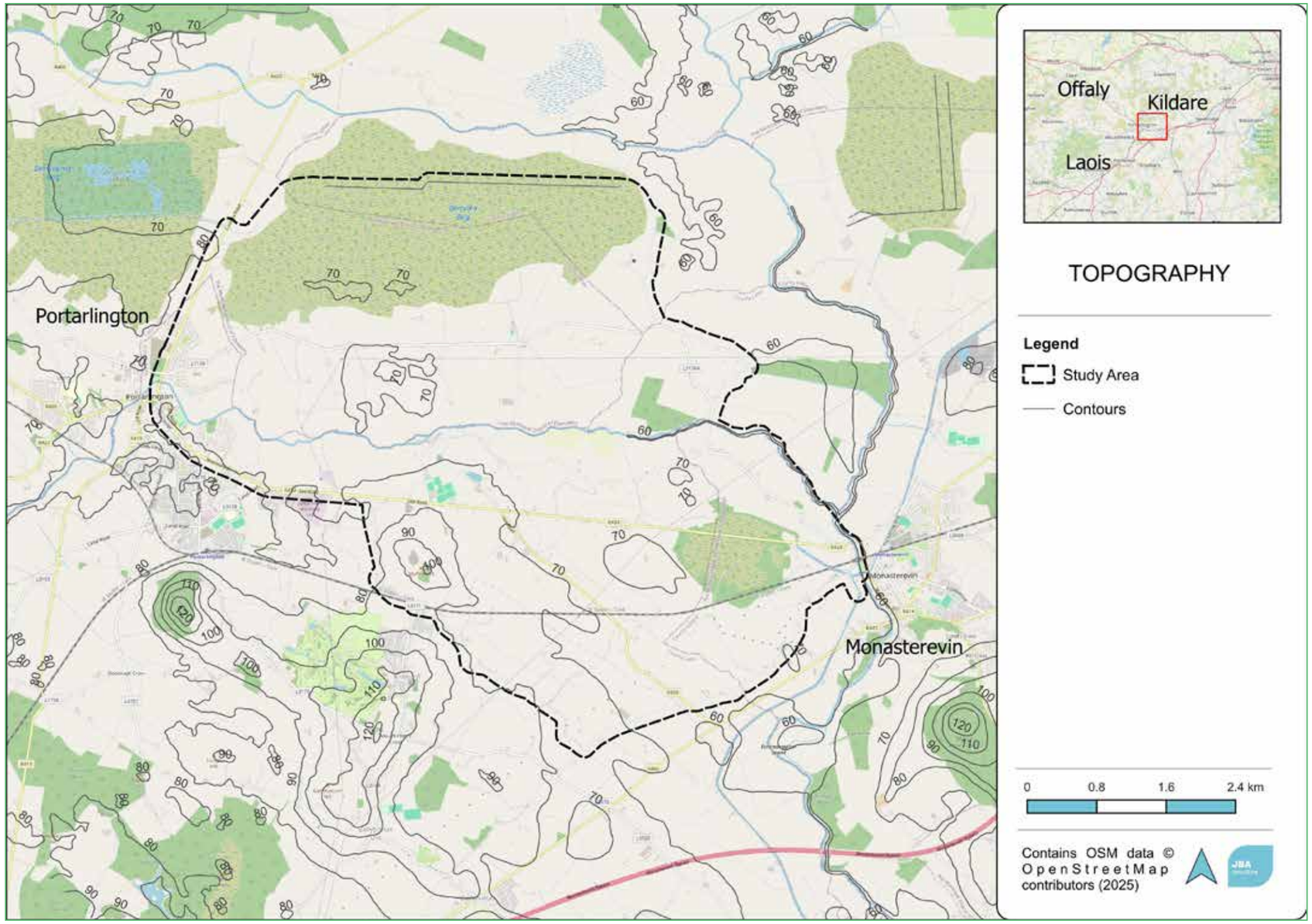


Figure 7-1 Study Area general topography

The northern part of the corridor, particularly around Derrygrogan Bog, is relatively flat and open, whereas the southern part includes more pronounced topographical variation, with several enclosed hills reaching elevations close to or exceeding 100 metres AOD. These areas are often interspersed with woodland cover and agricultural land, resulting in a more visually complex landscape. The presence of multiple stream crossings, minor ridgelines, and enclosed low points may present both opportunities and constraints in terms of drainage design, route legibility, and construction feasibility. Consideration should also be given to long-term maintenance and user comfort.

7.2 Drainage

At present the study area is mostly of rural setting, primarily consisting of agricultural lands adjacent to both the Corbally Canal, the River Liffey and the Transient Lands between. The existing general topography varies throughout the study area resulting in various natural and existing drainage techniques.

7.2.1 Existing Drainage

Ad-hoc field drains bound the fields within the study area varying in width and depth conveying surface water runoff from adjacent lands. With the lands being rural and agricultural in nature it is expected that land drains will convey surface runoff to these ad-hoc field drains.

Some manholes and outfalls were identified during the site visit however further investigation may be required to identify any existing drainage elements which may impact future design proposals. Existing surface water drainage networks are expected to traverse the study area outfalling to the River Barrow. Infiltration is taking place in low lying areas prone to surface water accumulation.

Given the nature of the study area, existing drainage network will only be utilised in areas where infiltration and attenuation isn't feasible.

Uisce Éireann records were requested and reviewed for possible existing drainage networks within the study area with none being identified at present.

7.2.2 Proposed Drainage

Kildare County Development Plan 2023 – 2029 doesn't specifically reference footway drainage in rural environments and their design, however the following will be considered – "*The Council will seek to ensure the sustainable management of surface water discharges through Sustainable Urban Drainage Systems (SuDS). SuDS is a nature-based solution to water management that aims to manage surface water as close as possible to its origin by replicating the natural characteristics of rainfall run-off from any site ensuring water is infiltrated or conveyed more slowly to the drainage system and ultimately to water courses via permeable paving, swales, green roofs, rainwater harvesting, detention basins, ponds, and wetlands*."

Future designs shall comply with the Kildare County Council Urban Drainage Systems Guidance Document "*This guide supports the delivery of the Kildare County Development Plan (2023-2029), the Kildare Strategic Flood Risk Assessment (2023) and is complementary to the CIRIA 2015 SuDS Manual (C753) and 'Nature-based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas Water Sensitive Urban Design Best Practice Interim Guidance Document (2023).*"

SuDS measures should be considered where any proposed work interferes with natural overland flow paths and infiltration. Where the route is located at the base of an elevated area a filter drain at the upstream end of the pathway would be a suitable method of intercepting this runoff and conveying it to the nearest watercourse/detention basin, drain or infiltrating it to ground if the conditions allow.

Detentions basins may be viable in areas where the banks are elevated between the adjacent lands and canal/river, these areas naturally act as a catchment of surface water runoff and utilise infiltration and evapotranspiration. This may also be the case in areas where the general topography slopes away from the receiving watercourse. Areas which are prone to waterlogging should be utilised as natural features along the route. These can be enhanced by further draining the footpath runoff towards these areas. Detention basins may also be utilised in areas with potential for public use, these areas will generally be relatively flat with reduced overland flow and more susceptible to accumulation of runoff, a detention basin would in turn attenuate this runoff whilst providing an attractive feature within the space.

TII Rural Cycleway Design (Offline and Greenway) Section 4.7 specifies "*Over-the-edge drainage is the preferred arrangement for a rural offline cycleway, where possible. Where over the edge drainage is used it is important to ensure that the surface water runoff flows off the cycleway towards the drainage ditch and does not pond. A suitable crossfall of between 1% and 3% should be provided on the cycleway pavement. Cycleway drainage shall be in accordance with Edge of Pavement Design (DN-DNG-03062) where applicable.*"

Given the rural setting, existing field drains may traverse the proposed route. Where this is the case, the open field drain may need to be culverted to allow any works to travel across it. The size and shape of the culvert shall not interrupt the existing flow in the drain.

7.2.3 Flood Risk

The Portarlington to Monasterevin corridor is dominated by the Rivers Barrow and Figile. The Barrow is the larger watercourse which drains an area of well over 3000km² and flows adjacent to significant raised bogs (Derryounce and Derrylea to the north). The Barrow rises in the Slieve Bloom Mountains in County Laois near the town of Mountmellick and flows in an easterly direction through Portarlington before turning south approximately 2km prior to Monasterevin. Upstream of Monasterevin, as the Barrow turns to the south, it is joined by the River Figile creating a floodplain of over 2km in width, before narrowing through a bottleneck in the town itself. Upstream of the confluence withe the River Figile the floodplain of the Barrow is narrower at around 400m. The Figile flows for about 30km and drains an area of around 600km², formed by the confluence of the Crabtree and Cushaling rivers near the border of County Kildare and County Offaly.

As the River Barrow passes through Portarlington town, out of bank flooding occurs due to insufficient channel capacity affecting significant amounts of houses and businesses. Receptors are also at risk at the downstream extent of the Blackstick Drain due to a back water effect from the River Barrow. Also situated within the floodplain are many social amenity sites, several roads including two regional roads and cultural heritage assets. The level of flood risk in Portarlington has been identified under the OPW CFRAM programme and this led to a Management Plan recommending a financially viable Flood Relief Scheme (FRS). The FRS has received funding and is in progress with preferred options now identified, the scheme is scheduled to be completed in circa 2028. The scheme will protect people, infrastructure and property, but will not extend outside of the town or impact the river corridor between Portarlington and Monasterevin. The corridor also hosts the vehicular route (the R424) and the main Dublin-Cork railway line. The railway is unimpacted by the floodplain but the R424 is vulnerable to flooding at the bridge crossing just upstream of Monasterevin located just after the confluence with the River Figile. Monasterevin itself is at relatively low risk from the River Barrow and as such has not been progressed for a large OPW Flood Relief Scheme. The principal risk to the settlement is from a small tributary of the Barrow approaching from the east through the town, it does not impact a significant amount of property or infrastructure. Monasterevin also hosts the route of the Barrow line of the Grand Canal which runs in a north east to south west pathway through the town

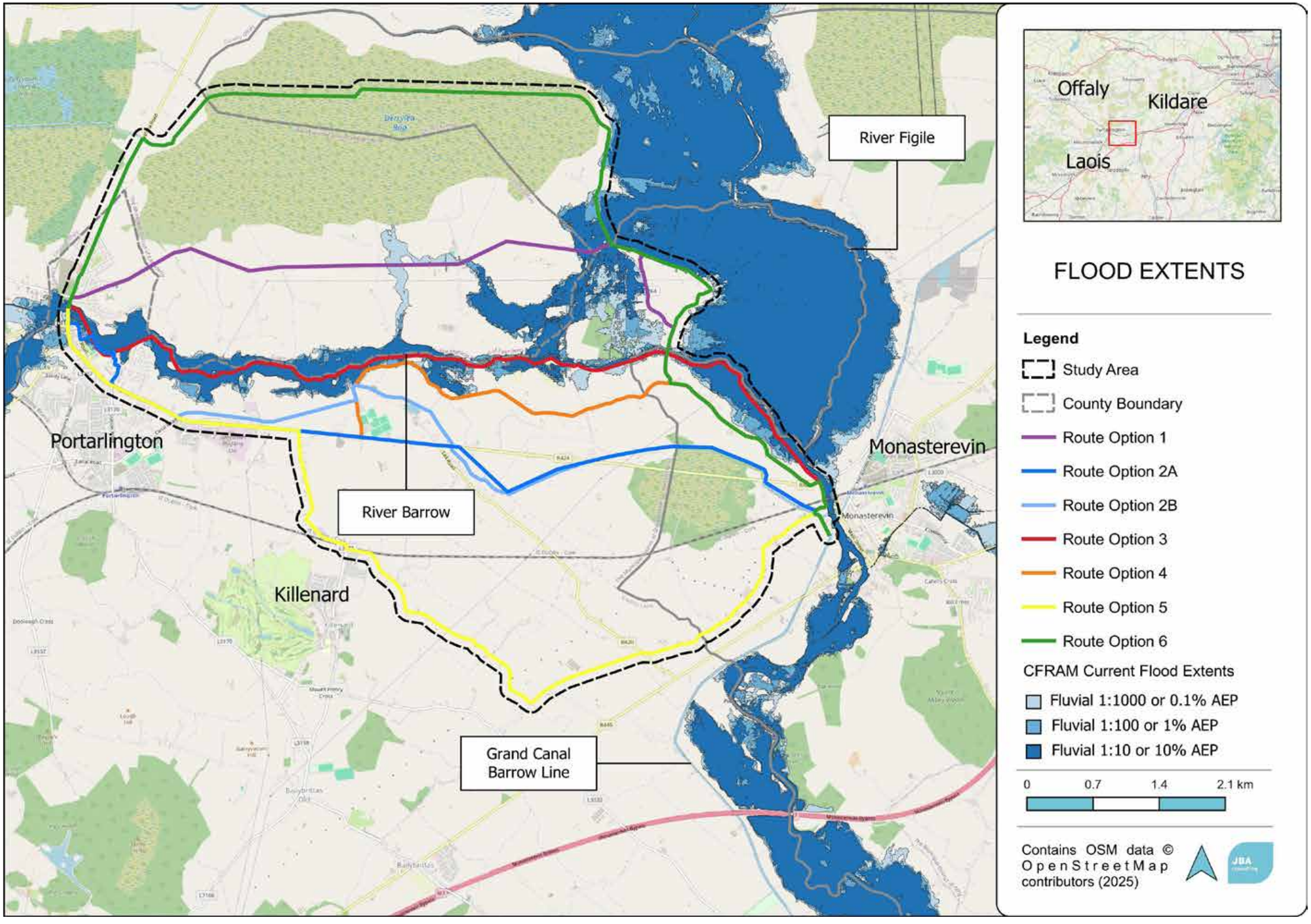


Figure 7-2 Flood Zones within the Study Area

7.3 Infrastructure and Traffic

In determining suitable design parameters for the study TII Rural Cycleway Design(Offline and Greenway) has been adopted taking into account but not limited to vertical and horizontal alignment, surface crossfalls, cross-section widths, over the edge drainage and pavement and foundation construction.

The Irish Wheelchair Associations access guidelines for Trails, greenway, and Public Parks shall also be referenced.

Figure 7-3 Existing bridge at Monasterevin

7.3.1 Road Network

The road network within and surrounding the study area is shown in Figure 7-4.

There are two regional roads located within the study area. The R424 traverses the full extent of the study area, connecting Portarlington to Monasterevin, and the R420 connects the R242 to the R445, which provides a link from Monasterevin to Portlaoise. Other roads within the vicinity of the study area include the R414 (links Monasterevin to Rathangan), the R417 (links Monasterevin to Athy) and the R419 (links Portlaoise to Rathangan).

The M7 motorway is situated approximately 2.7 km east of the study area. It connects Naas to Limerick City and is part of the N7 national road, linking Dublin and Limerick.

The rest of the road network in the study area is comprised of a mix of small urban roads in Portarlington, Killenard and Monasterevin, along with local roads connecting the three towns and unclassified roads.

Table 7-1 Summary of Road Network Widths

Road	Width (m)	
	min	max
R419	7.65	
R420	5.17	8.02
L71703, L31582, L7175	7.2	7.91
L7176	4.82	5.51
L7178	3.8	4.45
Unclassified roads	2.73	3.7

A summary of the road types, lengths and widths of the proposed routes, based on a high-level review using Google Maps is provided in Table 7-1. This information is intended to offer an indicative overview of the geometric characteristics of the routes.

7.3.2 Railway Network

The study area is served by two nearby train stations. Monasterevin station is situated approximately 330 meters to the east, while Portarlington station lies roughly 880 meters to the southwest. Both stations offer connections to major destinations, including Dublin, Cork, Galway, Limerick, Clare, Tipperary, and Mayo. Additionally, Portarlington provides a direct route to Kerry. The railway line runs along the entire length of the study area's southern section (Figure 7-4)

7.3.3 Utilities

7.3.3.1 Water Supply

Monasterevin receives its water from the Monasterevin Public Water Supply, which is treated at the Monasterevin Water Treatment Plant. Killenard is served by the Killenard Group Water Scheme, drawing from the Lough Public Water Supply. Portarlington benefits from multiple sources, including the Lough Public Water Supply via the Carrick Wood Reservoir and an additional supply from the River Barrow, treated at the Ballymorris treatment works. The town is also supplied by the Portarlington Public Water Supply, which is processed at the La Bergerie Water Treatment Plant.

7.3.3.2 Surface and Foul Water

The layout of foul and storm water within and around the study area has been provided by Irish Water to identify existing drainage infrastructure.

Information on surface and foul water within the study area is available from the Kildare CDP 2023-2029, the Laois CDP 2021-2027 and the Offaly CDP 2021-2027. All three Councils will aim to manage surface water sustainably through the use of Sustainable Urban Drainage Systems (SuDS).

Foul water generated in the study area is treated both in the public foul water system and privately. Private septic tanks and other potential private sources are present and will require further assessing where necessary in lands that may be developed in the future. Other foul water produced within the study area is conveyed via a combined sewer system to either the Portarlington Waste Water Treatment Plant (WWTP) or the Monasterevin WWTP.

Sewage treatment discharge locations were identified using EPA maps (2021b). Multiple discharge points for foul water are distributed across the study area, primarily along the River Barrow. These include both primary discharge sites and stormwater overflow points.

7.3.3.3 Other Utilities

The areas of Portarlington, Monasterevin and Killenard are served by ESB Networks, Gas Networks Ireland and various telephone providers. There is potential for the location of any future infrastructure to conflict with the location of existing utility infrastructure. Detailed surveys of such infrastructure has been required when specific works areas are known.

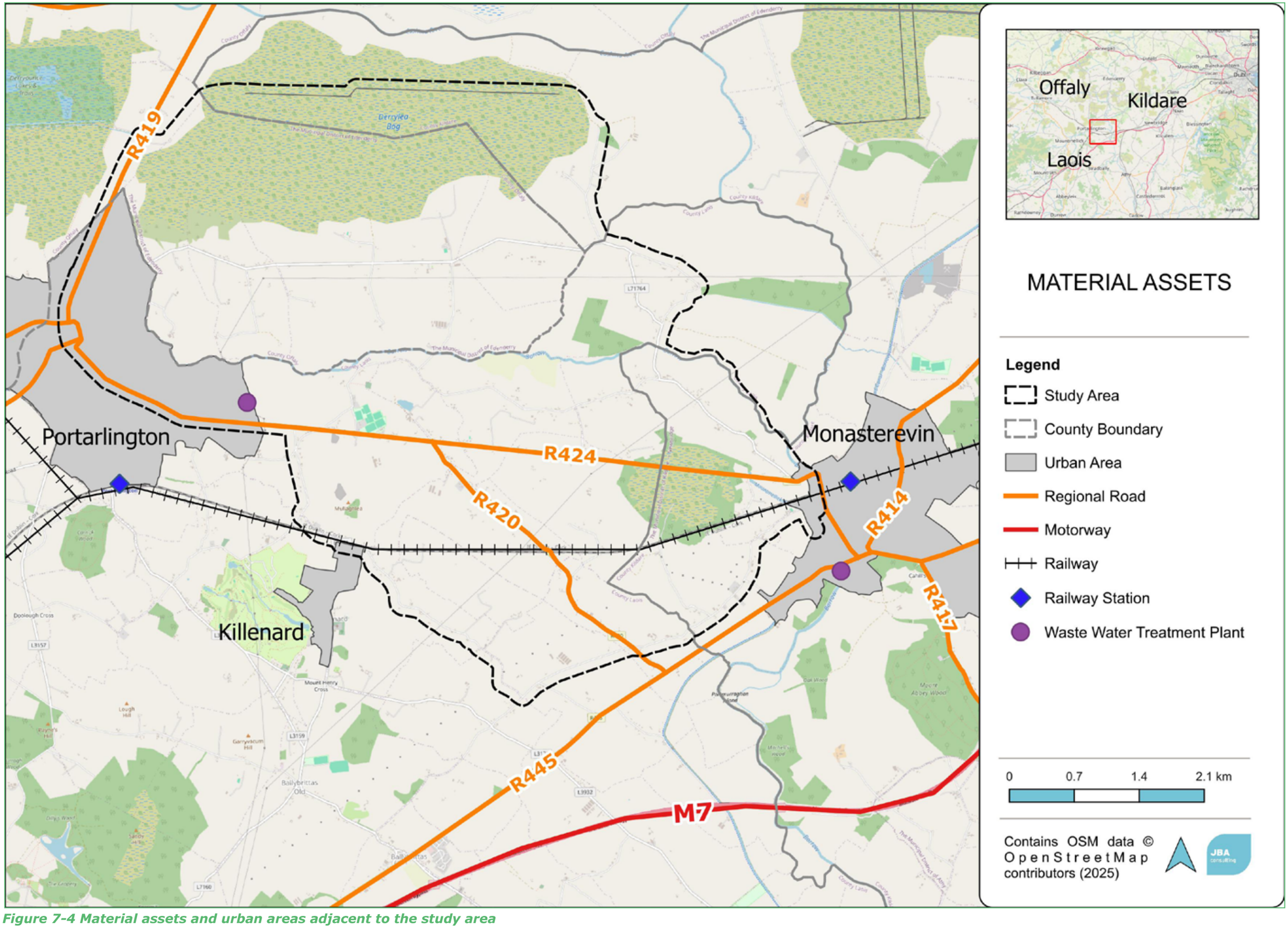


Figure 7-4 Material assets and urban areas adjacent to the study area

7.4 Waste Management

Litter bins located at key points with the Study area include People's Park and Riverside Park. There are several Deposit Return Scheme points within the vicinity of the study area, located in both Monasterevin and Portarlington. Due to the rural nature of the majority of the study area, litterbins are more readily available within the urban areas. In line with Waterways Ireland's policy of not installing bins at inaccessible points along canals, there are limited bins along the Grand Canal Barrow Line. Adequate waste management sites will need to be provided within the study area to prevent littering or environmental degradation from increased footfall.

