



MUINE BHEAG / ROYAL OAK LOCAL AREA

PLAN 2017-2023

Adopted 9th January 2017

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CHAPTER 1 REVIEW CONTEXT

1.1 Introduction

The Muine Bheag / Royal Oak Local Area Plan (LAP) 2010-2016 expired in May 2016. Under Section 19 of the Planning and Development Act 2000 as amended, a local area plan may be prepared in respect of any area, a Gaeltacht, or an existing suburb of an urban area as well as areas in need of renewal or areas likely to be subject to large-scale development.

A mandatory LAP is required in respect of an area which:

- is designated as a town in the most recent census of population, other than a town designated as a suburb or environs in that census,
- has a population in excess of 5,000 and
- is situated within the functional area of a planning authority which is a county council.

Muine Bheag / Royal Oak is below the population threshold for a mandatory LAP (recorded as 2,950 in CSO 2011). It is however, one of the key urban settlements in the county designated as a district town in the South Eastern Regional Planning Guidelines 2010-2022 and the Carlow County Development Plan 2015-2021 with an overall objective to facilitate development in a self-sufficient manner. Development will incorporate employment activities, sufficient services and social and community facilities in tandem with necessary improvements in physical infrastructure and public transport.

The period of this plan shall be taken as being six years from the date of its adoption or until it is reviewed or another plan made, unless it is extended under Section 19 (d) of the Planning and Development Act 2000, as amended.

1.2 Form and Content of the Local Area Plan

This local area plan for Muine Bheag / Royal Oak consists of a Written Statement and a land use zoning map. It comprises of 12 Chapters:

- Chapters 1-3 outline the context of the LAP review, the historical development of Muine Bheag / Royal Oak, the existing profile of the town together with the vision and strategic objectives for the future development of the area.
- Chapters 4-11 address key development objectives including economic development, housing, infrastructure, community facilities, natural and built heritage, tourism, town centre and public realm principles.
- Chapter 12 addresses landuse zoning objectives.

The written statement shall take precedence over the map should any discrepancy arise between them. In the full interpretation of all objectives for Muine Bheag / Royal Oak, it is essential that both the County Development Plan and the Local Area Plan are read in tandem. Where conflicting objectives arise between the Carlow County Development Plan and the Local Area Plan, the objectives of the County Development Plan shall take precedence. The general development management standards applicable to the local area plan area are included in the County Development Plan. Only specific objectives applicable to Muine Bheag / Royal Oak are included in the Local Area Plan.

1.3 Strategic Environmental Assessment

Strategic Environmental Assessment (SEA) is the formal systematic evaluation of the likely significant environmental effects of implementing a plan or programme before a decision is made to adopt the plan or programme. The SEA

Directive (2001/42/EC), was transposed into Irish Law through the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (SI No 435 of 2004) as amended by the European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011 (S.I No. 200 of 2011) and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No 436 of 2004) as amended by the Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations 2011 (S.I. No. 201 of 2011).

Carlow County Council determined that the Plan would – if unmitigated- be likely to result in significant environmental effects – thus necessitating the requirement to undertake SEA. The SEA was prepared in parallel to the plan, informing the plan making process of the likely environmental impacts of alternative actions and contributed to the integration of environmental considerations into the plan making process.

In accordance with Article 13D of the Planning and Development (Strategic Environmental Assessment) Regulations 2004, a Scoping Assessment was prepared for the Muine Bheag /Royal Oak Local Area Plan and sent to the Environmental Authorities. The findings of the SEA are set out in the Environmental Report, which, while constituting part of the Plan documentation, is presented as a separate document. The Environmental Report was prepared in conjunction with the preparation of the Plan and the Plan has been informed by the environmental considerations of the Environmental Report. The likely environmental effects of the Plan (and the alternative development scenarios considered) are predicted in the Environmental Report and their significance is evaluated with reference to the area's environmental baseline. The Environmental Report therefore provides a clear understanding of the likely environmental consequences of decisions regarding the location of development in the Plan area. The mitigation measures needed to offset the potential adverse effects of the Plan and future monitoring proposals have been transposed from the Environmental Report into the Plan.

1.4 Appropriate Assessment

The purpose of carrying out an Appropriate Assessment (AA) of land use plans is to ensure that protection of the integrity of European sites is a part of the planning process at a regional and local level. The requirement for AA of plans or projects is outlined in Article 6(3) and (4) of the European Communities (1992) Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (“Habitats Directive”). Local Area Plans are screened for any potential impact on areas designated as Natura 2000 sites. In any case where, following screening, it is found that the plan may have an impact, a full ‘appropriate assessment’ must be carried out.

Having regard to the presence of the River Barrow and Nore cSAC within the Plan boundary the potential impacts could not be screened out and accordingly the Plan was informed by a Stage 2 Appropriate Assessment which accompanies this Plan.

1.5 Strategic Flood Risk Assessment (SFRA)

Under Section 28 of the Planning and Development Act 2000, as amended statutory guidelines entitled “The Planning System and Flood Risk Management Guidelines for Planning Authorities” were published by the DoEHLG (November 2009). These guidelines require planning authorities to introduce flood risk assessment as an integral and leading element of the plan making process.

The Muine Bheag / Royal Oak area was assessed for risk of flooding in line with the standards and recommendations of the Flood Risk Guidelines. Certain lands within the Plan boundary were rezoned to water compatible uses (including 4.7ha of lands from residential to open space and amenity uses). An assessment of flood risk is required in support of any planning application where flood risk may be an issue and this may include sites where a small watercourse or field drain exists nearby. The level of detail will vary depending on the risks identified and the proposed land use. As a minimum, all proposed development must consider the

impact of surface water flood risks on drainage design. In addition, flood risk from sources other than fluvial and tidal should be reviewed. **In the case of development at appropriate lands, which may be liable to flooding, a site-specific assessment will be carried out at each location. This assessment will include;** a) measures to eliminate risk of flooding at the particular development and b) which will not increase the risk of flooding at other locations. Each application will be considered on its particular merits. This LAP also sets out general policy requirements contained in the guidelines to inform strategic land-use decisions with the purpose of ensuring that flood risk management is fully integrated into the plan.