7.5 Traffic and Greenway Design Principles

7.5.1 Policy and Design Guidance Review

7.5.1.1 TII RURAL CYCLEWAY DESIGN (OFFLINE & GREENWAY) DN-GEO-03047

Guidelines relevant to agreenway design mentioned in DN-GEO-03047 state the following:

"Transport Infrastructure Ireland (TII) is responsible for managing and improving the country's national road and light rail networks "

"This Design Standard provides advice and requirements regarding the planning, design, and development of rural offline cycleways – including national and regional greenway infrastructure – which are funded through Transport Infrastructure Ireland (TII) and/or when TII is the Approving Authority, unless otherwise instructed by TII."

"Rural offline cycleways and national and regional greenways necessarily integrate and interface with urban and rural transport infrastructure. Consequently, this Standard requires interfacing and shall be read and applied in conjunction with complementary design documents including, but not limited to, the Cycle Design Manual; the Design Manual for Urban Roads and Streets; Department of Transport Guidelines; and TII Publications (Standards and Technical)."

"Rural offline cycleways, including national and regional greenways, contribute and are central elements to the sustainability, safety, and efficiency of Ireland's national transport infrastructure."

"Necessarily, their effective planning and design, including integration with existing transportation modes and the built environment, will be key to successful project development, delivery, and operation."

"Rural offline cycleways, including national and regional greenways, can interact with areas of differing characteristics and contexts such as riversides, coastal, uplands, historical, and town and village transition zones and centres. This necessarily requires consideration to be afforded to determining design solutions appropriate to the environment."

7.5.1.2. Definitions of Different Types of Cycle Facilities Relevant to this Study

Cycleway: An offline public road reserved for the exclusive use of people cycling or people walking, wheeling, and cycling (see also definitions of 'Greenway' and 'Shared Use Active Travel Facility'). All mechanically propelled vehicles, other than mechanically propelled wheelchairs and electric bikes, are prohibited from entering except for the purpose of maintenance and access.

Greenway: A cycleway, or other, that caters for people walking, wheeling and cycling in a mainly recreational environment.

Cycle Track: A part of the road cross section, separated from the road / vehicular carriageway by a verge, which is reserved for the use of cycles and from which all mechanically propelled vehicles, other than mechanically propelled wheelchairs and electric bikes, are prohibited from entering except for the purpose of maintenance and access. A cycle track can be adjacent to a footway (see also definition of 'Shared Use Active Travel).

Shared Use Active Travel Facility: A cycleway, cycle track, or other that is provided for people walking, wheeling, and cycling.

Cycle Lane: Part of the road pavement reserved for use by cycles. The cycle lane forms part of the road pavement, and it is thus located within the contiguous road surface. It is not a cycleway nor cycle track and therefore, generally not for the exclusive use of cycles.

7.5.1.3. Rural Cycleway (Offline & Greenway) Development Principles

The following excerpts from the TII guidance will form the basis of selecting the preferred option.

Coherence: Cycling infrastructure should form a coherent network which links origins and destinations in a logical way for all people who use them. Networks should be continuous and easy to navigate. Coherence is about giving people the opportunity to access places by bicycle and to integrate cycling with other modes of travel. Routes should be continuous from an origin to a destination, easy to navigate and of a consistent quality. Cycle signage should be clear and logical at the approaches to and exits from junctions.

Convenience: A cycle network should serve main destinations, and new cycle facilities should offer an advantage in terms of safety and attractiveness compared with the existing provision. Routes and key destinations should be properly signed, and place names should be clearly visible. Routes should be unimpeded by street furniture, and other obstructions which can be hazardous to users. Designers should consider the future ease of maintenance, including access to motorised vehicles for sweeping, trimming grassed verges and surface / lighting repairs along off-road facilities.

Directness: Rural routes need to take into consideration the distance an average cyclist can travel in a day and the linking of intermediate destinations and attractions will be an important consideration with respect to the route design. It should be recognised that directness has both geographical and time elements. The presence of complicated junctions and crossings as well as physical detours will affect use.

Safety: Cycle facilities need to be safe for all users including pedestrians and cyclists. Surface defects should not be allowed to develop to the extent that they become a hazard, and vegetation should be regularly maintained to preserve available width and sight lines. Crossings are generally the most dangerous parts of the cycling journey and the needs of all road users should be considered where cycle facilities cross roads and entrances.

Comfort: Generally, cyclists prefer sheltered, smooth, uninterrupted, well-maintained surfaces with gentle gradients. Cycle facilities should meet surface width, quality and gradient Standards and be convenient, avoiding complex manoeuvres. Dropped kerbs are particularly beneficial to users of wheelchairs, pushchairs and cycles at interface points. Cyclists who are familiar with particular crossings will also appreciate good sightlines on approach, this allows them to gauge their environment and cycle at the appropriate speed. Additionally, ancillary infrastructure such as the provision of rest areas enhances comfort and usability for less abled walkers and riders.

Attractiveness: Cycle facilities should be designed in harmony with their environment such that the whole experience makes cycling an attractive option. A route should complement and where possible, enhance the area through which it passes. The cycle route should pass through interesting places and their design should be sensitive to environmental issues including lighting, personal security, aesthetics, environmental quality, and noise. Cycle facilities should be well maintained and free from litter and broken glass. The ability for people to socialise by walking or cycling two abreast, or to stop and rest or look at a view, makes for a more pleasant experience.

Access: Cycling routes should link trip origins and key destinations along convenient and comfortable routes. Cycling routes should be accessible to all types of cycles, including those with panniers and trailers as well as trikes and recumbents. They should be designed so that anybody who may want to cycle on the network can do so safely and comfortably taking

cognisance of the context and location. The cycle route may be provided into and through areas normally inaccessible to motor vehicles, such as parks and other motorised vehicle restricted areas, if possible.

7.5.1.4. Rural Offline Cycleways

Rural offline cycleways may be made up of any, or all, of the following:

a. Cycleways, as outlined herein;

b. Utilisation of existing infrastructure

i. Existing cycle facilities;

ii. Existing road – including unclassified roads - infrastructure (which may require measures to make the route more suitable for inexperienced cyclists);

iii. Service roads, maintenance tracks, etc;

iv. Disused railway infrastructure

c. The following existing infrastructure may also be suitable subject to evaluation, enhancement and engagement with landowners and stakeholders

i. Abandoned, disused, or redundant railway lines

ii. Canal towpaths

iii. River navigation schemes

iv. Forest roads

v. Flood relief schemes and embankment

vi. Rail, river, road, gas, and electrical maintenance paths

vii. Historic structures, archaeological, and other heritage sites"

7.5.2 Design Guidance Requirements

7.5.2.1 Along Existing Regioinal, Local and Unclassified Roads

The design recommendations for routes along existing regional, local and unclassified roads are based on the National Transport Authority Cycle Design Manual (CDM).

With limited widths in existing regional, local and unclassified road, it is not feasible to consider segregated cycling facilities without acquiring and widening into extra adjacent land along the routes. Therefore, this assessment assumes that the proposed active travel routes would be unsegregated with mixed traffic.

The CDM describes that on local roads, residential streets and rural lanes, where traffic speeds and volumes are low, many people may feel comfortable cycling in mixed traffic or unprotected cycle lanes due to the lower perceived risk. Nonetheless, dedicated cycling facilities may be provided to enhance coherence and attractiveness. In some cases, shared street designs may best accommodate a mix of users and activities.

The Manual also highlights that traffic calming and management measures can help create inclusive cycling conditions by reducing speeds and traffic volumes. These may include restricting through-traffic to prioritise local access, from town-level bypasses to neighbourhood turning bans.

The CDM explains that cyclists typically use two key positions when riding in mixed traffic: the primary and secondary positions. See Figure 7-5 of CDM.

- **Primary position:** Riding in the centre of the lane, used on narrow roads, near pinch points, or when passing side roads, to signal that overtaking requires a clear lane.
- **Secondary position:** Riding 0.5 to 1.0 metres from the kerb, allowing cyclists to avoid debris and adjust for surface hazards.

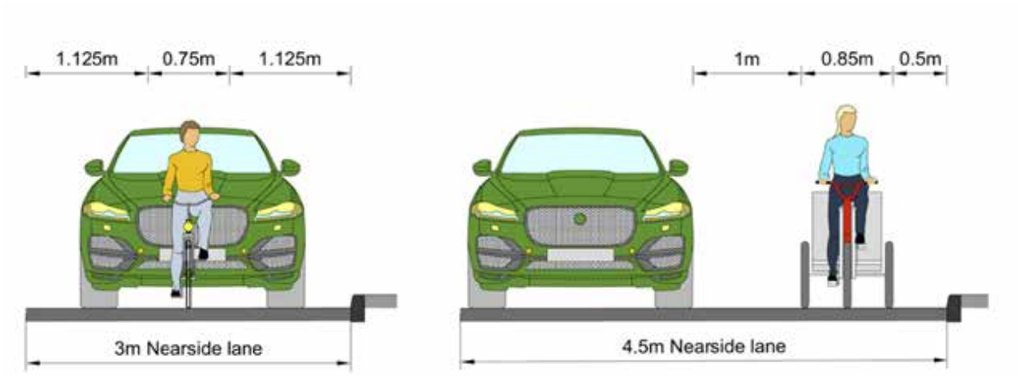


Figure 7-5 Primary and Secondary cycling positions

Figure 7-6 rom the CDM shows this arrangement as a typical layout and a visualisation of this arrangement:

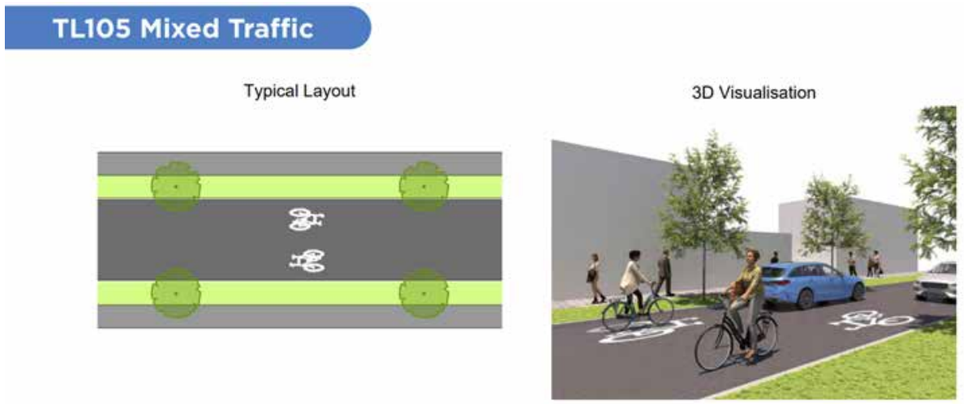


Figure 7-6 Typical arrangement and visualisation of Primary cycling position

It is noted that this arrangement is only suitable in low-speed, low-traffic environments such as residential streets, streets with no through traffic and low traffic neighbourhoods. Therefore, at this stage, in the absence of traffic volume data, cycling in mixed traffic is not recommended for regional roads. It is also noted that these roads are typically not low-speed environments.

If a route or part of a route involves using regional road, segregated cycleways would be recommended.

Several other criteria and considerations from the Typical Layout include:

- Single lane carriageways only.
- Use of narrow lane widths, with a 3.25m width recommended maximum.

- Centre line markings not recommended for carriageways up to 5.5m in width.
- Large cycle symbols (M 116 symbols) placed in centre of traffic lanes at beginning of the mixed-use routes, after every junction, and at regular intervals along the routes.
- Consider additional traffic calming measures to ensure slow motor vehicle speed.
- Consider using wayfinding signage if the route forms part of a designated cycle network.

7.5.2.2 Along Existing Regioinal, Local and Unclassified Roads

Off-Road design recommendations are based on the TII Rural Cycleway Design (Offline & Greenway). The requirement of segregation of Walking & Wheeling from Cycling depends on the volume of pedestrians. This is outlined in Table 7-2 below (DN-GEO-03047-04):

Table 7-2 Summary of Road Network Widths

Density of Pedestrians (users/h/m)*	Recommended Arrangement
<100	Shared use is usually appropriate (cycles give way)
101-199	Segregation may be considered
>200	Segregation must be considered
*Based on CROW, Design Manual for Bicycle Traffic, 2016	

Section 4.5.5 of DN-GEO-03047-04 elaborates on the cross-section width requirements:

- The minimum separation distance required where vertical objects are located adjacent to cycleways is 1.0m.
- For a two-way cycleway, the minimum width required is 3m (low volume) and 4m (high volume).
- And for a shared used cycleway, where walking & wheeling are not segregated from cycling, the minimum width required is 3m (low volume) and 5m (high volume).

7.6 Potential Constraints and Opportunities

Material assets which could constrain the Feasibility Study are, principally, the underground utilities i.e., sewers, electricity, water, and telephone networks. The location of most utilities is not known at present and will require consultation with service providers when detailed works areas are known.

Local traffic may be impacted by potential construction traffic to and from a future site within the study area, including road closures, and construction works. While there are generally good road connections to the study area via the regional roads, some connections are via smaller local roads which may constrain capacity for future online shared use design.

There is a potential for the improvement to cyclist and pedestrian amenity, and increased connectivity between urban areas within the study area, including Waterways Ireland, who owns the Grand Canal Barrow Line and any associated infrastructure in this location.

7.6.1 Gaps in information

The following information will be necessary for the development of a detailed design of the preferred option:

- To improve the topography and identify field drainage at route locations, a topographic survey will be required along the preferred route corridor.
- Topographical surveys will be required on the roads where connectivity will be via shared surfaces.
- A detailed review of existing utility records (ESB, GNI etc.) to be undertaken along the preferred route corridor to ensure any interactions are identified.
- Condition assessments of existing structures impacted by future designs & works, and any mitigation measures that may be required.

8.0 AIR, NOISE & CLIMATE

8.1 Air Monitoring Sites

The EPA maintains air monitoring sites across the country, for the purpose of collecting air quality data which informs reporting and assessment. There are no such sites either within the study area or the immediate surrounding area. The nearest sites are approx. 14.8km and 18.3km away, at Portlaoise and Newbridge, respectively. These are background sites, generally representative of overall area-wide exposure, and measure concentrations of particulate matter (PM2.5 and PM10).

Particulate matter is the main pollutant of concern in Ireland (EPA, 2021a), causing a range of health impacts. The main source for particulate matter in Ireland is solid fuel for heating homes, and as such, levels vary widely throughout the day and in different parts of the year. Levels are typically higher in the winter months and in the afternoons and evenings.

In Ireland, the 24-hour average limits for particulate matter are set by the EU's Ambient Air Quality Directive (2008/50/EC). The limits are 50 μg/m³ for PM10, which is not to be exceeded more than 35 times per year, and 25 μg/m³ for PM2.5, which is not to be exceeded more than three times per year. Based off these thresholds, both the Newbridge and Portlaoise air monitoring sites are within particular matter limits.

It is hoped that by moving away from solid fuel for home heating, the levels of particulate matter across the country can be reduced.

While the main source of particulate matter in Ireland is from solid fuel heating, other sources include construction sites (dust), and vehicle traffic.

Individual figures are not available for the study area, but it is assumed that solid fuel contributes the largest portion of particulate matter pollution, followed by vehicle traffic, and other sources.

8.2 Noise Pollution

Noise pollution sources within the study area include construction activities, the railway and vehicle traffic. Noise pollution is likely greatest along the M7 motorway routes and the railway track. Using noise data from the EPA, the study area will experience a minimum of 55-59dB and a maximum of over 75dB of noise from the railway track and M7 (Figure 8-1). Additionally, built-up parts of the study area will likely experience greater noise pollution than rural areas.

8.3 Climate

Any development within the study area will have the potential to lead to short-term temporary emissions, due to the operation of machinery and transport of materials and personnel to and from site. Additionally, the environmental impact will vary depending on the chosen construction methods and materials. For instance, a concrete pathway would have a significantly higher carbon footprint than a natural earth path.

8.4 Potential Constraints

Construction activities may temporarily disrupt the surrounding environment and nearby residents through noise and dust. The development of a greenway could contribute to increased particulate matter levels, reduced air quality, and greenhouse gas emissions. However, such impacts would be temporary, only occurring during the construction phase.

Once operational, potential future developments within the study area may be constrained by noise pollution, particularly from the railway track. To mitigate this, materials and strategic planting could be considered to help reduce noise exposure for the new development.

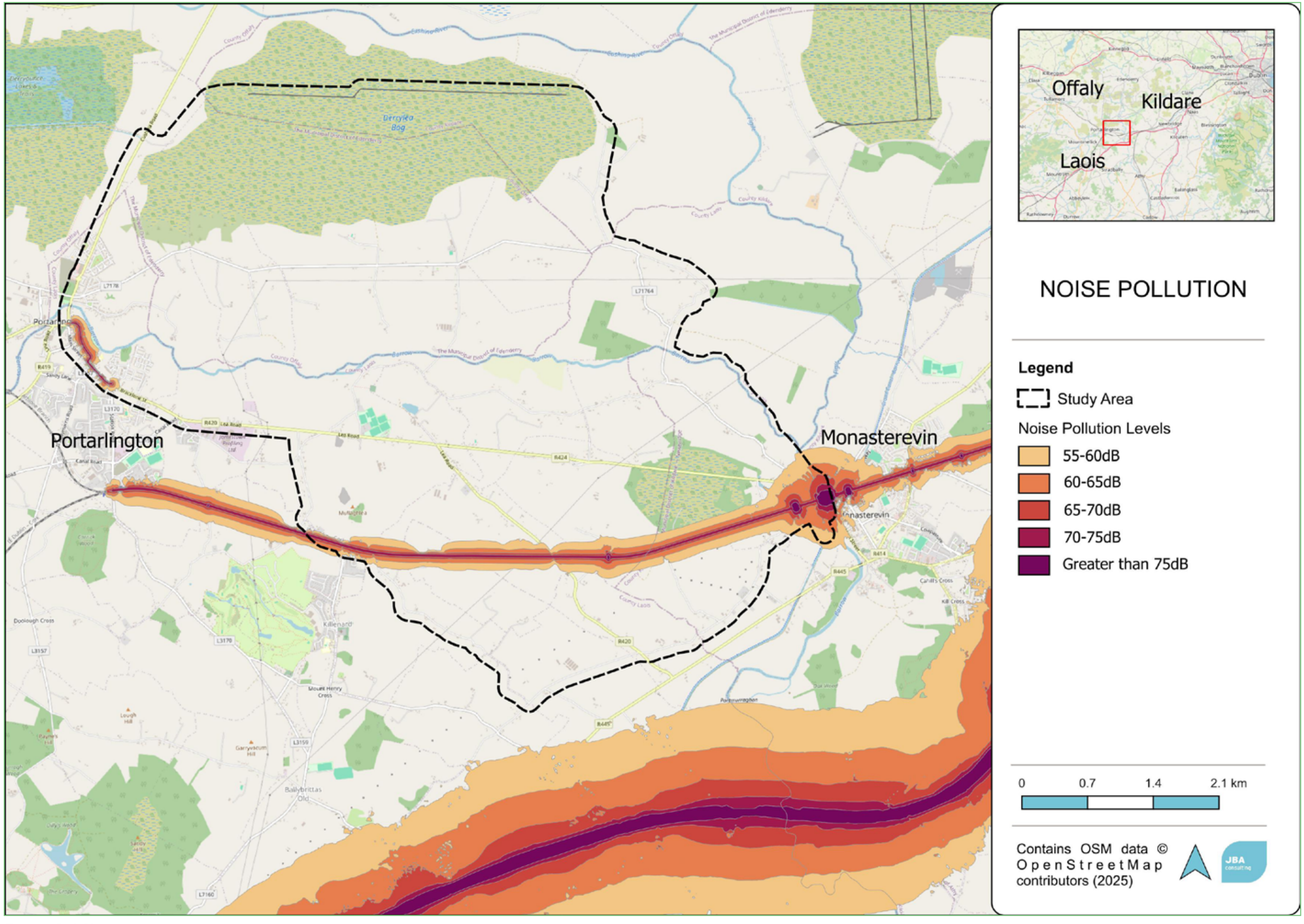


Figure 8-1 Noise pollution in study area

9.0 BUILT HERITAGE, ARCHAEOLOGY & CULTURAL HERITAGE

This chapter was prepared by IAC Archaeology and includes the Archaeological Constraints Study, Monasterevin to Portarlington Greenway, County Kildare.

9.1 Introduction

The following report details an archaeological, architectural and cultural heritage assessment, which has been undertaken in order to inform the design of the proposed Monasterevin to Portarlington Greenway and Cycle and Walking Route (Figure 1; ITM 658422,712424). This assessment includes all recorded archaeological, architecture and cultural heritage sites and areas of archaeological potential within the study area. It was undertaken by Deanna Lee of IAC Archaeology (IAC), on behalf of Kildare County Council.

The constraints study involved a detailed study of the archaeological, architectural and historical background of the study area. This included information from the Record of Monuments and Places of County Dublin, the Record of Protected Structures for County Laois, Offaly and Kildare, the National Inventory of Architectural Heritage and a review of the Excavations Bulletin (1970-2025).

9.2 Methodology

Research for this constraints study comprised a paper survey of all available archaeological, historical and cartographic sources. The following sources were consulted in order to identify archaeological and cultural heritage constraints.