1.6 Public Consultation

The preparation of this plan included pre-draft consultation with the local community groups, infrastructure providers, sectoral groups, statutory agencies and adjoining local authorities. The pre-draft public consultation extended over a four-week period with the launch of a background

Issues paper. The background Issues Paper identified the key planning issues that the Plan could address and was made available at a number of locations in the County including Muine Bheag Area Offices. Carlow County Council offices and online at www.Carlow.ie.

A total of 10 submissions were received, 5 from statutory bodies with the remainder from landowners, community interests and local residents. The contents of these submissions were considered as part of the Chief Executives Report on the Pre-draft submission and have been taken into account when formulating this local area plan.

A targeted public consultation event was also facilitated in Muine Bheag on Wednesday 20th April 2016. A total of 15 attendees contributed in a meaningful way to the preparation of this LAP.

This plan was adopted at the Council meeting on the 9th January 2017 and takes effect four weeks from the date it was made.

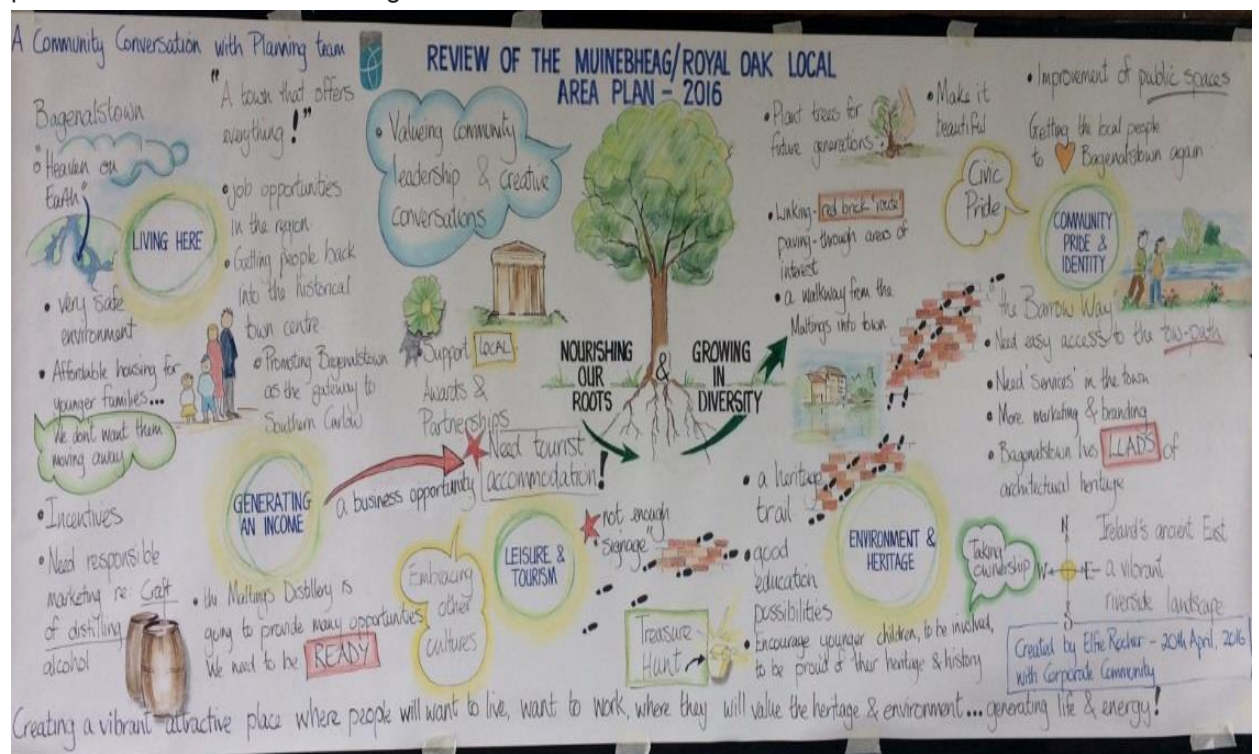


Fig 1: Graphic Recording of Public Consultation Event

CHAPTER 2 MUINE BHEAG / ROYAL OAK IN CONTEXT

2.1 Introduction

Muine Bheag / Royal Oak is located in the south of the County and is an important urban centre, which services a large agricultural hinterland. The town provides a range of residential, community, commercial and employment functions.

Muine Bheag / Royal Oak is located approximately 20km from Carlow town and approximately 23km from Kilkenny on the R705 Leighlinbridge / Carlow to Borris / New Ross regional road. The town is also located on the R724 regional road to

Kildavin and Bunclody. It is also served by a railway station and is strategically located proximate to the R448 and the M9 Dublin to Waterford motorway.

The historical development of the town has left a significant built heritage characterised by historic street patterns, building groups and various features of architectural and historical significance.

The town is sited primarily to the east of the River Barrow with the exception of Royal Oak village to the west of the town and is bounded by the rail line to the east and south of the town.



Fig 2: Aerial Photograph Muine Bheag / Royal Oak

2.2 History and Evolution

The small market town of Muine Bheag was founded in the 18th century by Walter Bagenal of Dunleckny Manor. In an attempt to establish a profitable trading centre on his estate, Bagenal laid out the town centre with a characteristic grid pattern intended to be of considerable architectural pretensions and to bear the name 'Versailles'. Bagenal's aspirations were never fully realised and he later settled for the name Bagenalstown, which the town retained until more recent times.

Muine Bheag was historically an affluent town with a tradition of milling and having its own salt works and gasworks during the 19th and 20th century. Following the decline of canal based transport the milling industry was replaced by the growth of an agricultural based engineering industry.

The first Ordnance Survey map (1839) shows the extent of the town before the coming of the railway. The grid pattern of the town was well established, running east west along Regent Street and Church Street and connected to the canal by a series of perpendicular streets and lanes. The Fair Green is clearly identified, as are several buildings of note including the Court House, two Corn Mills and a School House.