- Record of Monuments and Places for County Offaly, Laois and Kildare;
- Sites and Monuments Record for County Offaly, Laois and Kildare;
- National Monuments in State Care Database;
- Preservation Orders List;
- Topographical files of the National Museum of Ireland;
- Cartographic and written sources relating to the study area;
- Laois County Development Plan 2021 – 2027;
- Offaly County Development Plan 2021 – 2027;
- Kildare County Development Plan 2023-2029;
- Portarlington Local Area Plan 2016 – 2024 and (draft) 2024 – 2030;
- Monasterevin Area Plan 2016 – 2022 and (draft) 2025-2031;
- Aerial photographs;
- Excavations Bulletin (1970-2025);
- National Inventory of Architectural Heritage; and
- Laois Industrial Heritage

Record of Monuments and Places (RMP) is a list of archaeological sites known to the National Monuments Section, which are afforded legal protection under Section 12 of the 1994 National Monuments Act and are published as a record.

Sites and Monuments Record (SMR) holds documentary evidence and field inspections of all known archaeological sites and monuments. Some information is also held about archaeological sites and monuments whose precise location is not known e.g. only a site type and townland are recorded. These are known to the National Monuments Section as 'un-located sites' and cannot be afforded legal protection due to lack of locational information. As a result, these are omitted from the Record of Monuments and Places. SMR sites are also listed on a website maintained by the Department of Housing, Local Government and Heritage (DoHLGH) – *www.archaeology.ie*.

Record of Protected Structures (RPS) are designated buildings and structures that are identified in the County Development Plan as containing special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest.

National Monuments in State Care Database is a list of all the National Monuments in State guardianship or ownership. Each is assigned a National Monument number whether in guardianship or ownership and has a brief description of the remains of each Monument. The Minister for the DoHLGH may acquire national monuments by agreement or by compulsory order. The state or local authority may assume guardianship of any national monument (other than dwellings). The owners of national monuments (other than dwellings) may also appoint the Minister or the local authority as guardian of that monument if the state or local authority agrees. Once the site is in ownership or guardianship of the state, it may not be interfered with without the written consent of the Minister.

Preservation Orders List contains information on Preservation Orders and/or Temporary Preservation Orders, which have been assigned to a site or sites. Sites deemed to be in danger of injury or destruction can be allocated Preservation Orders under the 1930 Act. Preservation Orders make any interference with the site illegal. Temporary Preservation Orders can be attached under the 1954 Act. These perform the same function as a Preservation Order but have a time limit of six months, after which the situation must be reviewed. Work may only be undertaken on or in the vicinity of sites under Preservation Orders with the written consent, and at the discretion, of the Minister.

The topographical files of the National Museum of Ireland are the national archive of all known finds recorded by the National Museum. This archive relates primarily to artefacts but also includes references to monuments and unique records of previous excavations. The find spots of artefacts are important sources of information on the discovery of sites of archaeological significance.

Development Plans contain a catalogue of all the Protected Structures and archaeological sites within the county. The Kildare County Development Plan (2023–2029) was consulted to obtain information on cultural heritage sites in and within the immediate vicinity of the proposed development area.

Documentary sources were consulted to gain background information on the archaeological, architectural and cultural heritage landscape of the proposed development area.

Aerial photographic coverage is an important source of information regarding the precise location of sites and their extent. It also provides initial information on the terrain and its likely potential for archaeology. A number of sources were consulted including aerial photographs held by the Ordnance Survey and Google Earth.

Excavations Bulletin is a summary publication that has been produced every year since 1970. This summarises every archaeological excavation that has taken place in Ireland during that year up until 2010 and since 1987 has been edited by Isabel Bennett. This information is vital when examining the archaeological content of any area, which may not have been recorded under the SMR and RMP files. This information is also available online (*www.excavations.ie*) from 1970–2024.

The National Inventory of Architectural Heritage is a state initiative established under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999 tasked with making a nationwide record of significant local, regional, national and international structures, which in turn provides county councils with a guide as to what structures to list within the Record of Protected Structures. The NIAH have also carried out a nationwide desk-based survey of historic gardens, including demesnes that surround large houses.

Laois Industrial Heritage several industrial heritage surveys have been carried out across

Couty Laois; the Bridges of County Laois and the Mountmellick Canal. These surveys recommend sites, which should be added to the RPS and protected by the Council.

9.3 Archaeological & Historical Background

The constraints study area comprises lands between Monasterevin to Portarlington and is centred on ITM 658422, 712424. The constraints area encompasses all or parts of 27 townlands, located within the civil parish of Lea, Clonyhurk, Lackagh or Monasterevin in the barony of Portnahinch, Upper Philipstown or West Offaly. The surrounding landscape is characterised by part of the towns of Monasterevin and Portarlington, agricultural fields, bogland to the north, forested areas and the River Barrow (Table 9-1).

Table 9-1 Townlands, Parishes and Baronies located within the Study Area

TOWNLAND	CIVIL PARISH	BARONRY	COUNTY
Droughill	Lea	Portnahinch	Laois
Bracklone			
Cooltedery			
Tirhogar			
Lea			
Ballycarroll			
Closeland or Cloneen			
Kilmullen			
Loughmansland Glebe			
Derrynafunshion			
Ullard or Controversyland			
Ballintogher			
Clonanny			
Inchacooly			
Killinure			
Derryvilla	Clonyhurk	Upper Philipstown	Offaly
Tinacrannagh			
Bishopswood			
Trascan			
Clondoolusk			
Aughrim	Lackagh	West Offaly	Kildare
Derrylea			
Clogheen	Monasterevin		
Coolnafearagh			
Monasterevin			
Skirteen			
Passlands			

There are 19 recorded archaeological sites within the constraints area, including the multiple recorded archaeological sites within the historic town of Portarlington, and sites associated with Lea Castle (Figure 9-2).

There are 49 structures within the constraints area that are recorded on the NIAH, 45 of which are also Protected Structures (Figures 9-3 and 9-4). A further 25 Protected Structures are recorded, although they are not listed in the NIAH.

9.3.1 Prehistoric Period

The Mesolithic period (8000-4000 BC) and Neolithic period (4000-2500 BC) are the earliest periods for human activity in Ireland. Whilst it is likely that the study area was occupied during this period, there are no recorded archaeological sites dating to this period within the landscape.

The Bronze Age (2500-800 BC) is marked by the use of metal for the first time. As with previous periods, the transition into the early Bronze Age was accompanied by changes in society. Megaliths Tombs were replaced in favour of individual, subterranean cist or pit burials that were either in isolation or in small cemeteries. These burials contained inhumed or cremated remains and were often, but not always, accompanied by a pottery vessel.

Over 7,000 burnt mounds or fulacht fia sites have been recorded in the country and c. 1,500 examples excavated, making them the most common prehistoric monument in Ireland (Waddell 2022, 164). Although burnt mounds of shattered stone occur as a result of various activities that have been practiced from the Mesolithic to the present day, the Bronze Age has long been believed to have seen the peak of this activity. Dating evidence from a growing number of burnt mounds, suggests activities resulting in burnt mounds were being carried over a span of 3,500 years in Ireland (Hawkes 2018). They are typically located in areas where there is a readily available water source, often in proximity to a river or stream or in places with a high-water table. In the field burnt mounds may be identified as charcoal-rich mounds or spreads of heat shattered stones, however, in many cases, the sites have been disturbed by later agricultural activity and are no longer visible on the field surface. Nevertheless, even disturbed spreads of burnt mound material often preserve the underlying associated features, such as troughs, pits and gullies, intact.

A small cluster of two fulact fiadh (LA009-062001 and LA009-062002) and one burnt pit (LA009-043) are located c. 1.7km southeast of the study area. These three features were identified during excavations for the M7 motorway under Licence No. 03E0735 (Dempsey 2003).

There is increasing evidence for Iron Age settlement (800 BC-AD 500) and activity in recent years as a result of development-led excavations as well as projects such as Late Iron Age and Roman Ireland (Cahill Wilson 2014). Yet this period is distinguishable from the rather rich remains of the preceding Bronze Age and subsequent early medieval period, by a relative paucity within the current archaeological record.

The constraints area encompasses Derrylea Bog, and boglands were sometimes used during the Iron Age as sacrificial locations. An Iron Age bog body 'Oldcroghan Man' was found on the south side of Croghan Hill (c. 19km northwest) and it is suggested that his burial may be associated with a former royal estate (Kelly 2006a, 26). O'Brien (2006) records that the mountain had been claimed by the O'Connors of the Uí Failghe tribe by the 5th century. In AD 475 the King of Tara defeated the Laigin tribe in a battle at Croghan Hill and following the battle of Drum Derge in c. AD 516 a divisive boundary was drawn across Croghan Hill between Leinster and Meath (ibid.). The hill functioned as an inauguration site for the Uí Failghe, after which the county Offaly is named (Kelly 2006b). Other bog bodies such as the 'Cashel Man', found in Cashel Bog just outside Portlaoise (c. 20km south). The 'Cashel Man' was discovered on the border of the Fearann Ua Leathlobhair lands the overlooks Crosy Duff Hill (Cros Dubh), which was the likely location for the inauguration of the regional kings of Laois (Kelly 2013).

9.3.2 Early Medieval Period (AD 500-1100)

The early medieval period is depicted in the surviving sources as an almost entirely rural based society. Territorial divisions were based on the túath, or petty kingdom, with Byrne (1973) estimating that there may have been at least 150 kings in Ireland at any given time. This period, with a new religious culture and evolving technologies, saw significant woodland clearance and the expansion of grassland. A new type of plough and the horizontal mill were two innovations that improved agriculture and allowed for the population to increase. Consequently, from c. AD 500 onwards, the landscape became well settled, as evidenced by the profuse distribution of ringforts, a dispersed distribution of enclosed settlements, normally associated with various grades of well-to-do farming and aristocratic classes in early medieval Ireland (Stout and Stout 1997, 20).

The ringfort or rath is considered to be the most common indicator of settlement during the early medieval period (Stout 1997). One of the most recent studies of early medieval settlement enclosures has suggested that there is potential for at least 60,000 such sites to have existed on the island (O'Sullivan et al. 2014, 49). Ringforts were often constructed to protect rural farmsteads and are usually defined as a broadly circular enclosure delineated by a bank and ditch. Ringforts can be divided into three broad categories – univallate sites, with one bank or ditch; multivallate sites with as many as four levels of enclosing features and platform or raised ringforts, where the interior of the ringfort has been built up. These enclosed sites were intimately connected to the division of land and the status of the occupant.

Two ringforts lie within the study area: LA005-001 and LA005-008. LA005-001 was identified on an aerial photograph, located on a slight rise at a bend in the Barrow in a greenfield area within the town of Portarlington, it is not annotated on the historic mapping. LA005-008 located in the townland of Clonanny, is depicted on the 1841 Ordnance survey map as a circular 'fort', but no surface expression remain today.

9.3.3 Medieval Period (AD 1100-1600)

The piecemeal conquest by the Anglo-Normans of Ireland, which commenced in AD 1169, had a fundamental impact on the Irish landscape. Their presence was strongest in the East of the Country, and it is mainly in this region that land was carved up and granted to the newly arrived lords who participated. The main success of the Anglo-Norman occupation was the welding of scattered territories into a cohesive unit through the introduction of the English form of shire government. The rural landscape became a network of manorial centres; these units would generally contain a castle (motte and bailey), a manorial house and a number of dwellings, with extensive surrounding acreage. During the 14th to 16th centuries, tower houses were the typical residence of the Irish gentry and are a common feature in the Irish landscape.

County Laois was located outside of 'The Pale', which were the lands under the possession of the English Crown that centred on the city of Dublin. During the years 1175-1325, Norman Lords had control of the best land in the county, founding boroughs at Castletown, Dunamase, Durrow and Timahoe. The arrival of the Anglo-Normans saw a change in the social structure with the introduction of the Feudal System; economic and agricultural change, military improvements and to the Gaelic Irish, a new language. They also constructed early earth and timber castles; called mottes and baileys. The remnants of these Anglo-Norman fortifications, manor farms and later stone built castles such as Lea Castle and Dunamase attest to the presence of the Anglo-Normans in County Laois from the late 12th century onwards.

Lea Castle (LA005-006), a prominent Anglo-Norman fortress in Co. Laois, Ireland, was likely built in the early 13th century by the Earl Marshal or the FitzGeralds located c. 2.5km east of Portarlington (Leask 1936; 1941). The castle played a central role in regional conflicts, enduring multiple sieges, occupations, and burnings—by Edward Bruce in 1315, the Irish in 1346, and Cromwellian forces in 1650 who partially destroyed it with gunpowder (Fitzgerald 1904; Holinshed 1577; Cal. doc. Ire.).

Despite later ruin, parts of the keep and gatehouse remain (Fitzgerald 1904; Leask 1941). Surrounding Lea Castle are a number of features associated with the castle remain including a ringwork (LA005-006002), the medieval deserted settlement (LA005-006003) and the church and graveyard (LA005-007/007001). The site of a possible double banked Motte and Bailey is located c. 1.7km west of Lea Castle and on the outskirts of Portarlington Town.

9.3.4 Post-Medieval Period (AD 1600-1800)

The origins of Portarlington trace back to the earlier settlement of 'Cooletodderie', recorded in a 1571 Elizabethan land grant to Owen mac Hugh O'Dempsey. This grant described a parcel of 80 acres located southwest of the River Barrow, adjoining lands known as Bracklone East (O'Flanagan, 1933, vol. 2, p. 51). The area, then rural and strategically positioned along the Barrow, would later be transformed into a formal town as part of post-Cromwellian plantation schemes.

The modern town was established in 1666 following a royal grant by Charles II to Sir Henry Bennet, later Lord Arlington, from whom the town takes its name. The grant transferred large tracts of O'Dempsey lands to create the Manor of Portarlington, which included borough status, the right to hold a weekly market and two annual fairs (Calendar of State Papers, 1666–1669, pp. 220–222). The town may have been superimposed on the earlier medieval settlement at Cooletodderie.

The town was fortified, enclosed by a moat and surrounded on three sides by the River Barrow (LA005-031001). The southern side was protected by a man-made water-filled ditch. Triangular angle bastions at the northeast and northwest corners, as depicted on 17th-century maps, suggest the fortifications were styled after star-shaped earthen forts. Buildings were subject to strict construction guidelines: each house within the fort was to be at least 50 feet in front, built of stone and lime, and roofed with shingles, tiles, or slates. The houses were to be 1.5 storeys high with specified dimensions and dormer windows facing the streets (Calendar of State Papers, 1666–1669, pp. 259–261).

Although the physical fortifications no longer survive, archaeological investigations provide evidence of their existence. A 2001 excavation on French Church Street (Delany 2001, Licence No. 99E0281) revealed remnants of a 4–5 metre-wide, flat-bottomed cut, consistent with rampart defences shown on the 17th-century map. The fill contained post-medieval material such as brick, shell, and pottery sherds, suggesting the defences were levelled, likely in the 18th century (Crumlish 2001, Licence No. 01E0777). Subsequent testing on Spa Street and Main Street between 2001 and 2004 showed similar deposits but no standing remains of fortifications (Purcell 2003, Licence No. 03E0518; Bennett, 2003, 2004).

The ending of the Williamite Wars saw the beginning of a comparative politically calm era, which allowed the country's landowners the security to experiment with the latest styles of architecture without the need to refer to defensive matters. Initially, constraints on available resources resulted in mansions of a relatively modest scale and plain appearance. As the Irish aristocracy's sense of security grew over the following decades, their greater access to wealth helped foster a shift towards more ostentatious buildings. Buildings of architectural heritage value in study area include Kilnacourt House (RPS 091; NIAH 12900243) a detached five-bay three-storey over basement house that was built c. 1790, with a large demesne located in Portarlington town.

Kilmullen House (RPS 550; NIAH 12800556), located in the townland of Kilmullen, is a detached six-bay two-storey Georgian house built in c. 1790. The town of Portarlington has over 50 structures listed on the Record of Protected structures and National Inventory of Architectural Heritage (Tables 5 and 8) which attests to Portarlington rich architectural heritage. The constraints

area does not pass into Monasterevin town only covering the western most fringes of the town, while not included Monasterevin has numerous buildings of architectural interest including the location of the Cistercian monastery (KD026-001) and a 17th century house known as Moore Abbey (KD026-002; NIAH 11816054) and associated structures southeast of the town

9.4 Constraints Study

9.4.1 Record of Monuments and Places

A total of ten RMP and nine SMR (Sites and Monuments Record) individual sites have been identified within the study area and are listed below in Table 9-2. The town defences of Portarlington are considered a National Monuments under the National Policy on Town Defences. The town defences at Portarlington comprised a fortified moat that enclosed the town and was surrounded on all sides by water, three of which from the River Barrow, two triangular bastion towers were located in the northwest and northeast corners. One of these towers was possible called Katherine's tower as noted by an account during the 17th century (Bradley 1986). No other the sites within the study area are listed as a National Monument and none are protected with a Preservation Order. (Figure 9-2).

Table 9-2 Recorded Monuments located within the Study Area

RMP NO.	LOCATION	CLASSIFICATION	LEGAL STATUS
LA005-006002	Lea, Co. Laois	Castle - ringwork	SMR
LA005-008	Clonanny, Co. Laois	Ringfort - unclassified	RMP
LA005-031	Cooltedery, Co. Laois	Historic town	RMP
LA005-001	Droughill, Co. Laois	Ringfort - rath	RMP
LA005-004	Cooltedery, Co. Laois	Castle - motte and bailey	RMP
LA005-005	Cooltedery, Co. Laois	Enclosure	RMP
LA005-006	Lea, Co. Laois	Castle - Anglo-Norman masonry castle	RMP, RPS
LA005-007	Loughmansland Glebe, Co. Laois	Church	RMP
LA005-032	Cooltedery, Co. Laois	Tomb - effigial (present location)	RMP
LA005-007001	Loughmansland Glebe, Co. Laois	Graveyard	SMR
LA005-031001	Cooltedery, Co. Laois	Town defences	Nat Mon, SMR
LA005-031004	Cooltedery, Co. Laois	Church	SMR, RPS, NIAH
LA005-031005	Cooltederyv, Co. Laois	Graveyard	SMR
LA005-031006	Cooltedery, Co. Laois	Church	SMR, RPS, NIAH
LA005-031008	Cooltedery, Co. Laois	Bridge	SMR
LA005-031009	Cooltedery, Co. Laois	Bridge	SMR
LA005-006003	Lea, Co. Laois	Settlement deserted - medieval	SMR
OF034-004	Trascan, Co. Offaly	Earthwork	RMP
KD021-006	Coolnafearagh,Passlands, Co. Kildare	Bridge	RMP, NIAH

9.4.2 Summary of Previous Archaeological Fieldwork

A review of the Excavations Bulletin (1970–2025) has revealed that ten investigations have been carried out within the constraints area. Overall, the investigations did not identify considerable archaeology within the constraints area, with a small pit that was identified at Burke's Cross, Killinure, Co. Laois (Bennett 2007:1062, Licence No. 07E0266) and animal bone was identified within St Paul's Church, French Church Street, Portarlington. Co. Laois (Bennett 2007:1071, Licence No. 07E0128). The archaeological investigations are detailed below (Table 9-3).

Table 9-3 Archaeological Fieldwork carried out within the study area

EX. BULLETIN REF.:	LICENCE NO.	LOCATION	RESULTS
2007:1070	07E0587	French Church Street, Portarlington. Co. Laois	No Archaeology Found
2007:1071	07E0128	St Paul's Church, French Church Street, Portarlington. Co. Laois	Animal bone was identified; no date or function was determined for the single archaeological feature.
2007:1054	07E0929	Cooltedery, Portarlington. Co. Laois	Testing did not identify anything of archaeological significance. Large areas of the site were found to be infilled with building waste and river bank subsoil.
2006:1186	06E0708	Main Street/Link Road, Cooltedery, Portarlington. Co. Laois	Testing did not identify anything of archaeological significance
2004:0943	04E0995	Main Street, Cooltedery, Portarlington. Co. Laois	Nothing of archaeological significance was recorded during the testing.
2009:516	09E0245	R420, Hope's Bridge Realignment, Kilmullen, Co. Laois	Monitoring did not identify anything of archaeological significance
2007:1062	07E0266	Burke's Cross, Killinure, Co. Laois	A single pit feature was identified during testing.
2004:1376	04E1126	Derrylea Bog, Aughrim/Bishopswood/ Clondoolusk/ Derrylea/ Tickanagh/ Trascan, Co. Offaly	No archaeological sites were identified during the survey of Derrylea Bog.
2010:552	10D23; 10R52	Grand Canal, Shannon Harbour, Clonony Beg, Co. Offaly	An impact assessment was carried out which concluded the proposed site is of low archaeological potential.