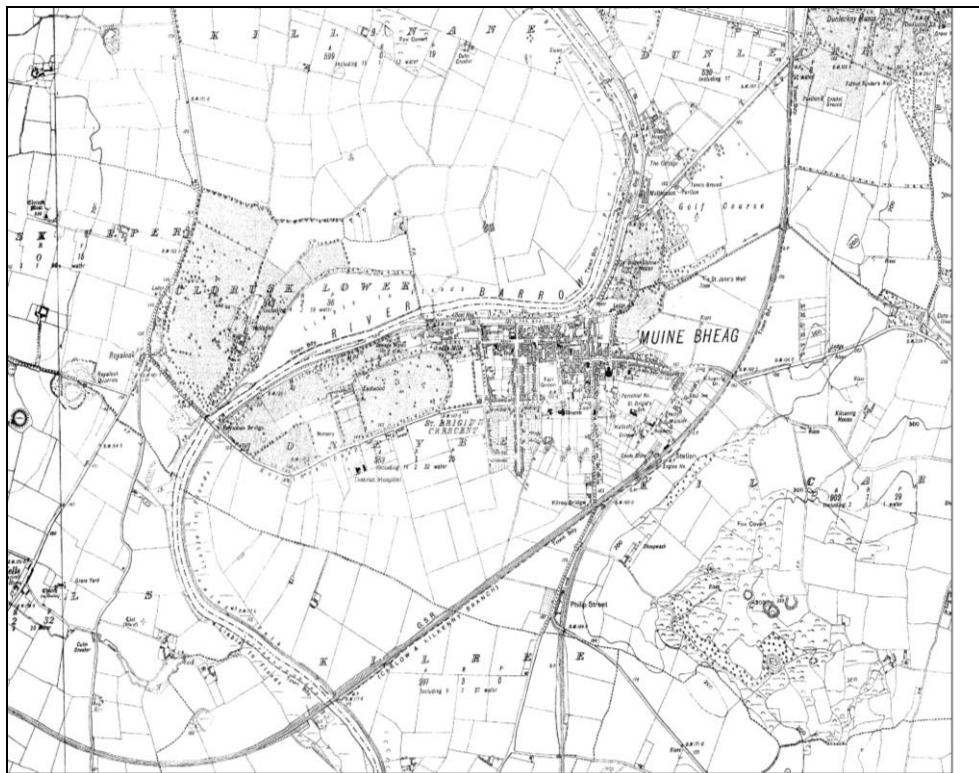
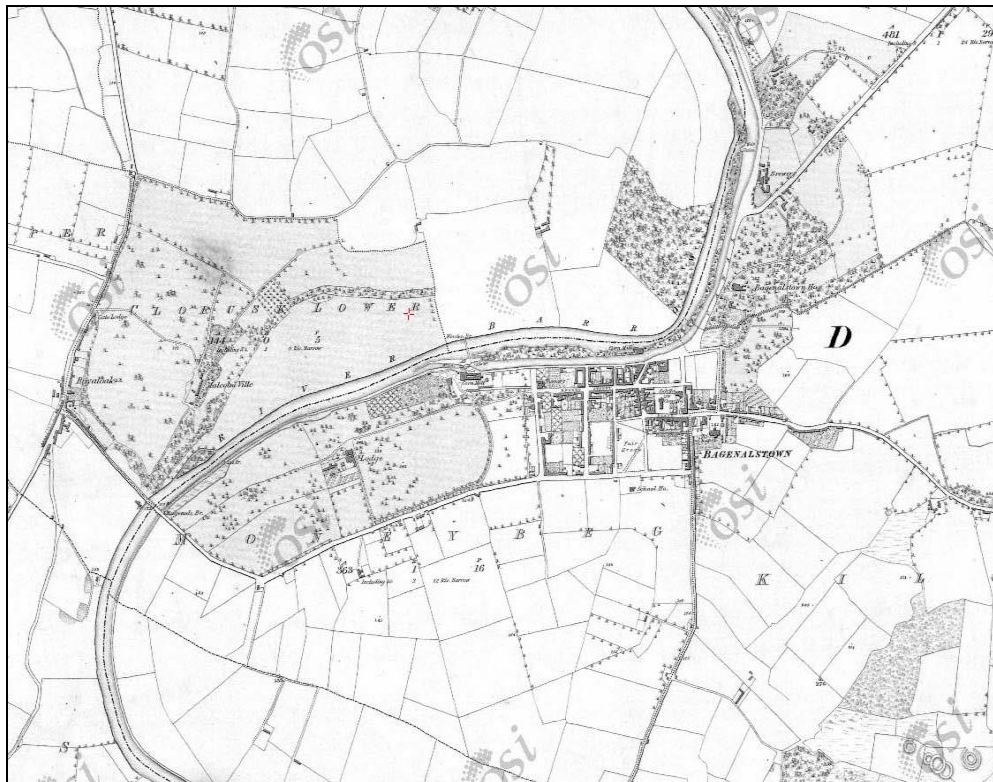
The development of the Great Southern and Western Railway line from Dublin to Kilkenny via Carlow (1846-1850) and the Bagenalstown and Wexford Railway Line serving Borris (1855) saw the decline of traffic on the River Barrow. The (1939) Ordnance Survey map shows the expansion of the town eastwards along Kilcarrig Street and southwards along Kilree Street and along Hurley's Lane where new residential areas were developed. Station House road is shown connecting the railway station to the town from both Kilree and Kilcarrig Street. Many fine buildings were constructed during this period including St. Mary's Church of Ireland, the former Muine Bheag Post Office and the Railway Station.

In recent years, there has been a tendency for development to locate on the fringe of Muine Bheag while large parts of the town centre, such as the canal front and backland areas remain underused or vacant. This trend is reinforced by the development of new single houses and suburban type housing estates on the fringe of the town. New housing developments in the town centre have been limited in terms of quantity and quality reflecting the gradual decrease in the town centre residential population.

In addition to the distinctive streetscape and building pattern the natural heritage of the area being located adjacent to the River Barrow is an intrinsic feature of the town. The protection and enhancement of the natural and built heritage and historic street pattern is paramount in order to retain the sense of place and identity of the town. New development shall seek to be compatible with and enhance the amenity of the area and the historic fabric of the town.

The maps to follow show the historical evolution of Bagenalstown.

Map 1: 1839 OSI Ordnance Survey Map



Map 2: 1939 OSI Ordnance Survey Map

2.3 Town Function and Role

Muine Bheag (in addition to nine other towns in the South East Region) is identified as a district town being targeted for growth. It has well-developed services and community facilities and has the capacity to accommodate additional growth (subject to certain physical infrastructural investments). It is recognised as having the potential to perform an important role in driving the development of a particular spatial component of the overall region.

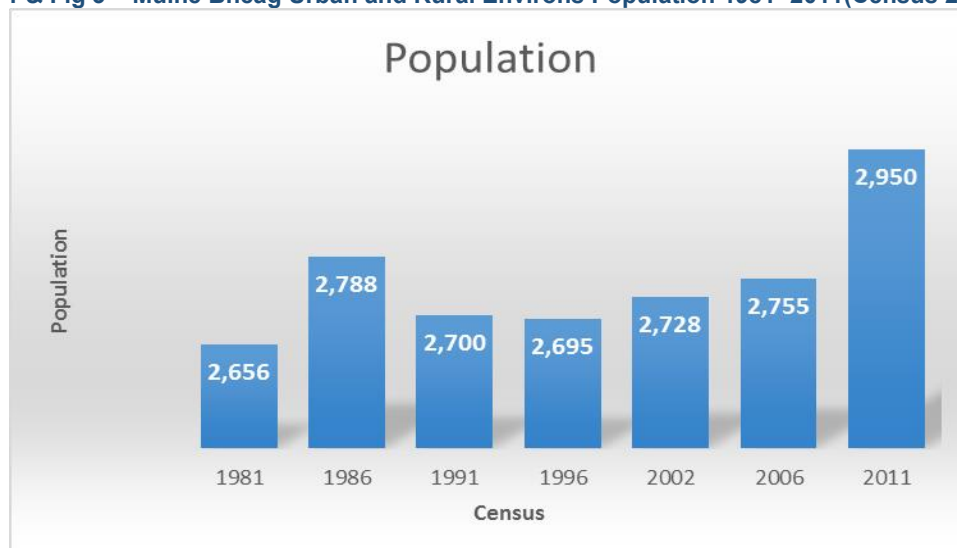
The following section provides a demographic and economic overview of Muine Bheag / Royal Oak. This information is required in order for this plan to cater for the future sustainable growth of the town. Levels of growth in Muine Bheag / Royal Oak will be managed in line with the Core Strategy together with the ability to provide sufficient infrastructure and local services to cater for this growth.

2.3.1 Population

Muine Bheag Urban and Rural Environs recorded a population of 2,950 in the 2011 census, representing a 7% increase on the 2006 population figure. In 2006, Muine Bheag Urban and Rural environs had a population of 2,755 persons, representing a 0.1% increase from its 2002 census population. Table 1 and Figure 3 shows how the town's population has fluctuated over the intercensal periods with a significant decrease experienced between 1986 and 1991. The period 2006 -2011 represented the most significant increase in population growth over the period 1981-2011. Levels of growth over the period 2002-2011 were significantly below the county and national average.

Census	Population	% Population Change Muine Bheag Urban and Rural Environs	% Population Change Carlow	%Population Change Nationally
1981	2,656	-	-	
1986	2,788	5%	3%	3%
1991	2,700	-3%	-0.1%	1%
1996	2,695	-0.2%	1.6%	3%
2002	2,728	1.2%	11%	8%
2006	2,755	0.1%	9%	8%
2011	2,950	7%	8%	8%

Table 1 & Fig 3 – Muine Bheag Urban and Rural Environs Population 1981- 2011(Census 2011)



2.3.2 Household Size and Profile

The total housing stock in Muine Bheag Urban and Rural Environs in 2011 census was 1,272 with 191 recorded as unoccupied. The town's average household size of 2.7 persons is lower than both the county average of 2.8 persons and the national average of 2.72 persons. A breakdown of the household unit size shows Muine Bheag Urban is predominantly made up of smaller households with over 70% made up of between one and three person households.



Household size	1 person	2 persons	3 persons	4 persons	5 persons	6 + persons	Total
Total No. of Households 2011	251	299	219	180	96	35	1,080
% of Total Households	23%	28%	20%	17%	9%	3%	100%
National Average (%)	24%	29%	18%	16%	9%	4%	100%

Table 2: Muine Bheag Urban Household Size and Profile (Census 2011)

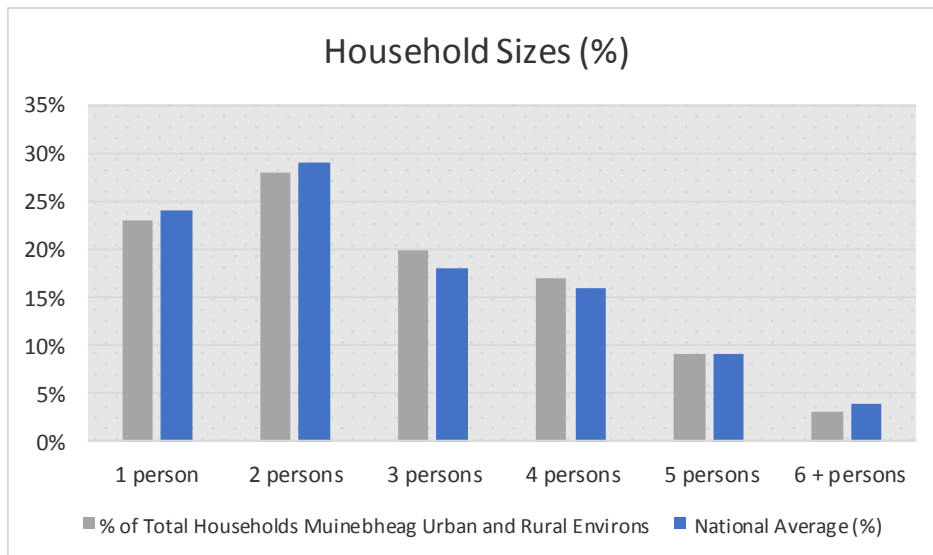


Fig 4: Household Size (Census 2011)

2.3.3 Age Profile

The 2011 Census reveals that Muine Bheag Urban and Rural Environs has a population profile, which is comparable with the national average. 34% of the town's population is aged less than 24 years, with 28% aged between 25 and 44 years. The 2011 Census also revealed that the percentage of population over 65 years of age was slightly higher than the national average.