9.4.3 Topographical Files of the National Museum of Ireland

Information on artefact finds from the study area in County Laois, Offaly and Kildare has been recorded by the National Museum of Ireland since the late 18th century. Location information relating to these finds is important in establishing prehistoric and historic activity in the study area. 91 stay finds were identified within the constraints study area, primary clustered around Lea Castle and within the townland of Monasterevin. The finds range from prehistoric finds (stone and bronze tools) and a wide range of medieval ad post-medial metal artifacts

Table 9-4 Stray archaeological finds within the Study Area

NMI NO.	OBJECT(S)	TOWNLAND	FIND PLACE
1979:69, IA/72/1979	Polished Stone Adzehead	Cooltedery, Co. Laois	Surface find in garden
1937:3526	Flanged bronze axehead	Clonanny, Co. Laois	Clonanny Bog
1930:529	Bronze Sword	Lea, Co. Laois	Riverbed of River Barrow
1931:106	Upper Rotary Quernstone	Lea, Co. Laois	Caheer's Island
1935:155	Stone vessel	Lea, Co. Laois	Near Lea Castle
2009:192	Decorative copper alloy lid	Lea, Co. Laois	Lea Castle
1994C1:20	Copper alloy halfpenny	Lea, Co. Laois	Lea Castle
1994C1:21	Copper alloy halfpenny	Lea, Co. Laois	Lea Castle
1994C1:22	Silver short cross penny	Lea, Co. Laois	Lea Castle
1994C1:23.1-.2	Copper alloy halfpenny's	Lea, Co. Laois	Lea Castle
1994C1:24	Copper alloy halfpenny	Lea, Co. Laois	Lea Castle
1994C1:25	Copper alloy farthing	Lea, Co. Laois	Lea Castle
1994C1:26	Copper alloy penny	Lea, Co. Laois	Lea Castle
1994C1:27	Silver shilling	Lea, Co. Laois	Lea Castle
1994C1:30	Copper alloy halfpenny	Lea, Co. Laois	Lea Castle
1994C1:29.1-54	Lead musket ball	Lea, Co. Laois	Lea Castle
1994C1:31	Lead object	Lea, Co. Laois	Probably Lea Castle
1994C1:32.1-.3	Lead objects	Lea, Co. Laois	Probably Lea Castle
1994C1:33	Cannon ball	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:34	Lead weight	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:35	lead weight (possible)	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:36	Lead shot	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:37	Lead shot	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:38	Lead weight (possible)	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:39	Decorated annular lead wight	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:40	Lead weight	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:43	Lead weight	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:42	lead weight	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:44	Clay pipe	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:45	Lead weight	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:46	Lead weight	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:47	Lead weight	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:48	Lead weight	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:49	Lead weight	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:50	Decorated gilt copper alloy cheek piece	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:51	Copper alloy coin	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:53	Gilt copper alloy medal	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:54	Copper alloy key-hole mount	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:55	Ornate copper alloy mount	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:52	Copper alloy coin	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:56	Ornate copper alloy mount	Lea, Co. Laois	Vicinity of Lea Castle and Church
1994C1:57	Copper alloy half groat	Lea, Co. Laois	Back of Lea Castle
2019:151	Copper Alloy Mirror	Lea, Co. Laois	Lea Castle
2009C2:28	Lead musket ball	Derryvilla	Derryvilla hill
2024:68	Human remains	Derryvilla	n/a
1000:364, 1000:364.1-.3	Four Wooden Peg's	Derrylea, Co. Kildare	Hodgson's Briquette Factory
1000:365.1	Stone Object	Derrylea, Co. Kildare	Hodgson's Briquette Factory
1000:365.2	Stone Object	Derrylea, Co. Kildare	Hodgson's Briquette Factory
1000:366	Animal bone	Derrylea, Co. Kildare	Hodgson's Briquette Factory
1929:1199	Bronze rapier with rivet	Clogheen, Co. Kildare	River Barrow at Portmur-raghan Island
1929:1174	Polished stone axehead	Coolnafearagh, Co. Kildare	River Barrow South of Pass Bridge
1932:6645	Stone axehead	Coolnafearagh, Co. Kildare	River Barrow
1932:6648	Stone axehead	Coolnafearagh, Co. Kildare	River Barrow, Pass Bridge
1929:1164	Bronze Lisburn-type dirk	Skirteen, Co. Kildare	River Barrow South of canal aqueduct
1929:1166	Polished stone axehead	Skirteen, Co. Kildare	River Barrow South of canal aqueduct
1930:120	Stone Axehead	Skirteen, Co. Kildare	River Barrow at Skirteen
1930:121	Stone Axehead	Skirteen, Co. Kildare	River Barrow at Skirteen

NMI NO.	OBJECT(S)	TOWNLAND	FIND PLACE
1930:124	Polished stone axehead	Skirteen, Co. Kildare	River Barrow at Skirteen
1930:125	Stone Axehead	Skirteen, Co. Kildare	River Barrow at Skirteen
1930_41	Stone Axehead	Skirteen, Co. Kildare	Riverbed River Barrow
1930_42	Polished stone axehead	Skirteen, Co. Kildare	Riverbed River Barrow
1930:526	Stone Axehead	Skirteen, Co. Kildare	Riverbed of River Barrow
1931:189	Stone Axehead	Passlands, Co. Kildare	Riverbed River Barrow
1931:190	Stone Axehead	Passlands, Co. Kildare	Riverbed River Barrow
1931:191	Stone axehead	Passlands, Co. Kildare	Riverbed River Barrow
1929:1163	Stone chisel	Passlands, Co. Kildare	Riverbed of River Barrow south East of Pass Bridge
1929:1198	Polished stone axehead	Passlands, Co. Kildare	Riverbed River Barrow at Pass Bridge
1931:184	Polished stone axehead	Passlands, Co. Kildare	Riverbed River Barrow
1931:176	Stone axehead	Passlands, Co. Kildare	Riverbed River Barrow
1931:311	Stone axehead	Passlands, Co. Kildare	River Barrow
1931:177	Polished stone axehead	Passlands, Co. Kildare	Riverbed River Barrow
1929:1156	Stone axehead	Monasterevin, Co. Kildare	Riverbed River Barrow at Monasterevin
1929:1157	Bronze leaf-shaped spearhead	Monasterevin, Co. Kildare	Riverbed River Barrow at Monasterevin
1929:1165	Iron axehead	Monasterevin, Co. Kildare	Riverbed River North of Town Bridge
1929:1168	Stone adzehead	Monasterevin, Co. Kildare	Riverbed River Barrow North of Town Bridge
1929:1172	Bronze leaf-shaped peg-holed spearhead	Monasterevin, Co. Kildare	Riverbed River Barrow at Old Bridge
1929:1173	Bronze leaf-shaped spearhead	Monasterevin, Co. Kildare	Riverbed River Barrow South of Old Canal Lock
1929:1185	Stone axehead	Monasterevin, Co. Kildare	Riverbed River Barrow opposite Monasterevin Church
1929:1193	Stone axehead	Monasterevin, Co. Kildare	Riverbed River Barrow under Canal Aqueduct
1929:1200	Polished stone axehead	Monasterevin, Co. Kildare	Riverbed River Barrow at Monasterevin
1930_16	Stone axehead	Monasterevin, Co. Kildare	Riverbed River Barrow
1930_17	Stone axehead	Monasterevin, Co. Kildare	Riverbed River Barrow
1931:181	Stone axehead	Monasterevin, Co. Kildare	Riverbed River Barrow
1931:297	Stone axehead	Monasterevin, Co. Kildare	Riverbed River Barrow
1932:6155	Stone axehead	Monasterevin, Co. Kildare	Riverbed River Barrow
1932:7040	Stone axehead	Monasterevin, Co. Kildare	Riverbed River Barrow Pass Bridge
1936: 1965	Stone axehead	Monasterevin, Co. Kildare	Ditch
1937:2432	Polished stone adzehead	Monasterevin, Co. Kildare	n/a
6796:W2	Copper alloy disc	Monasterevin, Co. Kildare	n/a
6797:W3	Bronze disc	Monasterevin, Co. Kildare	Monasterevin
6798:W4	Bronze 'Monasterevin' disc	Monasterevin, Co. Kildare	n/a
1922_15	Zoomorphic copper alloy brooch pin	Monasterevin, Co. Kildare	Oghil Bog

9.4.4 Aerial Photographic Analysis

Inspection of the aerial photographic coverage of the proposed development area held by the Ordnance Survey (1995–2013), Google Earth (2008–2025), Bing Maps, and Apple Maps revealed that the constraints area primarily comprises agricultural land stretching from Monasterevin to Portarlington along the Barrow River. Majority of Portarlington town is within the constraints area while only the western fringe of Monasterevin along the Grand Canal is within the study area. The towns of Portarlington and Monasterevin have undergone considerable growth since 1995 with numerous new housing developments and commercial development within the towns. The northern extent of the constraints area comprises Derrylea bog and agricultural land. The southern portion of the constraints area includes the Dublin-Cork Railway line and the Lea Road (R420), agricultural land and a wooded/bog area southwest of Monasterevin. No previously unrecorded sites of archaeological potential were noted in the coverage.

9.4.5 Areas of Archaeologival Potential

Areas of Archaeological Potential (AAPs) can be defined as parts of the landscape that possess the potential to contain archaeological remains due to the presence of topographic features such as rivers, lakes, turloughs, high defendable ground and bog. Rivers and lakes are a focus for human habitation due to the obvious transport and food resources. They also have the potential to preserve organic archaeological deposits or artefacts such as wood or leather, which do not usually survive within the alkaline conditions associated with terrestrial archaeology. Rivers and lakes may have also played a role in prehistoric ritual, as significant artefacts from the prehistoric periods and into the early medieval period, are often found within riverbed deposits. Any of these features within the constraints area, and their margins, should be considered as possessing archaeological potential. The Barrow River runs through the constraints area from Portarlington to Monasterevin. Derrylea Bog is situated in the northern extant of the development area, which is another area of high archaeological potential

9.4.6 Record of Protected Structures

A total of 70 individual or groups of protected structures are located within the constraints area. These are listed within the Record of Protected Structures included within the Laois County Development Plan 2021 – 2027, Offaly County Development Plan 2021 – 2027, Kildare County Development Plan 2023-2029 and are subject to statutory protection under the Planning and Development Act. The structures are listed in Table 5 below (Figure 9-3). Of the 70 protected structures, three are listed on both the RMP and the NIAH Survey; one is an RMP; and 45 are also included on the NIAH Survey.

Table 9-5 Protected Structures within the Study Area

RPS NO.	TOWNLAND	NAME	LEGAL STATUS
091	Cooltedery	Kilnacourt House, Main Street, Portarlington	RPS
092	Cooltedery	2 X 4-Bay, 2-Storey, Over-Basement Houses, Main Street, Portarlington	RPS
093	Cooltedery	The Elms (3-Bay, 2Storey, Over Basement House), Main Street, Portarlington	RPS
094	Cooltedery	An Teach Coiste, Main Street, Portarlington	RPS
095	Cooltedery	5-Bay, 2-Storey House (Veterinary Surgeon), Main Street, Portarlington	RPS
096	Cooltedery	Laurel House (3-Bay, 2Storey, Over Basement House), Main Street, Portarlington	RPS
097	Cooltedery	Marian House (3-Bay, 3Storey House), Main Street, Portarlington	RPS
098	Cooltedery	Ivy House (2-Bay, 3Storey House), Main Street, Portarlington	RPS
099	Cooltedery	House (4-Bay, 3Storey House), Main Street, Portarlington	RPS
100	Cooltedery	3-Bay, 2-Storey House, Main Street, Portarlington	RPS
101	Cooltedery	Rockwood House, 5-Bay, 3-Storey House, Main Street, Portarlington	RPS
102	Cooltedery	Irish Permanent Building Society (House), Main Street, Portarlington	RPS
103	Cooltedery	2-Bay, 3-Storey House, Main Street, Portarlington	RPS
104	Cooltedery	Garda Station, Main Street, Portarlington	RPS
105	Cooltedery	3-Bay, 2-Storey House, Main Street, Portarlington	RPS
106	Cooltedery	Higgins Builders/Pretty Lady (House), Main Street, Portarlington	RPS
107	Cooltedery	3-Bay, 3-Storey House, Main Street, Portarlington	RPS
108	Cooltedery	4 Bay, 3 Storey House (Whelehan's Central Stores),Main Street, Portarlington	RPS
109	Cooltedery	2 Bay, 2 Storey Building (Clelands), Main Street, Portarlington	RPS
110	Cooltedery	5-Bay, 3-Storey House/Mathews Coffee Shop & Bakery, Main Street, Portarlington	RPS
111	Cooltedery	5-Bay, 2-Storey Building / Vera's Shop, Main Street, Portarlington	RPS
112	Cooltedery	5-Bay, 2-Storey Building / Jewellers, Main Street, Portarlington	RPS
113	Cooltedery	Portarlington Market House, The Square, Portarlington	RPS
114	Cooltedery	4-Bay, 3-Storey House (Arches) The Square, Portarlington	RPS
115	Cooltedery	6-Bay, 3-Storey House (Finnegan Racing), The Square, Portarlington	RPS
116	Cooltedery	5-Bay, 3-Storey House & Bar	RPS
117	Cooltedery	The Spa Inn/House & Bar	RPS
118	Cooltedery	The Weighbridge Inn	RPS
119	Cooltedery	Church of Ireland Church	RPS, RMP
120	Cooltedery	Mullany's Pharmacy, The Square, Portarlington	RPS
121	Cooltedery	Saint Paul's Church of Ireland Church, French Church Street, Portarlington	RPS, RMP
123	Cooltedery	The Anvil Inn (7Bay, 3-Storey Building), Main Street, Portarlington	RPS
124	Cooltedery	Portarlington Catholic Club, Main Street, Portarlington	RPS
125	Cooltedery	3-Bay, 2-Storey House, Main Street, Portarlington	RPS

RPS NO.	TOWNLAND	NAME	LEGAL STATUS
126	Cooltedery	3-Bay, 3-Storey House, Main Street, Portarlington	RPS
127	Cooltedery	Post Office / 3-Bay, 2-Storey Building, Main Street, Portarlington	RPS
128a	Cooltedery	AIB & House, Main Street, Portarlington	RPS
128b	Cooltedery	Allied Irish Bank, Main Street, Portarlington	RPS
129	Cooltedery	Melrose House / 4Bay, 2-Storey House, Main Street, Portarlington	RPS
130	Cooltedery	4-Bay, 2-Storey House Main Street, Portarlington	RPS
131	Cooltedery	3-Bay, 2-Storey House, Main Street, Portarlington	RPS
132	Cooltedery	The Wilton & Adjacent House, Main Street, Portarlington	RPS
133	Cooltedery	Bank of Ireland, Main Street, Portarlington	RPS
134	Cooltedery	5-Bay, 3-Storey Over-Basement House, Main Street, Portarlington	RPS
135	Cooltedery	Portarlington Gospel Hall, Main Street, Portarlington	RPS
136	Cooltedery	3-Bay, 2-Storey, Main Street, Portarlington	RPS
137	Cooltedery	East End Hotel, Main Street, Portarlington	RPS
142	Cooltedery	5-Bay, 3-Storey House, Foxcroft Street, Portarlington	RPS
667	Cooltedery	Cooltedery School, Main Street, Portarlington	RPS
678	Cooltedery	O'Sullivan & Hutchinson Solicitors, Main Street, Portarlington	RPS
679	Cooltedery	Stylistics Hair Salon, Main Street, Portarlington	RPS
680	Cooltedery	House, Main Street, Portarlington	RPS
681	Cooltedery	House, Main Street, Portarlington	RPS
682	Cooltedery	Vincent Cryan, Main Street, Portarlington	RPS
684	Cooltedery	House, Main Street, Portarlington	RPS
685	Cooltedery	House, Main Street, Portarlington	RPS
686	Cooltedery	Stable Complex, Main Street, Portarlington	RPS
813	Cooltedery	3-Bay, 3-Storey House, Main Street North, Portarlington	RPS
403	Lea	13th Century Lea Castle, Lea, Co. Laois	RPS, RMP
559	Lea	Lea Castle House, Lea, Portarlington, Co. Laois	RPS
550	Kilmullen	Kilmullen House, Kilmullen, Portarlington	RPS
826	Loughmansland Glebe	Bergin's Bridge, Loughmansland Glebe, Co. Laois	RPS
547	Clonanny	Wheelahan's Bridge, Clonanny, Portarlington	RPS
827	Inchacooly	Baylough Bridge, Inchacooly, Co Kildare.	RPS
828	Tirhoger	Railway Bridge, Tirhoger, Co. Laois	RPS
46-23	Trascan	Trascan House, Trascan, Co. Offaly	RPS
B21-02	Coolnafearagh	Pass Bridge, Monasterevin, Co. Kildare	RPS, RMP
B26-20	Coolnafearagh	Barrow Bridge, Monasterevin, Co. Kildare	RPS
B26-22	Monasterevin	Canal Harbour, (off), Monasterevin, Co. Kildare	RPS
B26-23	Monasterevin	Monasterevin Aqueduct, Monasterevin, Co. Kildare	RPS
B26-24	Monasterevin	Bridge, Monasterevin, Co. Kildare	RPS

9.4.7 Laois Industrial Heritage

9.4.7.1 Bridges of County Laois

A study of the bridges of County Laois was undertaken in 2009, which recorded over 470 bridges across Co. Laois (Figure 9-5; Table 9-6). The study was commissioned by Laois County Council as an action of the Laois Heritage Plan 2007 – 2011 and undertaken by Fred Hammond. The main objective of the project was to identify and record the bridges throughout Laois and note examples that warranted statutory protection. There are a total of 17 bridges listed within the constraints area. Of the 17 bridges, one listed on both the RPS and the NIAH Survey; two are an RMP; and two are also included on the record of protected structures.

9.4.7.2 Mountmellick Canal Industrial Heritage Record County Laois

The Mountmellick Canal runs from Monasterevin to Mountmellick, a distance of 18.6km. It starts at Mountmellick Junction, on the Grand Canal just west of the Barrow Aqueduct, runs westwards around Portarlington, and terminates on the east side of Mountmellick. A study of the built heritage of the Mountmellick Canal was commissioned by Laois County Council as an action of the Laois Heritage Plan 2002-2006 which recorded canal related features within 500m of the Mountmellick Canal. There are a total of 31 industrial structures listed within the constraints area (Figure 9-5, Table 9-7). Of the 31 bridges, two are listed on the NIAH, four listed on both the RPS and the NIAH Survey; three listed on the RMP; and two are also included on the record of protected structures and RMP.

Table 9-6 Bridges of County Laois within the Study Area

LAIAR NO.	TOWNLAND	NAME	LEGAL STATUS
LAIAR-005-002	Droughill	Spa Bridge	RMP
LAIAR-005-011	Backlone	Lock Bridge	-
LAIAR-005-014	Lea	Lea Bridge	-
LAIAR-005-016	Loughmansland Glebe	Bergin's Bridge	RPS
LAIAR-005-017	Clonanny	Wheelahan's Bridge	RPS
LAIAR-005-018	Clonanny	Culvert	-
LAIAR-005-020	Lea	Foot Bridge	-
LAIAR-005-021	Inchacooly (Co. Offaly)	Scaravagh Bridge; Scorraus Bridge	-
LAIAR-005-022	Inchacooly (Co. Kildare)	Baylough Bridge; Bella Bridge	RPS
LAIAR-005-031	Tirhogar	Railway Bridge	RPS
LAIAR-005-033	Derrynafunshion	Railway Bridge	-
LAIAR-005-034	Kilmullen	Railway Bridge	-
LAIAR-005-036	Kilmullen	Railway Bridge	-
LAIAR-005-037	Clonanny	Railway Bridge	-
LAIAR-005-040	Bracklone	Culvert	-
LAIAR-005-041	Bracklone	Culvert	-
LAIAR-005-052	Cooltedery	New Channel Bridge	RMP

Table 9-7 Mountmellick Canal Industrial Heritage County Laois within the Study Area

FEATURE NO.	TOWNLAND	NAME	LEGAL STATUS
F001	Coolnafearagh, Skirteen	Mountmellick Junction	-
F002	Coolnafearagh, Skirteen	Johnny Dunne's Bridge	-
F003	Coolnafearagh	Railway Bridge	-
F101a	Coolnafearagh	Coughlan's Lock; 1st lock	-
F101b	Coolnafearagh	Coughlan's Bridge	-
F101c	Coolnafearagh	Coughlan's Lock House	-
F101d	Coolnafearagh	Canal Overflow	-
F102	Clonanny	Culvert	-
F103	Clonanny	Wheelahan's Bridge	RPS
F107	Bracklone	Culvert	-
F108	Bracklone	Culvert	-
F106	Lea	Lea Bridge	-
F201a	Bracklone	Portarlington Lock; 2nd lock	-
F201b	Bracklone	Lock Bridge	-
F201c	Bracklone	Portarlington Lock House	-
F201d	Bracklone	Quay	-
F201e	Bracklone	Canal Store	-
F902	Coolnafearagh; Passland	Barrow Bridge	RPS
F903	Passland	Pass Bridge	RMP, RPS
F904	Clonanny	Mile Marker	-
F905	Clonanny	Balladoogara Fort	RMP
F906	Kilmullen	Kilmullen House	RPS
F907	Lea	Lea Mill	-
F908	Lea	Lea Church	RMP
F909	Lea	Lea Castle House	RPS
F910	Lea	Lea Castle	RMP; RPS
F911	Lea	Quarry (limestone)	-
F912	Lea	Mile Marker	-
F913	Cooltedery	Enclosure	RMP
F104	Loughmansland Glebe	Canal Overflow	-
F105	Loughmansland Glebe	Bergin's Bridge	-

9.4.8 Architectural Conservation Areas (ACAS)

An Architectural Conservation Area is defined as 'A place, area, group of structures or townscape, taking account of building lines and heights, that is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or that contributes to the appreciation of a protected structure, and whose character it is an objective of a development plan to preserve.' (Architectural Heritage Protection Guidelines 2011, 40). Chapter II of Part IV of the Planning and Development Act 2000 states that that all development plans must now include objectives for preserving the character of ACAs.

ACAs are subject to statutory protection and are a key architectural heritage constraint. There are no ACA's within the constraints. Monasterevin is a newly formed ACA located just outside the study area. It is proposed that Portarlington town centre be designated as an ACA, but this has yet to be defined in the county or town development plan.

9.4.9 NIAH: Built Heritage Survey

A total of 49 structures or groups of structures are located within the constraints area, which have been included within the NIAH survey (Table 9-8). Whilst inclusion in the survey does not result in statutory protection, these buildings may be added to the RPS by Laois, Offaly or Kildare County Council in the future. Of the 49 structures, 45 are also listed within the RMP and/or RPS thus meaning that they do receive statutory protection under the National Monuments Act and Planning and Development Act (Figure 9-4).