Age bracket	Population 2011	% of Total Population	National Average %
0-12	529	18%	19%
13-18	227	8%	7%
19-24	223	8%	8%
25-44	836	28%	31%
45-64	750	25%	23%
65+	385	13%	12%

Table 3: Muine Bheag Urban and Rural Environs Age Profile (Census 2011)

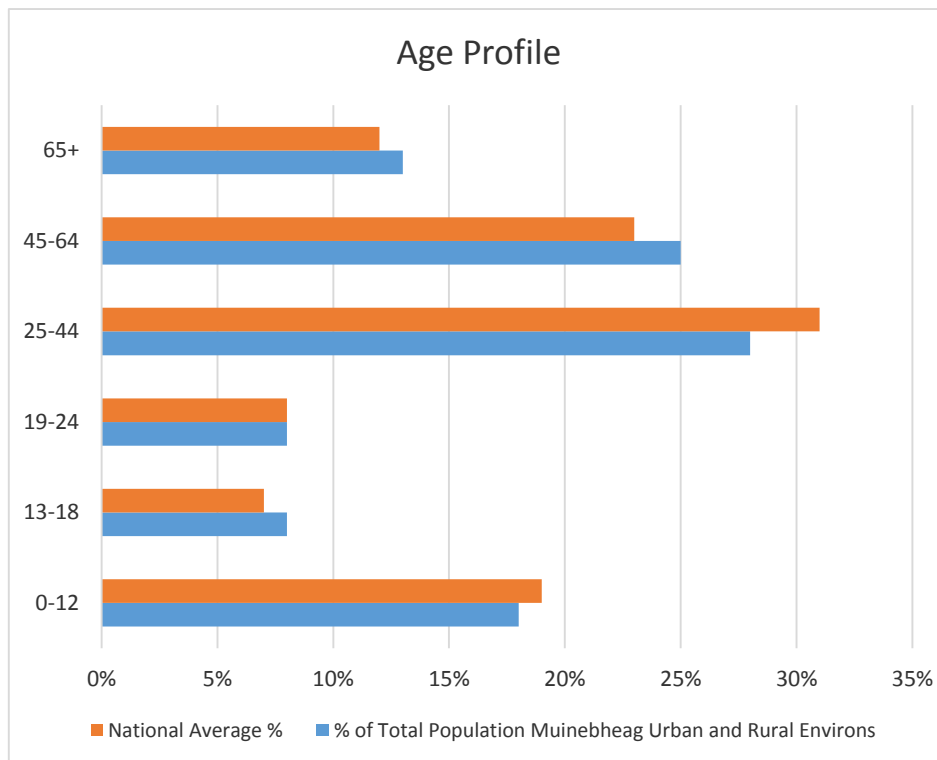


Fig 5: Muine Bheag Urban and Rural Environs National Age Profile (%) (Census 2011)

2.3.4 Residential Profile and Unit Target

Residential schemes in Muine Bheag are concentrated along the Royal Oak Road and Kilcarrig Street. Residential typologies within the town consist of traditional town houses, more recent apartment developments and low-density detached and semi-detached housing to the south, east and west. There is a high proportion of social housing units in the town and while there continues to be a demand for further social housing the provision of private housing to compliment and facilitate social and community integration providing for sustainable communities is a key objective.

In line with the RPGs designation of Muine Bheag as a *District Town*, the core strategy has set out a housing target for the town over the period 2015 – 2021. The target has been projected forward to include 2022 in order to cover the LAP plan period. The LAP target figure also accounts for unbuilt residential units with valid planning permissions. Table 4 summarises all the calculations discussed in the remainder of this section.

The Core Strategy has set a target of 275 new housing units to be provided within Muine Bheag over the period 2015-2021. This equates to 10.6% of the total residential unit growth target for the entire county for this period. The RPGs have further allocated a population target of 63,536 for County Carlow by 2022. This represents a population increase of 4,085 from the 2016 population target of 59,451. Applying an average allocation per annum, this amounts to a population of 680 per annum between 2016-2022. The allocation for Muine Bheag to 2022 is therefore calculated as 10.6% of the population target (72 pop / average household size (2.7) = 27 units with 75% over zoning = 47 additional units). Adding this to the 2021 housing target (275) gives a revised target of 322 housing units for Muine Bheag / Royal Oak for the plan period.

Timeframe	Unit Target	Basis of Calculation
2015 ¹ -2021	275	10.6% of the overall county unit target for 2015-2021 (being 2,603)
2021-2022	47	County Carlow Pop Target 2022 = 63,536 (pop increase of 680 / annum between 2016-2022). 10.6% Applied to 680 = 72 / annum divided by average household size of 2.7 = 27 with 75% over zoning of applied = additional 20 (27+20 = 47 units).
Overall Unit Target	322	

Table 4: Muine Bheag / Royal Oak Housing Unit Targets 2016-2022.

Currently, valid planning permissions exist for 192 residential units at various locations throughout the town but generally located on the outer edge of the town. Taking these away from the residential unit target leaves a remaining target of 130 units over the plan period.

The quantum of land required to meet the remaining unit target on the basis of an average density of 20 units / ha amounts to 6.5 hectares. The appropriate location of these lands has been informed by:

- Development Plan Guidelines regarding sequential development from the town centre.
- Pattern of development within the town and the need to rebalance residential development to other locations.
- Ability of lands to be serviced with appropriate infrastructure.
- Considerations regarding flood risk.

¹ Note: No units delivered in 2015. The figure for 2015 has been incorporated into figures for 2016-2022 to ensure sufficient housing provided in accordance with core strategy. No figure included for 2023 as new plan will be required Jan/Feb of that year unless deferred by resolution in accordance with Article 19(d) of the Planning and Development Act 2000, as amended.

2.3.5 Economy

In 2011 there were 945 persons at work from the Muine Bheag Urban and Rural Environs. 339 (14%) were unemployed

having lost or given up there previous job with a further 14% retired. Skilled manual is the largest socio – economic group reflective of the high level of mechanical engineering type firms in the town.

Social Class	% of Total Population Muine Bheag and Rural Environs	National Average %
Professional Workers	3.0%	7%
Managerial and technical	18.0%	27%
Non-manual	15.0%	18%
Skilled Manual	23%	15%
Semi-Skilled	14%	11%
Unskilled	4%	4%
All others gainfully occupied and unknown	23%	18%

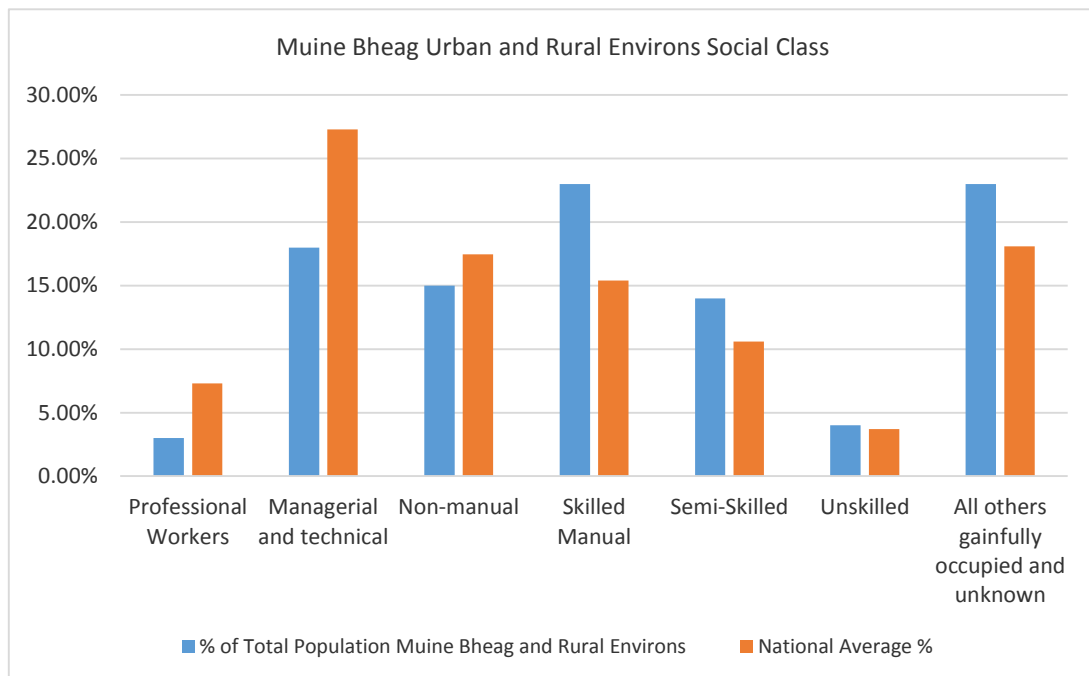


Table 5 and Fig 6: Muine Bheag Urban and Rural Environs Social Class (Census 2011)

2.3.6 Town Centre

Muine Bheag has a distinctive grid pattern, which provides for a hierarchy of streets and good levels of permeability. The area surrounding the Market Square and running along Main Street and Kilree Street is characterised by traditional town centre uses. The town has an attractive streetscape and accommodates a number of historic attractions and buildings of historical merit. Opportunities to improve the vitality and vibrancy of the town centre should be promoted together with the tourism role of the town. There are clear opportunities to upgrade the public realm, develop further niche retail, and service facilities within the town. These issues are considered in further detail in Chapter 6.

2.3.7 Movement and Access

Muine Bheag is strategically located 8km from Junction 6 on the M9 Motorway and adjacent to the R448. This strategic route is connected to the town at Royal Oak by the R724. The R724 runs along Church Road and Kilcarrig Street and continues eastwards to the villages of Fenagh and Myshall. The route is traversed along Kilree Street and Market Square by the R705 linking Borris to Leighlinbridge and the R448.

The Dublin to Waterford railway service stops at Muine Bheag up to 7 times a day. There are regular bus services to Kilkenny, Dublin and Waterford, with the main stop at the Royal Oak. There is heavy reliance on car-based transport and there is significant potential to improve pedestrian and cycling infrastructure. (Refer; Chapter 7)

2.3.8 Environment, Social and Community

The natural and built environment of the town are unique attributes, which must be protected. The protection of the River Barrow and River Nore cSAC within and to the north and south of Muine Bheag / Royal Oak has been considered in detail in the SEA and AA, which accompanies this plan. This new LAP seeks to contribute towards the protection of the environment.

Muine Bheag benefits from a range of social and community services and amenities within walking distance of the town centre. These include primary and post primary educational facilities, library, a health centre, garda station, fire service and community hall.

The town also contains some significant amenity facilities including the fair green and significant recreational facilities at McGrath Park. (Refer; Chapter 8)

2.3.9 Education

Muine Bheag has three primary schools and two post primary schools, which provide educational facilities for the town and the surrounding hinterland.

Table 6 details the names and current enrolment numbers for these facilities. Educational and community facilities are considered further in Chapter 8.