Table 9-8 NIAH Structures within the Study Area

NIAH NO.	TOWNLAND	NAME	LEGAL STATUS
12900203	Cooltedery, Co. Laois	Saint Paul's Church of Ireland Church	RMP, RPS
12900204	Cooltedery, Co. Laois	Portarlington Church of Ireland Church (Community Centre)	RMP, RPS
12900206	Cooltedery, Co. Laois	The Spa Inn (Public House)	RPS
12900209	Cooltedery, Co. Laois	Portarlington Market House (Filling Station)	-
12900210	Cooltedery, Co. Laois	The Anvil Inn	RPS
12900211	Cooltedery, Co. Laois	Portarlington Catholic Club (Club-house)	RPS
12900212	Cooltedery, Co. Laois	Allied Irish Bank (Office)	RPS
12900213	Cooltedery, Co. Laois	House	RPS
12900214	Cooltedery, Co. Laois	Melrose House	RPS
12900215	Cooltedery, Co. Laois	Portarlington Garda Station	RPS
12900216	Cooltedery, Co. Laois	Matthew's Coffee Shop	RPS
12900217	Cooltedery, Co. Laois	Cooltedery School	RPS
12900220	Cooltedery, Co. Laois	House	-
12900221	Cooltedery, Co. Laois	House	RPS
12900222	Cooltedery, Co. Laois	Higgins Builders (Office)	RPS
12900227	Cooltedery, Co. Laois	House	RPS
12900229	Cooltedery, Co. Laois	Bank of Ireland (House)	RPS
12900230	Cooltedery, Co. Laois	House	RPS
12900231	Cooltedery, Co. Laois	Portarlington Gospel Hall (Church/ Chapel)	RPS
12900232	Cooltedery, Co. Laois	East End Hotel (House)	RPS
12900233	Cooltedery, Co. Laois	House	RPS
12900234	Cooltedery, Co. Laois	House	RPS
12900235	Cooltedery, Co. Laois	The Elms House	RPS
12900236	Cooltedery, Co. Laois	Laurel House	RPS
12900238	Cooltedery, Co. Laois	Ivy House	RPS
12900239	Cooltedery, Co. Laois	House	RPS
12900237	Cooltedery, Co. Laois	Marian House	RPS
12900240	Cooltedery, Co. Laois	House	RPS
12900241	Cooltedery, Co. Laois	House	RPS
12900242	Cooltedery, Co. Laois	Irish Permanent Building Society (Shop)	RPS
12900243	Cooltedery, Co. Laois	Kilnacourt House	RPS
12900244	Cooltedery, Co. Laois	Milestone/Milepost	-
12900245	Cooltedery, Co. Laois	House	RPS
12900246	Cooltedery, Co. Laois	Stables	RPS
12900247	Cooltedery, Co. Laois	John Maher Veterinary Surgeon	RPS
12900248	Cooltedery, Co. Laois	House	RPS
12800551	Clonanny, Co. Laois	Wheelahan's Bridge	RPS
12800555	Lea, Co. Laois	Lea Castle House	RPS
12800556	Kilmullen, Co. Laois	Kilmullen House	RPS
12900228	Cooltedery, Co. Laois	The Wilton	RPS
12900208	Cooltedery, Co. Laois	Finnegan Racing (Shop)	RPS
12900207	Cooltedery, Co. Laois	The Ramble Inn (Public House)	RPS
11816100	Cooltedery, Co. Laois	Pass Bridge	RMP; RPS
11816001	Cooltedery, Co. Laois	Barrow Bridge	RPS
11816105	Cooltedery, Co. Laois	Bridge	-
11816003	Cooltedery, Co. Laois	Bridge	RPS
11816005	Coolnafearagh, Skirteen, Co. Laois	Bridge	RPS
11816004	Monasterevin, Skirteen, Co. Kildare	Monasterevin Aqueduct	RPS
14934001	Trascan, Co. Offaly	Trascan House	RPS

9.4.10 Designed Landscapes

The first edition Ordnance Survey map of County Dublin (1843) shows the extent of demesne landscapes as shaded portions of land within the constraints area. These were established as a naturalised landscaped setting for the large houses of the landed gentry. Later OS mapping (1871-1909) can also indicate demesne extent, although they are not always shaded. Not all demesne landscapes are subject to statutory protection. However, where a demesne exists in association with a protected structure (dependant on the preservation of the landscape), this can be considered to be part of the curtilage and as such falls within the remit of the Planning and Development Act 2000.

Four designed landscapes have been identified from the desktop resource wholly or partially within the constraints area (Figure 9-3). These are described below in Table 9-9. Of the four landscapes, three retain their principal structures. India Ville or Kilnacourt House and Killmullen House are listed on the RPS and NIAH.

Table 9-9 Designed Landscapes within the Study Area

DEMESNE NAME	NIAH GARDEN SURVEY NO.	TOWNLAND	ADDITIONAL COMMENT
India Ville	180	Derrycosh	India Ville is annotated north of the Main Street Portarlington. It is labelled as India Ville on the first edition OS map and then Kilnacourt House on the 25 inch OS map. The demesne extends across the River Barrow by a bridge. The demesne contains designed gardens, walkways and a pond. Today the principal structure remains extant but the entire demesne has been subject to modern development.
Sally Park	189	Ballintogher	Sally Park noted on the first edition map as a large demesne. The Sally Park demesne contains Sally Park House, designed gardens, a treelined avenue and a number of large fields. The demesne is illustrated as being smaller on the 25 inch OS map. Today the principal structure remains, along with a small amount of specimen planting. The demesne as a whole has been subsumed back into an agricultural landscape.
Kilmullen House	190	Kilmullen	Kilmullen House is depicted as a large demesne on the first edition OS map. Kilmullen house is depicted with a designed garden and a number of outbuildings to its south. The demesne is illustrated as being smaller on the 25 inch OS map and truncated by the railway. Today the principal structure remains present and whilst the core of the demesne landscape surrounding the house remains relatively well preserved, the wider landscape has been subject to development.
Derry Lea House	1943	Derrylea	Derry Lea House is located within the north-east section of the study area. The demesne is shown on the 25 inch OS map in association with Derry Lea House and a number of outbuildings. The landscape features multiple tree belts and clumps with a gate lodge to the south. Today the principal structure and outbuildings have been removed and the core of the landscape has been redeveloped. Some planting has been removed, although multiple tree lined boundaries remain present.

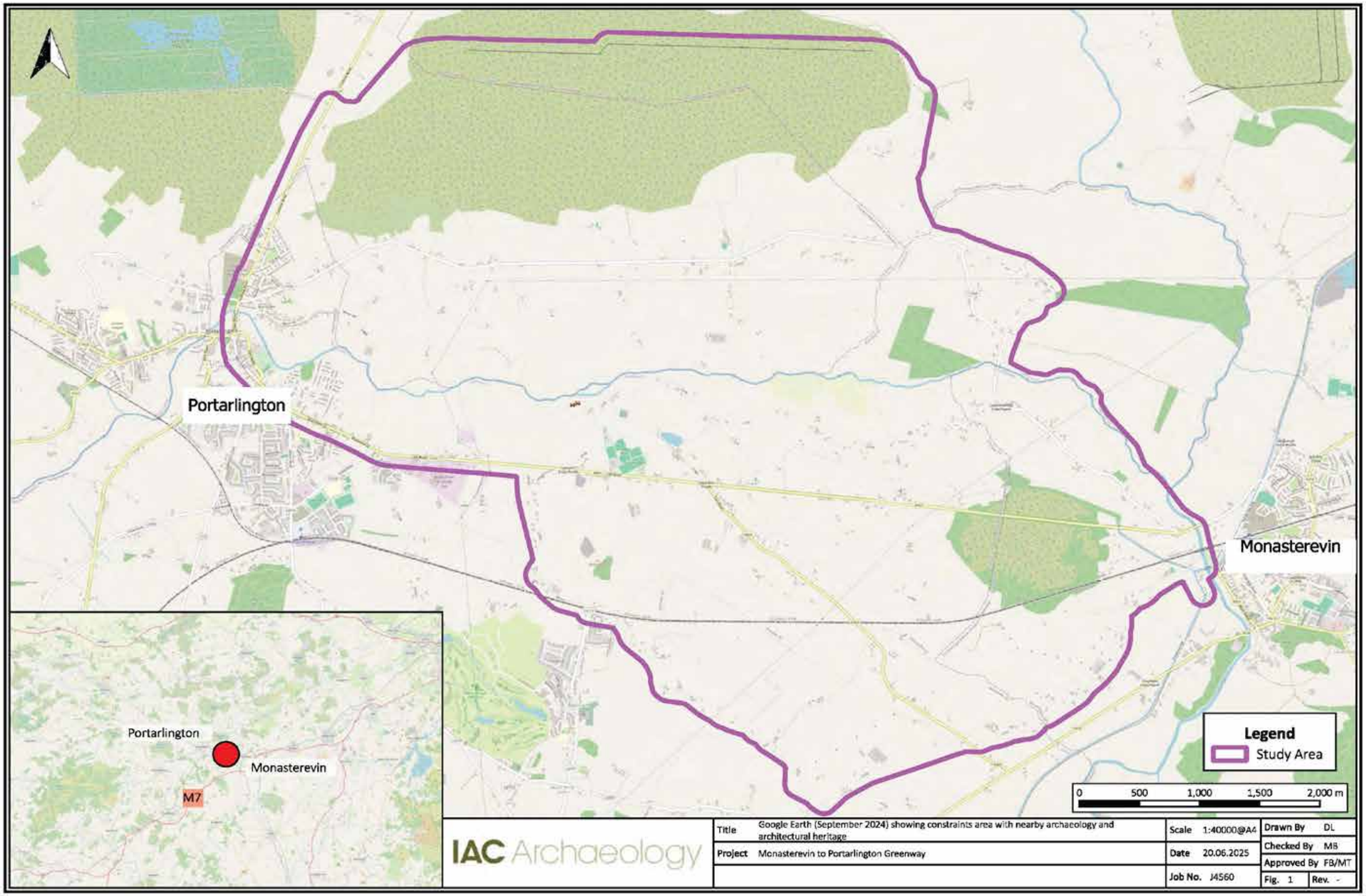


Figure 9-1 Study area with nearby archaeology and architectural heritage

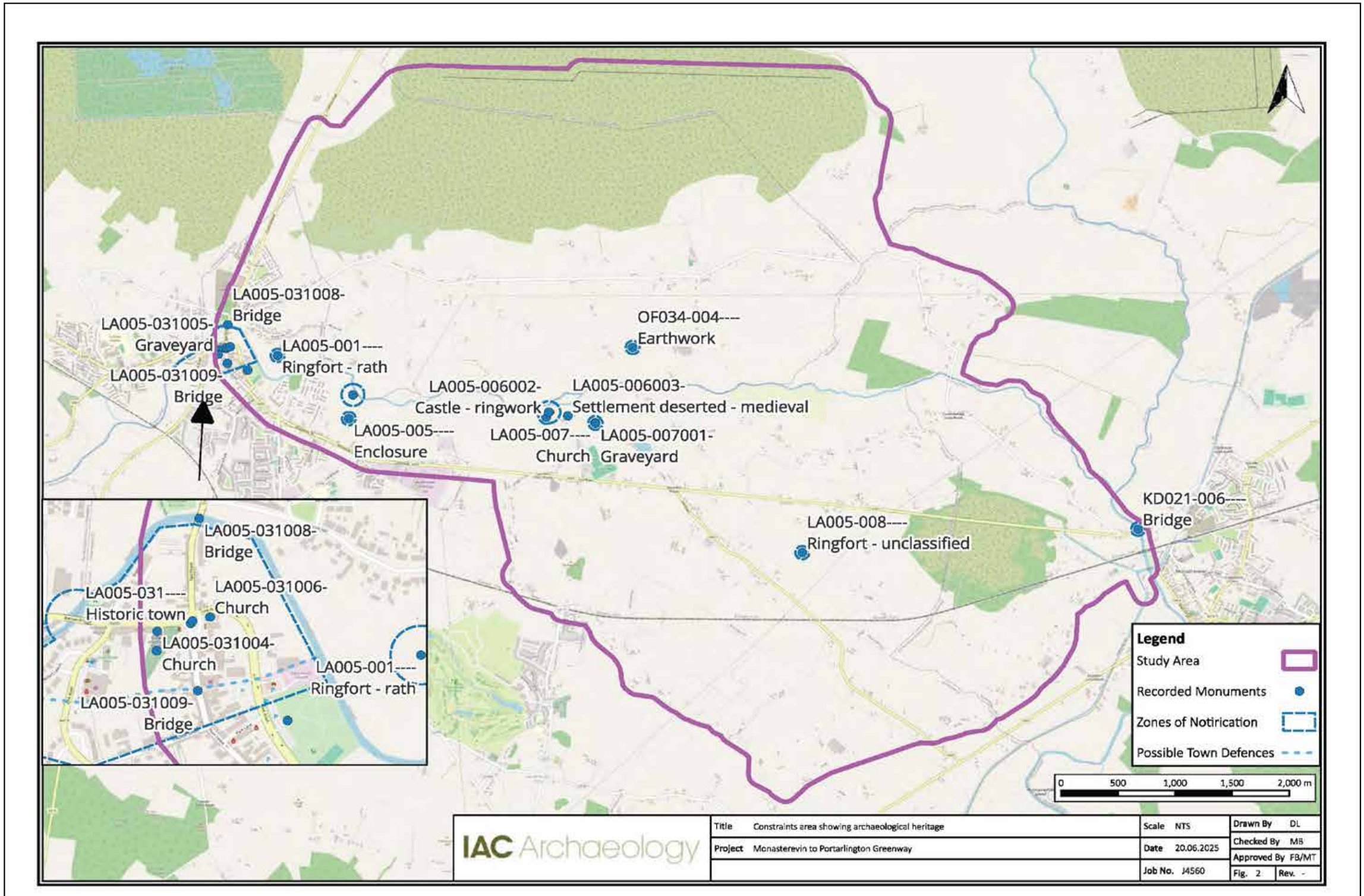


Figure 9-2 Study area showing archaeological heritage

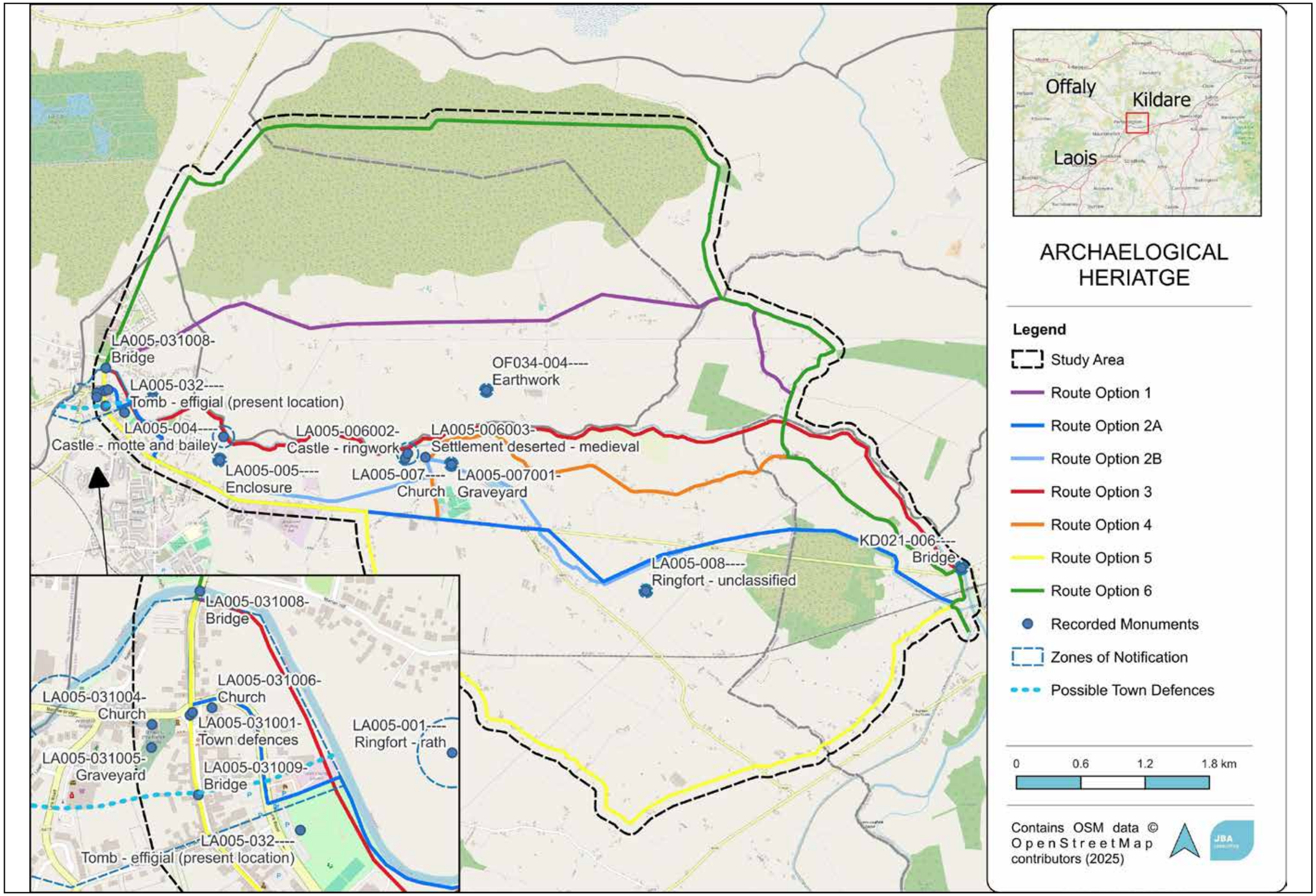


Figure 9-2b Study area showing archaeological heritage with Route Options

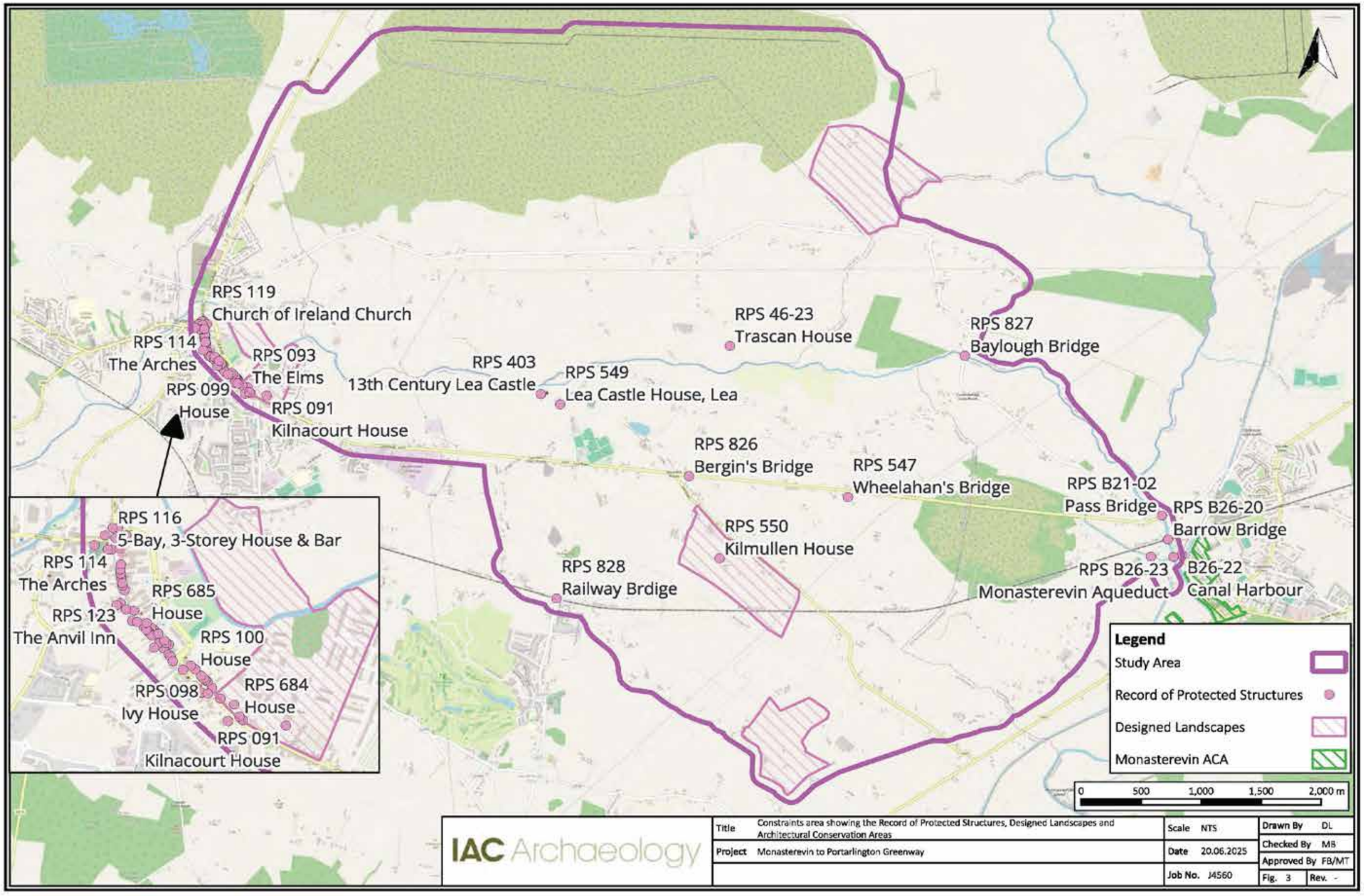


Figure 9-3a Study area showing the Record of Protected Structures, Designed Landscapes and Architectural Conservation Areas