	Name	Enrolment 2015/2016
Primary	Queen of Universe	285
	St. Bridget's Monastery	132
	St. Mary's	95
Post-Primary	Presentation / De La Salle	596
	Vocational School	217

Table 6: Profile of existing schools in Muine Bheag (Source: DoES)

2.3.10 Water and Wastewater

Since January 2014, Irish Water is the State Body responsible for the delivery, integration and implementation of strategic water and wastewater projects and infrastructural improvements. Carlow County Council no longer has a direct role in this area; however, the Local Authority will work with Irish Water to ensure that the Local Area Plan and Water Services Investment Plan align.

In relation to water, there is adequate (headroom) capacity available. A mains replacement scheme has been approved for Muine Bheag.

The Wastewater treatment is currently at capacity and is included in the Irish Water Investment Plan for upgrade.

2.4 Conclusion

Muine Bheag is an important service centre in south Carlow and has a significant role in accommodating future population growth and economic development of the area. The policies and objectives as contained in this plan will facilitate the planned, integrated economic and sustainable development of the town by balancing the needs of the community and preserving or enhancing the natural and built environment.

CHAPTER 3 VISION AND DEVELOPMENT STRATEGY MUINE BHEAG / ROYAL OAK

3.1 The Vision for Muine Bheag / Royal Oak

The vision and development strategy for Muine Bheag / Royal Oak is to improve the quality of life for the local community and provide for the future sustainable growth of the town over the period of 6 years and beyond.

The key objective of the Council is to provide for sustainable development that will enhance the vitality and prosperity of the town while not overburdening existing services.

The Council recognises that Muine Bheag / Royal Oak must offer living, working, educational, recreational and cultural opportunities of the highest standard in an attractive urban environment. While the greatest population growth occurred in the intercensal period between 2006 – 2011 there remains a significant potential to provide high quality housing within the town supported by social, recreational, employment and community facilities.

A key focus for the future development of the town will seek to capitalise on the

significant tourist opportunities being presented with key industries focusing on the opportunities this sector presents. The renewed focus on the natural amenities of the area including the River Barrow and the Blackstairs Mountains represent unique features, which have potential to give rise to significant economic benefit to the town.

This Plan provides an opportunity to create a vision for coherent, sustainable development for the benefit of the town and its citizens. This vision is a statement of what Muine Bheag / Royal Oak aspires to be, not in the six-year lifetime of a local area plan, but over the next 20 to 30 years. It is only by developing a shared long-term vision that we can deliver and support the short-term goals of subsequent plans and core strategies.

This long-term vision is based on the principles of sustainable development and will be implemented by providing the planning framework to secure development that balances social, economic and environmental considerations while minimising the potential adverse effects on the environment.

Vision for Muine Bheag / Royal Oak

To build on Muine Bheag / Royal Oak's unique strengths including its distinct character of built and natural heritage and to provide a focused approach to planning for future growth in a coherent, sustainable, spatial fashion. The Plan aims to achieve a more consolidated urban form that facilitates a sustainable economic base and creates sustainable and integrated communities while balancing future development with the conservation and enhancement of the town's natural and built environment.



3.2 Strategic Objectives and Priorities

The strategic vision along with compliance with the Core Strategy will provide the overall strategy for the proper planning and sustainable development of Muine Bheag / Royal Oak.

For the purposes of guiding this plan, the strategic vision, the core strategy, key findings from analysis and submissions from public consultation can be translated into three key overall strategic objectives to ensure appropriate growth rates over the short to medium term achieving a level, which will support competitiveness, sustainability and create opportunities for local economic development.

3.2.1 Strategic Objective No. 1

It is an objective of Carlow County Council:

SO 1: To create an attractive town with a compact urban form which contributes to the natural and built heritage amenities of the town and provides a vibrant and vital mixed-use environment.

SO 1.1 Promoting Character and Heritage

The towns built and natural heritage make it unique. This objective fully recognises the contribution heritage makes to the town's character and acknowledges that it is a unique resource that attracts tourism.

This Plan seeks to renew the historic town core area in particular the Market Square, the quayside and surrounding streetscapes in order to enhance, improve and build on the inherent character of the town. The key approach is to balance the needs of a growing town with the need to protect and conserve the elements, which give the town its identity.

Urban design principles identified focus on the need for regeneration of the town centre area. This key priority will entail strengthening and improving the image of the town through proposals for the public realm.

SO 1.2 Facilitating a Diverse Range of Activities

Muine Bheag / Royal Oak is an important market town that serves a large rural hinterland. Its core retail area has been defined as part of the Carlow County Retail Strategy July 2015, which recognises a shortage in terms of comparison-shopping. The town also accommodates key community infrastructure and services. The importance of residential occupancy within the town centre as opposed to development on the periphery is an important element to ensure the vibrancy of the town into the future. Opportunities to develop the tourism role of the town is also a key priority. This in conjunction with opportunities to upgrade the public realm provides an opportunity to develop further niche retail and service facilities within the town.

SO 1.3 Connecting Infrastructure

Connecting the town through services infrastructure and a network of transport infrastructure will make it accessible and easy to move around, allowing the town to intensify and grow.

Movement and Transport

In order to create a more sustainable town the key focus is on promoting more sustainable modes of transport such as public transport, walking and cycling. The Plan seeks to facilitate sustainable accessibility and legibility within the town core area in favour of the needs of pedestrians, the mobility impaired and cyclists. The creation of a network of strategic green routes within the town extending into the wider hinterland will cater for the recreational needs of the population and contribute to an improved quality of life as part of a compact town.

Services Infrastructure

The key priority in terms of services infrastructure is on achieving a clean, healthy town with improvements to air and water quality, bio-diversity value and the use of renewable energy sources. There is also a requirement to address flood risk management strategies and sustainable urban drainage systems to enable the town to adapt to climate change.

This emphasis on a sustainable pattern of development and sustainable infrastructure will help mitigate climate change, protect and improve water courses and ecosystems and support the creation of a green network.