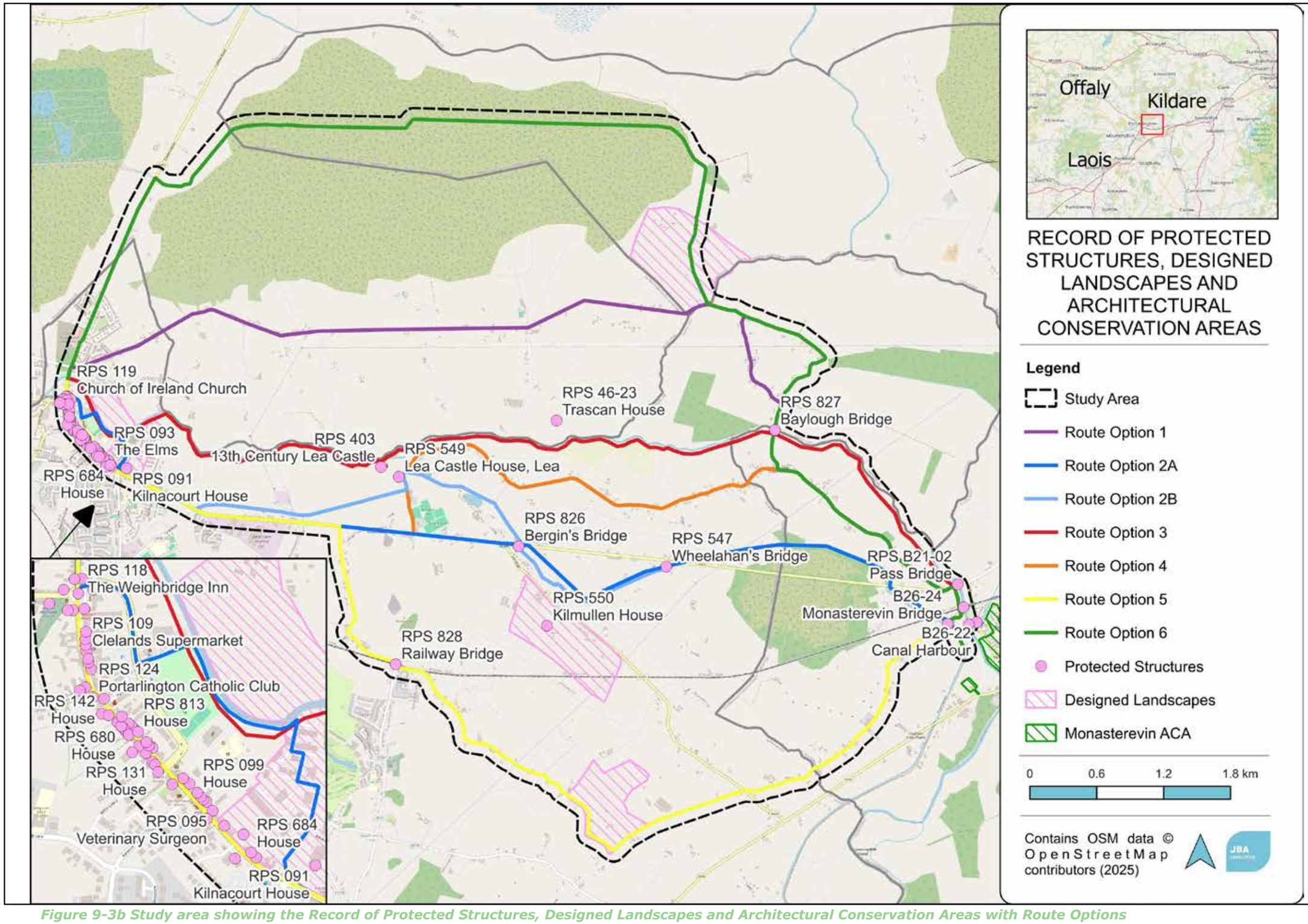


Figure 9-3b Study area showing the Record of Protected Structures, Designed Landscapes and Architectural Conservation Areas with Route Options

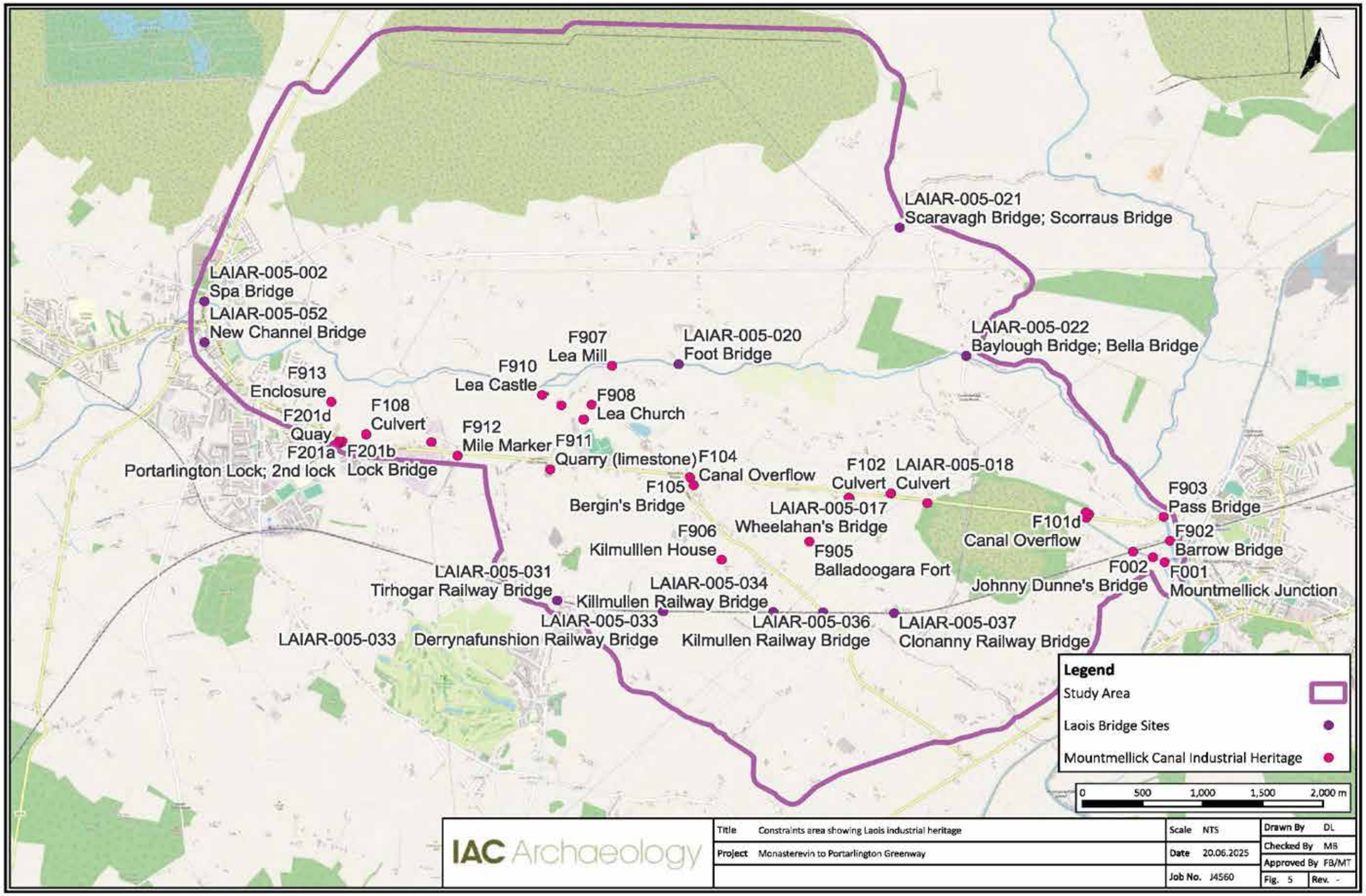


Figure 9-4a Study area showing National Inventory of Architectural Heritage

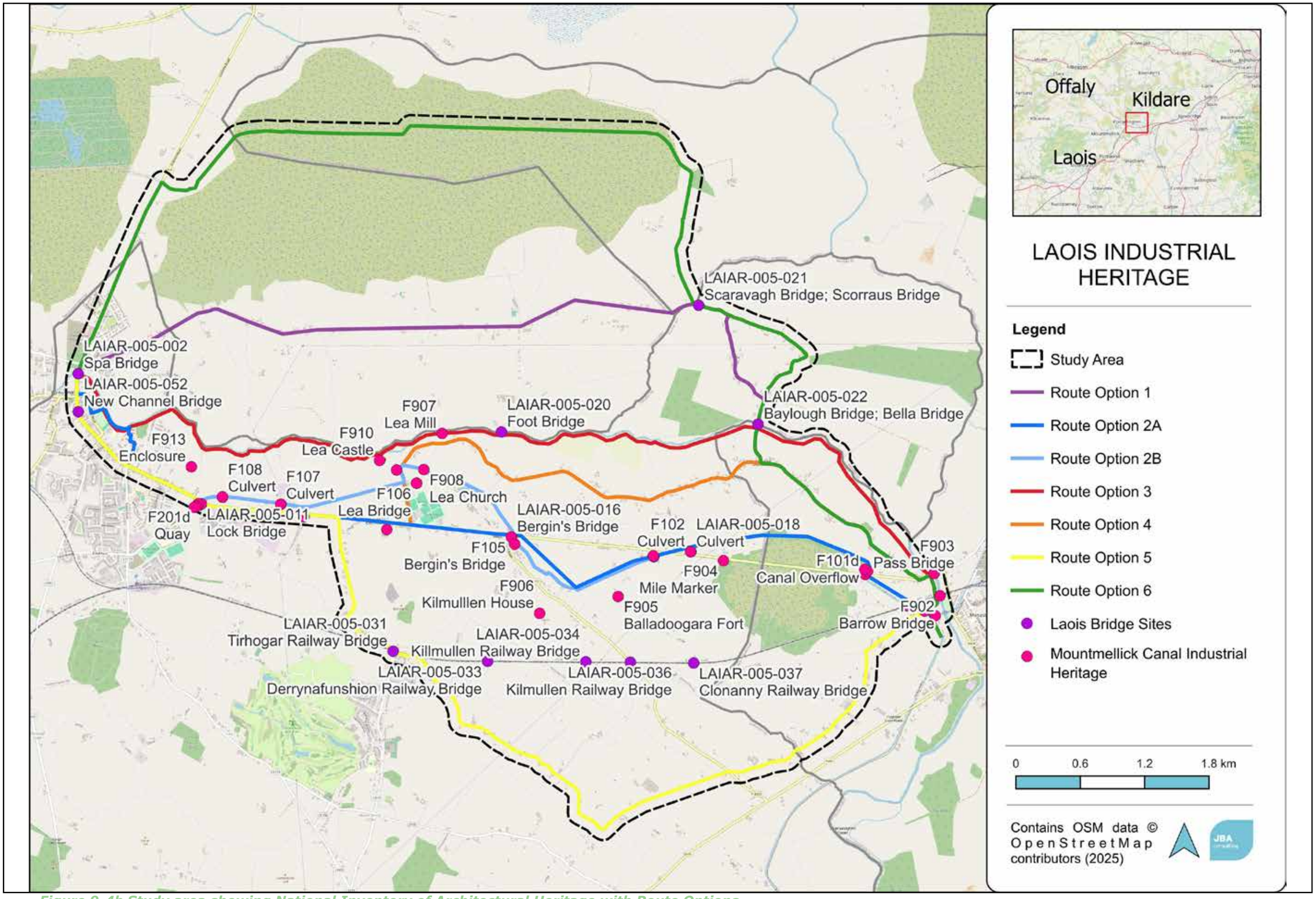


Figure 9-4b Study area showing National Inventory of Architectural Heritage with Route Options

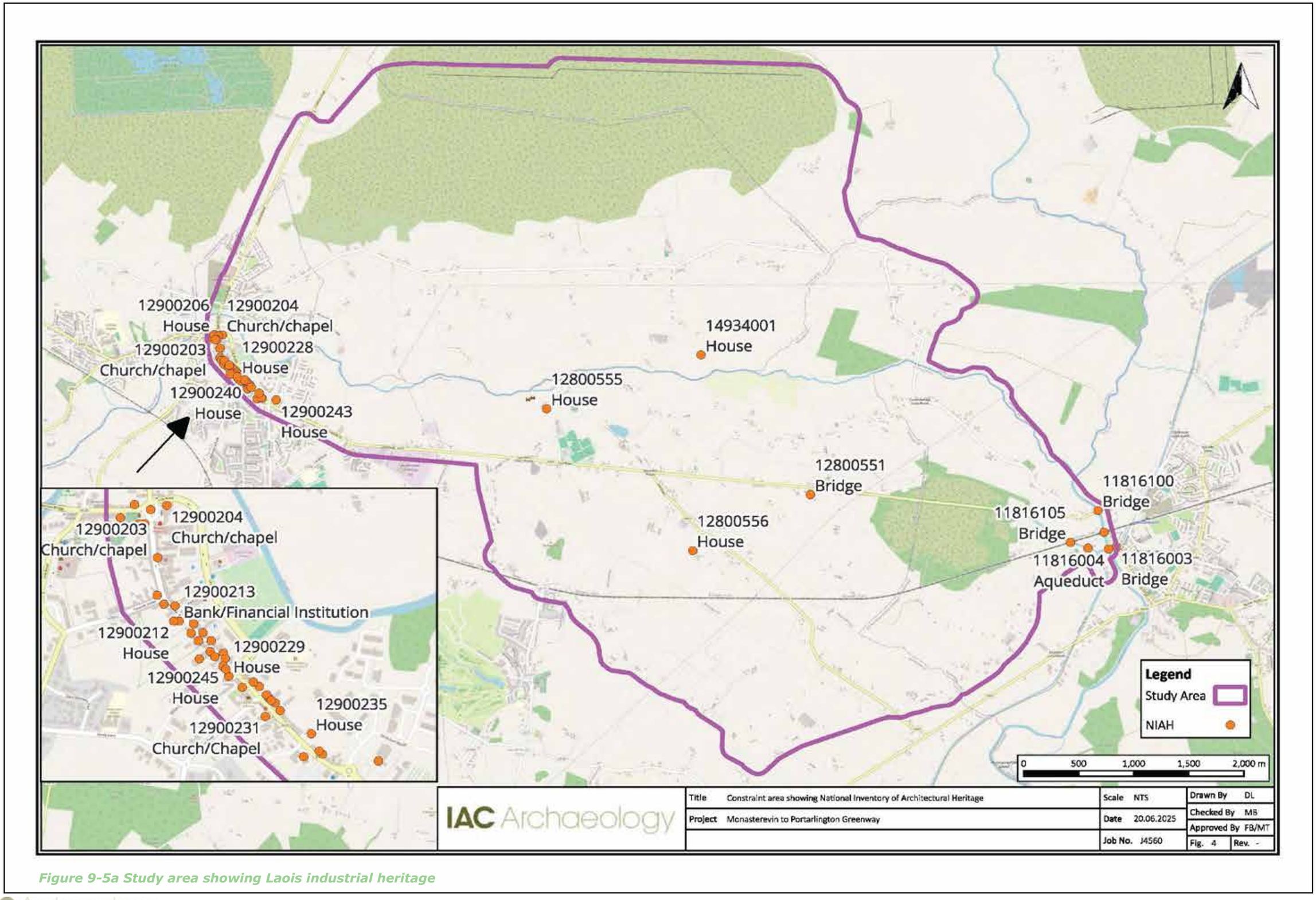


Figure 9-5a Study area showing Laois industrial heritage

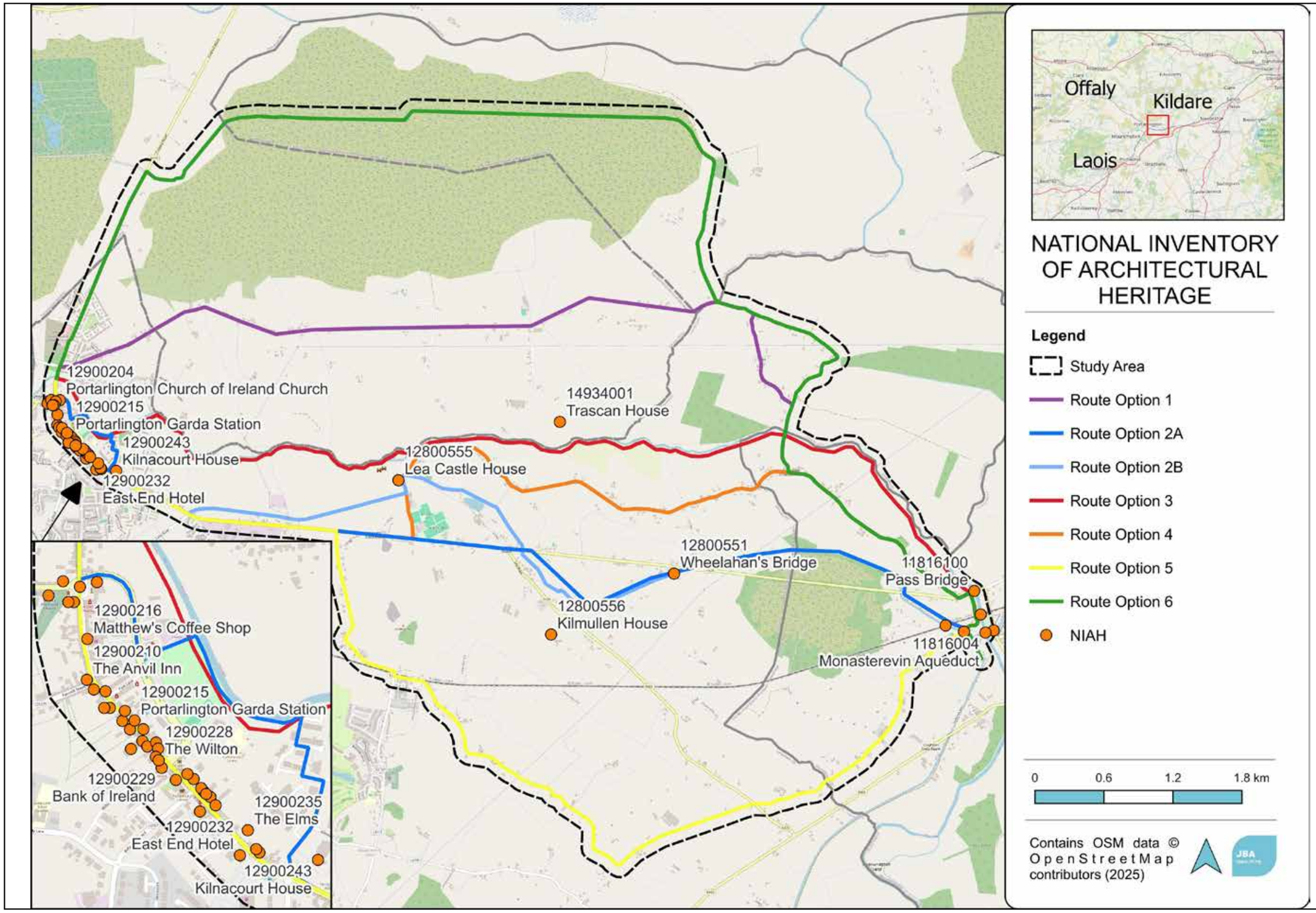


Figure 9-5b Study area showing Laois industrial heritage with Route Options

9.5 Summary and Conclusions

The purpose of this constraints study is to provide an analysis of the archaeological, architectural and cultural heritage resource within a study area in order to inform the design of the Monasterevin to Portarlington Greenway. The constraints area encompasses all or parts of 27 townlands, located within the civil parish of Lea, Clonyhurk, Lackagh or Monasterevin in the barony of Portnahinch, Upper Philipstown or West Offaly. The landscape is characterised by part of the towns of Monasterevin and Portarlington, agricultural fields, bogland to the north, forested areas and the River Barrow.

There are 19 recorded archaeological sites within the constraints area and one National Monument: Portarlington Town Defences (LA005-031001). There are multiple recorded archaeological sites within the historic town of Portarlington, and a number of sites associated with Lea Castle.

All recorded archaeological sites should be considered as key cultural heritage constraints and avoided where possible. All AAPs should also be considered as archaeological constraints and avoided where possible. Where avoidance is not possible, potential impacts should be minimised through design. This includes the use of clear span structures across water ways, for example. Any works that may affect recorded monuments, or the zone of archaeological potential for the historic town of Portarlington (LA005-031), will require detailed archaeological impact assessments with a suite of mitigation measures designed to reduce or remove any potential impacts upon the archaeological resource.

An analysis of the built heritage within the study area has provided a holistic view of the built heritage resource, with the later half of the post medieval period well-illustrated by the presence of a substantial number of residential dwellings and retail shops, as well as banks, church-related buildings and a garda station. Such structures that are architecturally and socially important are listed within the Laois, Offaly and Kildare Development Plan, NIAH survey for County Laois, Kildare and Offaly, Bridges of County Laois and An Ecological and Industrial Heritage Survey of the Mountmellick Canal.

A total of 70 individual or groups of protected structures are located within the constraints area. Of the 70 protected structures, three are listed on both the RMP and the NIAH Survey; one is also an RMP and 45 are also included on the NIAH Survey. Protected structures should be considered as key cultural heritage constraints during the design of the infrastructure with direct impacts and impacts on settings avoided where possible.

A total of 49 structures or groups of structures are located within the constraints area, which have been included within the NIAH survey. Whilst inclusion in the survey does not result in statutory protection, these buildings may be added to the RPS by Laois, Offaly or Kildare County Council in the future. Of the 49 structures, 45 are also listed within the RMP and/or RPS thus meaning that they do receive statutory protection under the National Monuments Act and Planning and Development Act

A study of the bridges of County Laois was undertaken in 2009 which recorded over 470 bridges across Co. Laois. There are a total of 17 bridges listed within the constraints area. Of the 17 bridges, one listed on both the RPS and the NIAH Survey; two are an RMP; and two are also included on the record of protected structures. Whilst inclusion in the survey does not result in statutory protection, these buildings may be added to the RPS by Laois County Council in the future.

A study of the built heritage of the Mountmellick Canal was commissioned by Laois County Council as an action of the Laois Heritage Plan 2002-2006. There are a total of 31 industrial structures listed within the constraints area. Of the 31 bridges, two are listed on the NIAH, four listed on both the RPS and the NIAH Survey; three are listed on the RMP; and two are also included on the RPS and RMP. Whilst inclusion in the survey does not result in statutory protection, these buildings may be added to the RPS by Laois County Council in the future.

It should be noted that there are no ACAs within the constraints area. The Monasterevin ACA is located just outside the study area.

A review of the Excavations Bulletin (1970–2025) has revealed that ten investigations have been carried out within the constraints area. No major features of archaeological potential were noted during the course of these investigations.

A total of four designed landscapes have been identified from the desktop resource wholly or partially within the constraints area. Of the four landscapes, three retain their principal structures. India Ville or Kilnacourt House and Killmullen House are listed on the RPS and NIAH. These landscapes should be considered as cultural heritage constraints during the design of infrastructure. Field inspections will be required to assess the exact nature and extent of the designed landscapes within the constraints area.

10.0 RECREATION & TOURISM

10.1 Tourism Performance & Backdrop – Nationally & Locally

10.1.1 Irish Tourism Performance Nationally

Ireland has made a very steady recovery from its lowest point in 2020 and 2021 to a much stronger level in 2024. Visitor numbers in 2024 showed a 3% decline compared to 2023; however, tourism spending increased significantly from the previous year.

10.1.2 Outlook for 2025 – Irish Tourism

The ongoing wars in Eastern Europe and the Middle East pose a sobering context for tourism's performance in 2025. Furthermore, President Trump's recent activity in the USA adds to trade and tariff uncertainty, which could depress travel demand from Ireland's most important source market. Although global inflation has eased, worldwide GDP growth remains subdued at around 3%. Prosperity in the EU is sluggish in part due to Germany's underperformance, while the UK's outlook looks underwhelming. Thankfully, the US economy continues to perform well, which augurs typically positively for travel and tourism.

The European Travel Commission forecasts that inbound tourism volume to the EU27 is set to increase by 8.1% in 2025. However, due to capacity and supply pressures, ITIC anticipates that growth in Irish tourism volume will be lower. The primary issue for growth is the continued passenger cap at Dublin Airport, which is a significant concern given that 70% of the Irish tourism economy relies on international visitation. The main gateway into the country must have sufficient capacity to accommodate growth. This winter, the airport cap has been evident, with air access into the country down 3%, the only Top 20 European destination to show a decline.

Overall, the economic backdrop for Ireland suggests that it is likely to experience lower growth in tourism compared to the European and global economies.

The following parts of the feasibility scope apply to this study area. This baseline analysis has aligned with these objectives as far as possible.

10.1.3 Tourism in Counties Kildare, Laois and Offaly

County Kildare is located in Ireland's Ancient East Region. According to Fáilte Ireland, before the COVID-19 pandemic, the county attracted an estimated 192,000 visitors who spent €104 million. Together with County Carlow, Kildare attracted 309,000 visitors in 2018, who spent a total of €36 million.

Kildare's competitive advantage as a destination is its location. The county is within a 30-minute drive of Dublin, which has a population of 1.9 million. Apart from access to the capital, the national primary routes (N7 and M4) serve as gateways to other major cities in the state, including Galway (2 hours), Kilkenny (1 hour), and Limerick (1 hour 45 minutes).

Tourism is a vital sector of Kildare's economy, having experienced substantial growth over the past few years. Due to its proximity to the Dublin tourism hub, the tourism sector requires a distinct strategic approach for success. This includes emphasising boutique and exceptional character hotels and other accommodation bases. Kildare boasts a diverse tourism portfolio, with a reputation for excellence in heritage, golf, equine, and horse racing. Whether operating individually, within clusters, or along touring routes, these facilities and activities must be developed and marketed as attractive day visits or touring options that appeal to domestic and international visitors. The trail development at Monasterevin to Portarlington appeals to a diverse range of recreational interests and potential users, including both domestic and global audiences.

Significant natural attractions include the Curragh plains, the bogs to the west, the rolling hills of the eastern uplands, the waterways of the River Liffey, the River Barrow and the Grand and Royal Canals. The county's rich architectural and archaeological heritage is acknowledged with many renowned structures and houses, including Castletown House, Carton House, the Wonderful Barn, Moone High Cross and Castledermot Round Tower.

Kildare is a significant visitor destination within the eastern region. Visitors' numbers and expenditure in the Mid East Region in 2022 reveal that there were 1.9 million tourism trips to the region and 4.6 million bed nights sold, with an estimated spend of €. COVID-19 has substantially impacted all regions. Still, most areas are on a solid rebound curve, which applies to Kildare. Kildare is well-positioned to develop, promote, and expand its tourism sector.

According to Fáilte Ireland (Kildare Accommodation Investment Toolkit), in terms of market mix, 52% of visitors to Kildare's top attractions were domestic leisure visitors. The greater bulk of visitors to Kildare Village likely fall into this category.

In addition to the above attractions, festivals and events are essential in attracting visitors to the county. Significant in this regard are the Curragh Irish Derby, the Punchestown Festival, the Taste of Kildare Food Festival, major golf events at the K-Club and Carton House, as well as music festivals.

Recent investments that are significant for tourism in the County include:

- The reinvestment at the Irish National Sud
- The Barrow Greenway

10.1.4 National & Regional Policy – Relevant to Tourism, Culture & Heritage

A list of the relevant plans and strategies is given below. Their examination reveals that the creation of a greenway, walking, and cycling route is strongly aligned with the policy framework, both nationally and locally.

- Project Ireland 2040.
- National Development Plan 2021 – 2030.
- Regional Economic & Spatial Strategy for the Eastern & Midland Regional Assembly (RSES).

- Rural Development Policy 2021 – 2025 (Our Rural Future).
- National Cycle Network.
- Fáilte Ireland – Greenways Visitor experience & Interpretation toolkit
- Fáilte Ireland – Ireland's Ancient East
- Kildare County Development Plan 2023 – 2029.
- Kildare County Council Heritage Plan.
- Laois County Development Plan 2021 - 2027
- Offaly County Development Plan 2021 – 2027
- National Outdoor Recreation Strategy 2023 - 2027
- Monasterevin Area Plan 2016 – 2022 and (draft) 2025-2031
- Portarlington Local Area Plan 2016 – 2024 and (draft) 2024 - 2030
- Open Space Strategy & Outdoor Recreation Strategy 2023 – 2029.
- People's Place & Policy, Growing Tourism to 2025.
- Strategy for the Future Development of National and Regional Greenways 2018.
- Failte Ireland Destination Attitudes Survey 2024 – Summary
- Fáilte Ireland - Ireland's Ancient East Regional Tourism Development Strategy 2023 – 2027
- Fáilte Ireland Key tourism facts 2023 Ireland's Ancient

The following are the benefits that are most noted in strategy documents:

- The creation of additional amenities and recreation facilities for local communities allows visitors to enjoy them equally.
- Additional economic benefits of people coming to the area and staying longer as a direct result of the new trail.
- Linkages to the wider trails and greenway network significantly scale up these benefits.
- Linkage to other public transport services and accessibility facilities

Some examples of directly relevant policy inclusions are as follows:

- (vi) Provision of recreation and amenity spaces – A key objective of the plan is to facilitate the delivery of an integrated walking and cycle network along the banks of the Grand Canal and River Barrow (The Barrow Blueway) as a recreational and tourism initiative led by Waterways Ireland
- T 1: To continue to work closely with key stakeholders in the tourism industry, including Kildare Fáilte, Fáilte Ireland, Waterways Ireland and the National Parks and Wildlife Services, to develop the overall tourist and economic potential of the town, with particular emphasis on the River Barrow and Grand Canal.
- T 2: To recognise and improve the existing tourism resources of Monasterevin, including the Grand Canal and River Barrow waterside amenity activities such as walking, cycling, angling and boating, and to facilitate their further enhancement.
- PCO 3: To facilitate the implementation of the objectives set out in the NTA Greater Dublin Area Cycle Network Plan 2013 and the River Barrow Cycling Trail Feasibility Study carried out by DECLG and LEADER, along with other local authorities and public bodies.
- PCO 4: To facilitate the implementation of the objective set out by Waterways Ireland to develop the Barrow Blueway, an integrated walking, cycling and recreational amenity trail.
- Derrynounce Bog – Trails development

10.2 Relevant Tourism & Recreational Plans

The Fáilte Ireland National Tourism strategy includes significant pillars relevant to this feasibility study. These are:

- Accelerate Domestic Tourism Demand,
- The Opening up of the Outdoors,
- Preparing the Pipeline of tourism products (and new product development as a core component of this pillar) and
- Reducing the Carbon Footprint

10.2.1 Ireland's Ancient East

Ireland's Ancient East is Fáilte Ireland's proposition for the eastern and southern areas, including Co. Kildare and Laois. The brand is rooted in its rich history and diverse cultural heritage, which are particularly prevalent in these regions.

Vision – Ireland's Ancient East

Fáilte Ireland describes the vision for Ireland's Ancient East as:

"Ireland's Ancient East will be an immersive experience of living culture, breathtaking and hidden history made remarkable by vibrant communities, local lore and authentic character of real Ireland."

Fáilte Ireland has identified Co. Kildare (and also Co. Wicklow) as having significant tourism development potential due to their proximity to Dublin and their powerful rural and environmental features.

The development of the new Greenway, a walking and cycling trail from Monasterevin to Portarlington, aligns perfectly with efforts to enhance infrastructure and expand tourism offerings.

Facilities and Infrastructure around Monasterevin and Portarlington

All of the main facilities of interest in the Monasterevin and Portarlinton area are shown in Figure 10-1 overpage.

10.2.2 Tourism Opportunities

This feasibility study aims to assess and evaluate the potential development of a Greenway, Walking, and Cycling link connecting the towns of Monasterevin and Portarlington, ultimately completing the connection to the Grand Canal Greenway and Barrow Blueway through the development of a Greenway.

For example, the provision of recreational hubs along the route will facilitate community interaction with the landscape and increase awareness of the natural environment. The various options arising from multiple connections, hubs, and amenities will be evaluated for all potential environmental impacts to select the most suitable, sustainable, and advantageous route.

The following parts of the feasibility scope apply to this study area. This baseline analysis has aligned with these objectives as far as possible.

This project is intended to connect to a broader project, that will enable a future extension (by others) to the surrounding townlands, the Grand Canal Greenway, the natural peatlands and along the River Barrow Blueway thus ensuring considerable opportunities for recreation, tourism, economic development and habitat creation between Co Kildare, Co. Laois and Co Offaly Proposed trails and amenities will be assessed according to location, settings and will take cognisance of the history and context of the proposed routes. Monasterevin's geographical features include the Barrow River, its tributaries, extensive bogland, and the limestone outcrop of Moore Abbey Hill. Structures such as the Pass Bridge (11816100) at Monasterevin are recognised for their

historical and architectural significance; it would be imperative to showcase history as part of future designs and developments.
Portarlington town centre features archaeological sites of interest and contains several Protected Structures (RPS). Laois County Council has identified it as a Zone of Archaeological Potential and is being appraised for an Architectural Conservation Area (ACA) designation, in collaboration with Offaly County Council. The combination of history, landscape, water, and active travel will aim to enhance each route section, both individually and collectively. Proposed trails will subsequently provide connectivity between towns and communities, creating the opportunity for additional recreational amenities and activities as part of these proposed connections.

10.3 Tourism Development - Walking & Cycling - National & Regional Backdrop

Irish Greenways have mushroomed since the success of the Westport to Achill trail, breathing new life into old railway lines, trails and canal paths - and providing safe and scenic ways for both locals and visitors to experience the Irish outdoors. This comes at a time when participation in cycle tourism is growing domestically and internationally. Visitors are increasingly seeking to enhance their health and well-being while also experiencing environmentally sustainable tourism.

10.3.1 Growth in Walking and Cycling Tourism

Over the past decade, Ireland has witnessed remarkable growth in walking and cycling tourism, transforming its rural landscapes, urban centres, and island trails into hubs for active travel. This shift has been propelled by sustained investment, strategic planning, and growing consumer demand for sustainable, health-oriented travel.

10.3.2 Cycling Tourism Growth

Over the last decade, Ireland's active tourism has undergone a dramatic shift—from the nascent greenways of the 2010s to today's expansive network, which integrates walking and cycling into economic recovery and climate action. With strong policy support, community-led trail development, and rising public demand, Ireland is well-positioned to further develop sustainable tourism, promote rural economies, and fulfil its environmental commitments.

10.4 Marketplace for Cycling/Walking

10.4.1 Greenways Expansion

The Great Western Greenway in Mayo opened fully by 2011. By 2013, it recorded around 172,000 annual users, delivering €1.1 million in economic benefits and a six-year payback on its €5.7 million investment (CSO Statistics)

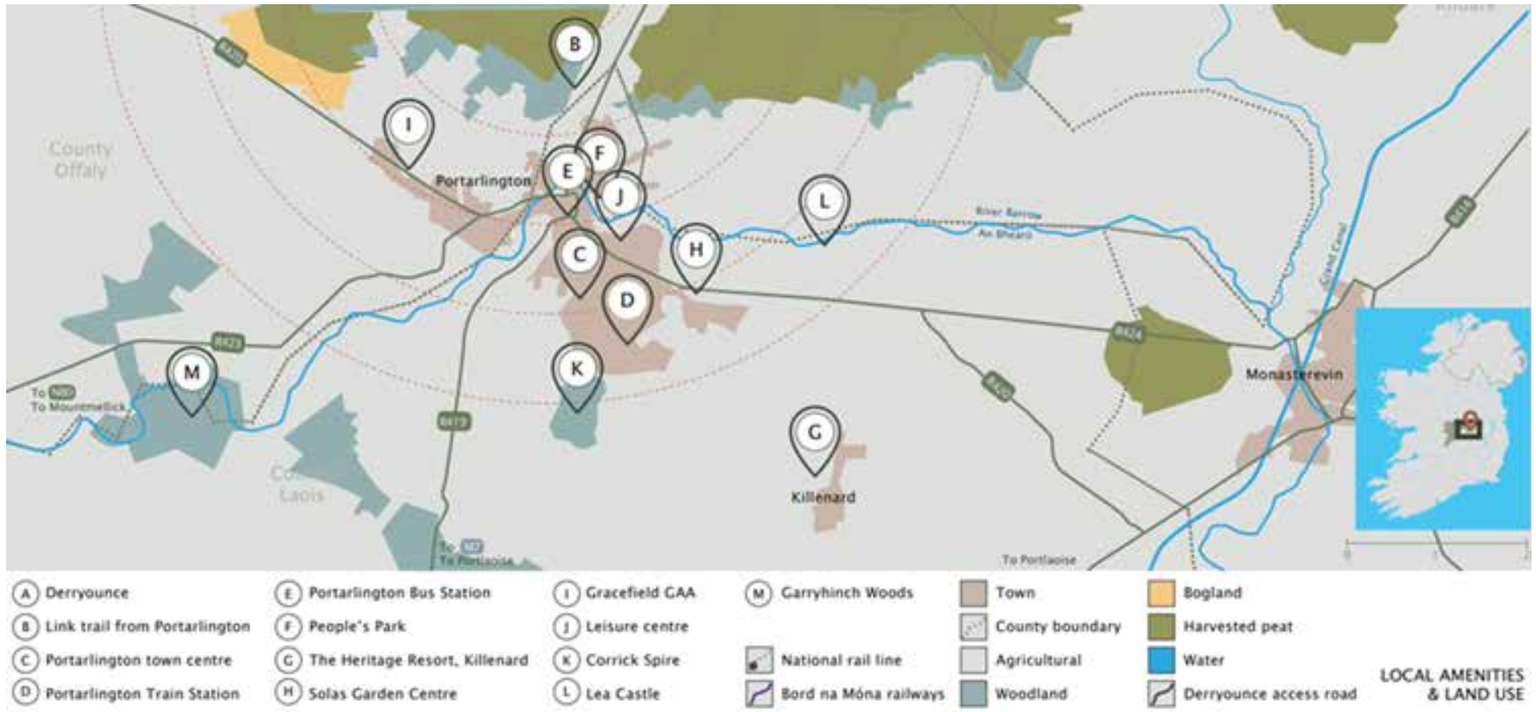


Figure 10-1 Main facilities of interest in the Monasterevin and Portarlinton area

The Waterford Greenway (46 km) opened in March 2017, attracting over 250,000 users by year's end.

The Royal Canal Greenway, launched in March 2021, became Ireland's longest at 130 km.

The Limerick Greenway, opened in June 2021, drew 500,000 visits in its first 10 months.

10.4.2 Major Projects & Investment

Under the 2020–2025 Programme for Government, at least 10% of transport capital funding was earmarked annually for cycling infrastructure.

Local authorities received €289 million in 2022 (up from €45 million in 2019) to build 1,000 km of active-travel routes by 2025.

10.4.3 Economic Momentum

Cycling as part of the Wild Atlantic Way Cycle Sportif has grown: the 2018 event covered 2,152 km in 16 stages, drawing ~100 riders per stage and generating €13 million plus 50,000 bed nights (Fáilte Ireland)

10.4.4 Walking Tourism Gains - National Walks Scheme

Since 2008, the Department of Rural Development has funded the development of walking trails on private and public lands. The most significant expansion to date, in February 2024, added trails in seven counties, including offshore islands.

10.4.4 Walking Tourism Gains - Towards a Sustainable Future

Post-COVID trends accelerated active travel: in 2020–21, 510,000 adults cycled weekly (up 260,000) and ~3.1 million walked for recreation—the highest levels ever recorded.

The National Sustainable Mobility Policy (2022) aims for 1,200 projects, 1,000 km of new routes, and 500,000 extra active trips per day by 2030

Peatland restoration under EU Just Transition funding (33,000 ha) will integrate walking and cycling trails, support 80 small businesses, and 200 tourist accommodations.

10.5 Failte Ireland - Direction and Advice for developing Greenways, Walking & Cycling Trails

Fáilte Ireland has extensive experience and analysis of developing tourism along greenways and Blueway's, which applies equally to tracks and trails that may not be as large.

The Fáilte Ireland toolkit on visitor amenities and best practices for greenways and Blueways is an excellent guide to developing visitor facilities and attractions.

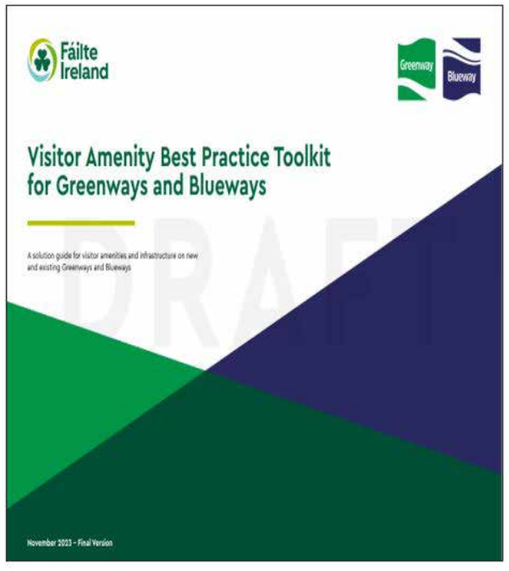


Figure 10-2 Fáilte Ireland Toolkit

The primary source documents for the Fáilte Ireland toolkit are the source reports for the Fáilte Ireland toolkit, indicating its excellent foundations and reference points.

The Fáilte Ireland toolkit covers all of the following areas – this will be developed in the course of this Feasibility Study.

- Location & Landscape Context
- Who will the users of the trail be?
- Access for All
- Branding
- Signage & Signposting
- Local Stories
- Arrival & Access
- Facilities

Fáilte Ireland – consideration of main features for visitors for greenways and Blueways:

- **Scenic** – are they of sufficient scenic value to attract visitors?
- **Safe** – are they safe and create no apparent risk factors?
- **Segregation** – are they separated from significant traffic routes?
- **Sites** – are there other attractions, facilities and exciting sites in the area?

10.6 Options Analysis – Developing the Greenway Trail

- National tourism is on a solid growth trend, fully recovering by late 2025 or 2026. Kildare Laois and Offaly are likely to follow the National trend closely.
- Growth is expected in Domestic and International Tourism. Recent Fáilte Ireland surveys on the Domestic audience indicate a growth pattern in trips taken in Ireland.
- Consumer travel performance in post-pandemic has shown a more significant concern for personal well-being, air quality, environmental impacts, desire for open spaces, and preference for active holidays.
- Fáilte Ireland's latest corporate strategy reflects the commitment to accelerate domestic tourism demand, transformation of Ireland's outdoor tourism experience, and reduction of the carbon footprint of the Irish tourism sector.
- Ireland's Ancient East Region is positioning itself as a cultural tourism destination focusing on cultural experiences, landscape, authenticity, and community engagement.
- National Strategic Planning is now supporting outdoor activity and related recreational initiatives.
- Walking, cycling, and other 'softer' outdoor activities are becoming increasingly popular and will continue to do so.
- The significant ageing and active demographics should form a major target group for future outdoor amenity developments.
- The Barrow Blueway is a significant regional tourism and recreational development.
- Significant infrastructure will be needed to meet the increased demand for outdoor activities.

10.6.1 Tourism Opportunities - Creating the Walking & Cycling Trail

The choice of a preferred route will encompass a wide array of key factors, including

- Segregation from Roads – How much of the trail will be physically segregated from roadways
- Land Ownership arrangements and whether it is physically possible to achieve permissions or ownership

- The natural terrain and how achievable the creation of the trail is
- Safety and Environment – what is the safest route and the most environmentally friendly
- Existing trails, clearances and infrastructure
- Scenery and natural features – proximity to villages, stop off points and existing attractions

Consideration of the tourism potential of the greenway, walking, & Cycling route involves an additional range of considerations.

Fáilte Ireland in its Greenways visitor experience and Interpretation toolkit (April 2021), as well as the Government's Strategy for the future development and National and Regional greenways (July 2018)

Identified five key points of attractiveness of greenway routes from a tourism point of view as follows:

For the Monasterevin to Portarlington greenway, each of the six route options must be considered against the five Ss as set out above –

- Strategic
- Scenic
- Sustainable
- Lots to see and do
- Substantially segregated
-

10.6.2 Tourism Opportunities - Unique Selling Points

To increase the tourism opportunities, any unique elements highlighting the local character should be taken into consideration for enhancement. For this project, it is worth considering:

- What does it traverse – scenery and interesting features – Bridges, rivers, villages, historic sites
- Is most of it off-road
- Is it interesting terrain
- Is it connected to other wider networks
- Is it close to other attractions in Kildare, Laois or Offaly

10.6.3 Tourism Opportunities - Discovery points along the walking and cycling trail

The short length of the trail may make it challenging to include discovery points; however, if it is linked to other larger greenways, this could be considered.

The common factors for each discovery point are:

- Sense of arrival – semaphore signal – seen from 1 km away
- Picnic area – tables and benches
- Bike parking
- Shelter – some shelter from rain
- Provision for servicing – close to/or limited road access
- Information Display

10.6.4 Tourism Opportunities - Target audience for the greenway, walking and cycle trail

Based on the FI market research and the experience in both Mayo and Waterford, we can define our likely target audience as follows:

- 80% Irish
- ABC1
- Culture Seekers
- Over 50s
- Families
- Groups
- Schools

10.6.5 Tourism Opportunities - Users of the Greenway, walking and Cycling trail

The central consideration for developing the new trial is the users and what experience and benefits they will gain from it. There is a range of considerations in the planning of the facility to ensure the experience is at the very highest level. These considerations are summarised in the following chart. This is sourced from the Fáilte Ireland toolkit of greenway development.

TII guidance relating to planning and designing of Greenways set out key principles like segregation, width, gradient, surface material, and integration with infrastructure and communities. short length of the trail may make it challenging to include discovery points; however, if it is linked to other larger greenways, this could be considered.

These considerations from a user point of view are referenced in the diagrams overpage.

10.7 Impact on Tourism & Recreation of the Walking & Cycle Trail

The benefits of the new trail can be summarised under three headings as follows:

Demand

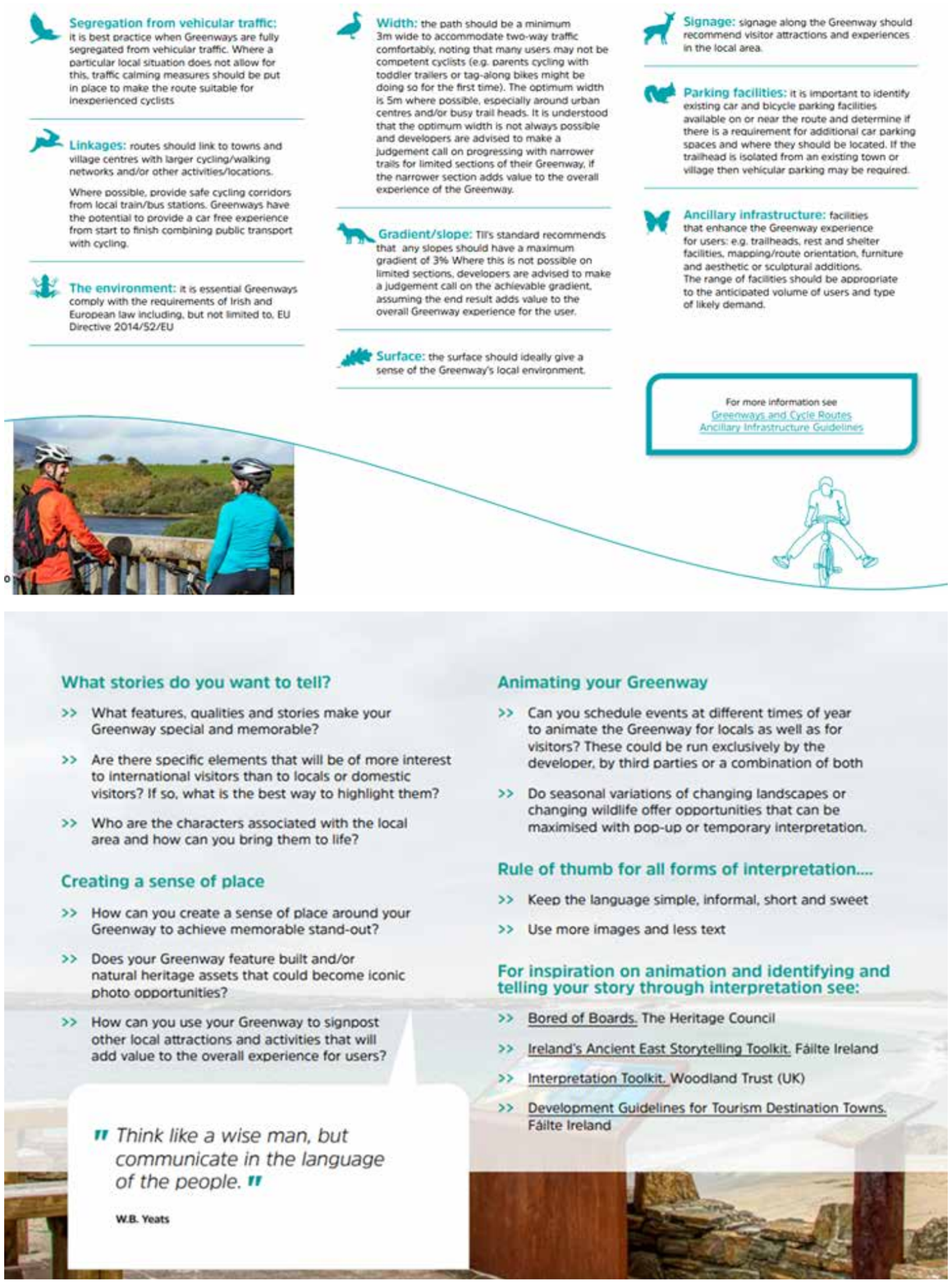
- Increased levels of usage by the international, domestic and local communities.
- Increased levels of dwell time in the area are reflected in higher occupancy rates among local accommodation providers.
- Increasing the annual user satisfaction of the new walking & cycling trail
- Increase in visitor spending in the local area, based on both day visitors and overnight guests.

Supply

- Increase in the number of new tourism enterprises aligned with the latest cycling & walking trail.
- Increase employment levels in existing and tourism enterprises.
- Increase in bed stock availability across the destination.
- Increase in new local visitor experiences development based on saleable experiences to visitors to the area as a result of the new trail.
- Increase in the volume of tourism industry training provision and participation levels.
- Expansion of operational periods for tourism businesses to extend operations beyond the peak tourism season.

The Destination

- Increase in the number of tourism enterprises offering bookable experiences across the Greenway and surrounding areas, allowing visitors to pre-plan their visit to the trail.
- An increase in tourism marketing activity, stimulated by the Walking & Cycling trail, and the absorption of content generated by social media channels.



10.8 Learnings from Existing Greenways

TII also sums up the top tips as a result of experience gained from existing greenways

Local Impact and Case Studies
The Greenways in Waterford, Westmeat, and Mayo have shown transformative economic impacts, particularly boosting small businesses in adjacent towns.

Effective Community Engagement
Early consultation is crucial. Listening to concerns builds trust.

Use a multi-disciplinary team with the right interpersonal skills to reach different local groups (landowners, tidy towns groups, business owners, local politicians, etc.).

Policy Integration
Apply learnings from Smarter Travel principles to inform sustainable and inclusive Greenway design.

Stakeholder Collaboration
Identify local champions to drive community buy-in and momentum.
Cultivate relationships with local bike hire companies early—strong leadership sets the tone for broader participation.

Business Collaboration
Work with local businesses to enable pop-up experiences or temporary services. Make permitting simple and accessible.

User-Oriented Planning
For families, 10km spacing between services (with playgrounds or food stops) works well.
Adults can manage 11–18km between stops, which aligns with typical travel behaviour.

Enhancing the Experience
Introduce planting schemes (e.g. orchards, wildflowers, insect hotels) to boost visual interest and invite local stewardship.

Communicating Broader Value
Emphasise the health, social, economic, and tourism benefits of Greenways to strengthen local and political support.

11.0 CLIMATE ACTION

11.1 Climate Action Plan 2024

Annually, the Climate Action Plan is published by the Government of Ireland which sets out carbon budgets and sectoral emissions ceilings and sets a roadmap for taking decisive action to halve our emissions by 2030. The Climate Action Plan 2024 (CAP2024) identifies the role active and sustainable travel can play in how Ireland adapts as a result of climate change and in mitigating the implications of such, the plan outlines the urgent need to accelerate these efforts.

CAP2024 requires transport planning and appraisal to prioritise interventions in line with the Sustainable Mobility Policy, and requires Ireland to:

- Avoid stimulating or facilitating increased greenhouse gas (GHG) emissions from transport, especially over the next 20 years;
- Support a shift to active travel and public transport, including by the reallocation of road space;
- Maintain our existing transport infrastructure; and
- Support the adaptation and resilience of existing, redesigned and new transport infrastructure to the impacts of climate change.

CAP2024 notes that priority will be given to "Safe Routes to School, Cycle Connects routes, the National Cycle Network and scenic greenways".

11.2 Kildare Climate Action Plan 2024-2029

Kildare County Council have published their own Climate Action Plan for 2024-2029. The Plan establishes actions that are to be taken by the Council, businesses and citizens in Co. Kildare to respond to the challenges of climate change. The Kildare CAP, like the CAP2024, has the Sustainable Mobility Policy as a central tool in achieving a more sustainable transport section through the Avoid-Shift-Improve principle:

- Avoid: Reduce the frequency and distance of trips;
- Shift: Move towards more environmentally friendly modes of transport, such as walking, cycling or using public transport; and
- Improve: Promoting efficient fuel and vehicle technologies

Several strategic goals in the Kildare CAP are relevant to this study. These include reallocation of road space for active travel and public transport, and supporting the Sustainable Mobility Policy. It also includes goals for developing and publishing a cycle network plan for the county, and expanding the greenway network across Kildare.

11.3 Offaly Climate Action Plan 2024-2029

Offaly County Council's Climate Action Plan outlines the Council's responsibility for improving climate resilience, boosting energy efficiency, and cutting greenhouse gas emissions across its operations. The CAP includes several initiatives to promote sustainable transport, with key actions including:

- The CAP emphasises the expansion and enhancement of cycling paths and lanes to encourage cycling as a primary mode of transportation.
- Initiatives are set to increase public awareness and participation in active travel options, such as cycling and walking, aiming to reduce reliance on motor vehicles.
- The council plans to collaborate with local communities to promote the benefits of cycling, including health advantages and environmental impact, through educational programs and events.

These measures aim to reduce greenhouse gas emissions, improve air quality, and enhance the overall health and well-being of Offaly's residents.

11.4 Laois Climate Action Plan 2024-2029

Laois County Council's Climate Action Plan includes several measures to encourage eco-friendly travel which include promoting and supporting the development of Cycle Buses, providing a safer and more sustainable way for children and commuters to travel by bike. This initiative aims to encourage active travel, reduce reliance on cars, and foster a healthier, more environmentally friendly transport culture in local communities.

The Council has also introduced an Upcycled Bike Library at People's Park, offering refurbished bicycles to schoolchildren. This program supports cycling education and improves access to active travel, making cycling a more viable everyday option.

Through these initiatives, Laois County Council is committed to enhancing cycling infrastructure, promoting eco-friendly commuting, and contributing to a cleaner, healthier environment. These goals are aligned with this study exploring the development of a greenway between Portarlington and Monasterevin.

11.5 Potential Constraints

Proposed developments within the study area are likely to be in accordance with the relevant climate action policies, both nationally and within Co. Kildare. The feasibility study will present an opportunity for Kildare County Council as well as Offaly and Laois County Councils, to contribute to its own policies under the Kildare CAP.

The Study will provide sustainable transport corridors and active travel routes between recreational areas, reducing the need for car travel and avoiding the emissions of GHG. This will benefit the Study area by decreasing traffic congestion, improving air quality and enhancing public health.

It is possible that, as several different areas of sustainable transport are to be prioritised under the Kildare CAP, the Feasibility Study may need to compete with others to gain funding and approval. Ensuring future developments within the study area are compliant with climate policies will be important.

Travel and transport infrastructure is generally resilient against potential climate impacts. Nonetheless, proposed designs must be cognisant of potential impacts with regard to flooding, increased rainfall, impacts to the green infrastructure and other climate changes.

12.0 BASELINE SUMMARY

12.1 Summary

This chapter summarises the multidisciplinary information from Chapters 1 to 11 and of the existing conditions, sensitivities and opportunities within the Monasterevin to Portarlington study area. It represents the final stage of the Stage 2 Baseline phase and acts as a bridge to the next phases of the project: Stage 3 Engagement and Stage 4 Options Report.

The corridor is dominated by the River Barrow and its broad riparian flood-plain; the Grand Canal Barrow Line intrudes only on the eastern margin at Monasterevin where it crosses the river on an aqueduct. Throughout the chapter the Barrow therefore provides the primary frame of reference for environmental value, structural heritage, community interaction and climate responsiveness.

Rather than restating the discipline-specific findings in isolation, the discussion that follows explains the ways in which hydrology, ecology, heritage, land ownership, traffic geometry and community demand actively pull the alignment toward, or push it away from, particular parts of the landscape. In this sense the chapter acts as a bridge between the descriptive baseline and the option-generation work that will commence immediately after stakeholder engagement.

Below is a summary according to key characteristics identified in this document.

12.1.1. Environment, Landscape, Heritage & Biodiversity

The River Barrow is the most important natural feature in the area between Monasterevin and Portarlington. It shapes the land, the plants and animals that live there, and the way people experience the landscape. The river often floods parts of its valley during winter and after heavy rain, especially in low-lying areas where the Figile River joins it. In dry weather, these flat areas are attractive for walking and cycling, but in wet conditions, they become too muddy or underwater. This means the greenway route must be carefully planned to avoid places that flood often or use raised sections like boardwalks to cross them safely.

Along the river, there are many different types of natural habitats. There are reeds and rushes near the water, wet grassland where the river overflows, trees like willow and alder growing along the bank, and long, old hedges between fields. These natural features are not only important for nature but also help hold the riverbanks in place and filter the water. Many animals depend on these areas to live and move safely. Otters, bats, and birds like kingfishers have all been spotted or are known to use parts of the corridor.

The water quality in the River Barrow is not as good as it should be. In several parts of the corridor, the river is classed as having poor or moderate ecological status. This is mostly due to pollution from farm run-off and changes made to the river in the past, such as straightening the channel or building hard riverbanks. When planning the greenway, care must be taken to avoid making this worse. For example, any rainwater from the path should go through grassy swales or planted areas to filter it before it reaches the river.

There are many old structures along the river, including stone bridges, old mills, quays, and canal features at Monasterevin. Many of these are protected under heritage laws. These structures add a lot of interest to the area, but they also create challenges. Most of the bridges are narrow and do not have space for a path beside the road. This means the greenway may need to use special solutions like narrow walkways attached to the side of the bridge, single-lane road sharing, or new footbridges nearby to get across safely while protecting the old stonework.

One of the most notable historic sites is Lea Castle, which sits near the river. It has remains of old stone walls and earthworks that are protected, meaning the greenway must avoid disturbing them. If the path goes near the castle, it should stay outside the protected zone or be built in a way that doesn't require deep digging, such as on shallow foundations or piles. This approach can also apply near other historic features, helping to protect heritage while still making space for people to pass.

12.1.2. Human Interaction, Wellbeing and Recreation

The Barrow corridor is already used by people for walking, fishing, and enjoying nature, but only in short stretches. In many places, the paths stop suddenly because of fences, private land, rough ground or gaps in access. This makes it hard to enjoy a longer journey or use the river route to travel between Monasterevin and Portarlington. A well-planned greenway would link these short parts into a single, continuous path that people of all ages could use safely.

Community surveys from greenway feasibility studies show that people really want a safe, quiet alternative to the main road. Parents say they don't feel safe letting their children walk or cycle along increased speed limit roads. Others say they would use a riverside path regularly if it were well surfaced and easy to reach whee enjoying nature, relaxing near the river, and having better options for walking their dogs or getting outside with their families is possible.

A new greenway would also support the wellbeing of older residents or people with limited mobility. The river path is mostly flat, so it would be suitable for people using walking aids or wheelchairs if built with smooth, even surfaces. Benches placed along the way would give people the chance to rest and enjoy the view. Shade trees and wind protection would make the route comfortable in all seasons, especially for those who may be more sensitive to weather.

There is also a chance to support local businesses and tourism. The greenway would encourage more people to stop in the towns for food, drink or accommodation, especially if there are good signs pointing to local services. Visitors could enjoy fishing, wildlife watching, or just being in nature. If the path connects to train stations, it would be easy for tourists to reach the area without a car.

Young people could use the route to walk or cycle to school safely. Community volunteers could help plant trees, take care of small sections, or run nature or history walks. These activities create a sense of ownership and make the greenway feel like part of daily life, not just a route for occasional visits.

12.1.3. Infrastructure, Landownership and Transport

Narrow roads and tight bridge crossings are expected to be among the biggest challenges for a continuous greenway. In some cases, there might be enough space to create shared lanes with traffic lights to manage vehicle flow. In others, it may be more appropriate to use lightweight walkways bolted to bridge sides or to build new footbridges where crossing the river safely is otherwise not possible.

Where the riverside is in private ownership, the route may need to follow a mix of access agreements and small land acquisitions. Some landowners might be open to seasonal or permissive access, especially if liability and fencing concerns can be addressed. In more complex areas with many small plots, the council or a delivery agency might consider buying narrow strips of land to ensure continuity.

In places where the riverbank is too narrow or prone to flooding, the route may need to shift onto nearby field edges, quiet back roads, or new embankments. These off-line sections could help maintain a safe and consistent experience. Their design might depend on how much space is available and whether local roads can support shared or separate paths.

Different surface types could be used depending on the ground conditions. Asphalt or bound gravel may be suitable for dry, firm areas. In wetter zones, porous surfaces or raised boardwalks could reduce damage and make the route usable year-round. These choices may also be shaped by expected maintenance needs and how often each section is likely to flood.

Access to schools, rail stations, and local shops could greatly increase the value of the greenway. Routes that pass near these destinations might encourage more daily use. Clear signage, bike parking, and well-placed connections may be needed to make this possible. These details would likely be explored in the next stage of design.

12.1.4. Climate Action

A greenway could support both climate mitigation and adaptation goals. By giving people a safe route to walk or cycle, the number of car journeys under 10 km might be reduced. This could help cut emissions and support healthier lifestyles, especially if the route connects well to train stations and local schools.

Because the river floods regularly, the path may need to be designed in a way that allows water to move freely. In flood-prone areas, boardwalks or raised paths on piles could be considered. This would avoid blocking flood water or damaging soils. Allowing natural flooding to continue is important for the health of the river and surrounding land.

Nature-based solutions might also help manage rainwater from the path itself. Instead of using pipes or drains, swales or grassy ditches could collect water and let it soak into the ground. This may improve water quality and reduce the speed and volume of runoff during storms.

Planting new trees and protecting existing hedgerows could offer shade, improve biodiversity and help store carbon. Wildflower verges and pollinator-friendly areas might also be included where the land allows. These features could be designed to support climate goals while making the route more attractive to users.

It may also be worth including information boards to explain the greenway's climate-friendly design. These signs could help educate users about why certain decisions were made—such as lifting the path in wet areas or planting trees—and encourage more awareness of climate-friendly planning in their own communities.

12.1.5. Combined Baseline Findings

The combined information gathered during the baseline study shows that a greenway between Monasterevin and Portarlington could be both feasible and valuable, but only if it adapts to the local landscape. A fixed-width, one-size-fits-all design is unlikely to work across the whole corridor. Instead, the route may need to change in form and layout depending on local conditions.

In areas with dry ground, enough width, and no sensitive habitats, a standard walking and cycling path might be possible. These areas could be good places for resting spots, signage, or links to schools and towns. In contrast, areas with flooding, wildlife, or narrow bridges may require lighter construction or short detours to avoid harm or risk.

Each bottleneck along each option could require its own solution. In some cases, sharing the road might work if traffic is low. In others, new crossings or walkways may be needed. Decisions would depend on the width, traffic, safety, and heritage protection. These trade-offs could be explored in later design stages once more surveys are complete.

Landownership patterns would likely influence how and where the path can be built. Agreements with landowners could help open access in many areas, while land purchase might be the only solution in others. Having early conversations with landowners and clearly explaining the benefits of the greenway may help reduce resistance.

To move forward, more detailed information will be needed. This could include better flood data, bridge condition surveys, and seasonal wildlife checks. Once these are completed, different alignment options could be tested. The overall goal would be to stay close to the river where it makes sense, step back where needed, and always consider the safety, comfort, and value for local people and the environment.

12.2 Upcoming Stages

The upcoming stages will be **Stage 3 -** Engagement Process and Report; followed by **Stage 4 -** Options Report.

END