SO 1.4 Green Infrastructure

Green infrastructure, recreation and biodiversity are vital components of a compact town. Their reinforcement is a key priority of this Plan. A green infrastructure strategy reflects an integrated approach to the town's provision of open space, recreational, landscape and biodiversity assets and is addressed in Chapter 10.

3.2.2 Strategic Objective No. 2

It is an objective of Carlow County Council:

SO 2: To facilitate the creation of a sustainable vibrant and vital economy which maximises the unique attributes of the town.

SO 2.1 Facilitating Sustainable Development of the Local Economy

It will be necessary to stimulate the long term economic growth of the town by promoting employment and enterprise land uses to provide opportunities for Muine Bheag / Royal Oak to become a self-sustaining town.

This priority seeks to promote sustainable growth of the local economy through focusing on manufacturing and office based industries, enterprise development and tourism (natural and built heritage) through:

- The development of manufacturing industries and warehousing at appropriate locations.
- The development of small-scale enterprises and office based employment adjacent to the town centre and on appropriately zoned land.
- The promotion and facilitation of tourism based industries and spin offs arising from same.

The land use provisions in this local area plan provide a range of zones to cater for the economic needs of the town.

Revitalising the town's retail base by strengthening and consolidating the town centre area is also an important consideration. The creation of a successful mixed-use viable town centre is a key priority for this Plan. It is recognised that there is a need to recapture the market share through a variety of policies and initiatives to support the town centre. This can be achieved by facilitating healthy competition by providing for a variety of retail floor space without compromising the architectural integrity of the historic town centre.

It is proposed to provide easier access to the town centre by promoting new linkages from the surrounding residentially zoned lands. Providing easier access to the town centre will aid its future development and ensure that the town core will be an attractive and vibrant area.

3.2.3 Strategic Objective No. 3

It is an objective of Carlow County Council:

SO 3: To create a town of well-connected sustainable neighbourhoods and socially inclusive communities.

SO 3.1 Creating Sustainable Neighbourhoods

The creation of good, sustainable neighbourhoods, which support thriving communities and provide for a wide range of household types, age groups and tenures with community facilities close by is a priority. In order to achieve this, criteria and standards for good neighbourhoods are a central part of this strategy. These principles are intended to ensure, for example, that infrastructure such as schools, shops and childcare facilities are provided in a phased and co-ordinated manner. The importance of shops within walking distance of residential developments is re-affirmed in this key strategy.

The council will work with various stakeholders who fund and provide community services and facilities, including but not limited to the Department of Health and Children, the Department of Education and Skills, the HSE, registered charities, not-for-profit companies and foundations, religious orders, sports and community groups and organisations, to ensure social and community infrastructure is provided in a timely manner. This objective will be supported through the implementation of the actions arising from the Local Economic and Community Plan.

SO 3.2 Providing Quality Homes

The sustainable management of land zoned for housing is a central element of this priority. New residential development close to the town centre will be promoted which provides for a quality compact town of mixed tenure neighbourhoods, catering for a wide range of family types and individuals.

The provision of quality housing that is suitable for all citizens throughout their lives and adaptable to people's changing circumstances is fundamental to creating a

compact town with sustainable neighbourhoods. Requiring residential schemes to have good local facilities and ensuring schemes are of an appropriate scale and phased so that support infrastructure is provided in tandem with residential development will assist in achieving this key strategy.

Providing quality homes for all includes the provision of social and affordable housing. The delivery of the housing strategy as contained in the CDP 2015-2021 together with legislative amendments will help meet the needs of those on lower incomes and those in special circumstances.

3.3 Conclusion

The purpose of the vision and strategic objectives is to ensure the effective delivery of the core strategy of the County Development Plan 2015-2021 for Muine Bheag / Royal Oak. These priorities are elaborated on further in the following chapters of this plan, with a range of supporting policies and objective.

CHAPTER 4 ECONOMIC DEVELOPMENT

4.1 Introduction

Muine Bheag / Royal Oak is strategically located in County Carlow serving south Carlow and onwards into Kilkenny. The motorway located adjacent to the town provides ease of access to Dublin and Waterford.

Muine Bheag / Royal Oak has a variety of economic drivers with a significant focus on manufacturing and services. This has been illustrated by the recent investment in projects such as Walsh Whiskey and Carlow Brewing Company and the location of companies such as Autolaunch and the Burnside Group.

This plan seeks to promote employment, enterprise and tourism associated development in order to provide opportunities for Muine Bheag / Royal Oak to become a self-sustaining town as well as encouraging and facilitating the mixed use regeneration of the town centre, the quays being of particular importance.

The two principal industries that are identified to be economic drivers are Engineering / Manufacturing and Tourism. Tourism is recognised as having significant potential to contribute to the economic development of Muine Bheag / Royal Oak and is addressed comprehensively in Chapter 10.



4.1.1 Employment Profile

According to Census 2011, 945 persons indicated as being “at work” in the Muine Bheag / Royal Oak area, comprising 32% of the overall population.

Population aged 15 years and over by Principal Economic Status and Sex

Principal Economic Status	Male	Female	Total
At work	504	441	945
Looking for first regular job	19	11	30
Unemployed having lost or given up previous job	242	97	339
Student	123	133	256
Looking after home/family	8	271	279
Retired	173	150	323
Unable to work due to permanent sickness or disability	99	59	158
Other	8	10	18
Total	1,176	1,172	2,348

Table 7: Population aged 15 years and over by Principal Economic Status and Sex - Census 2011

In March 2016, records show that there were 1,221 persons in Muine Bheag / Royal Oak on the Live Register.

A spatial analysis of the Pobal Haase – Pratschke Deprivation Index (HP Index) highlights that Muine Bheag scores a -9.38 in this index and this is classed marginally below the national average.

4.1.2 Strengths of Location in Muine Bheag / Royal Oak

Muine Bheag / Royal Oak has good infrastructure in terms of roads and rail with good access to airports and seaports. It is located 105km from Dublin, 65km from Waterford and 80km from Rosslare. The town is approximately 20km from Carlow, 25km from Kilkenny and is on the R705 Carlow to Borris regional road. It is also located on the R734 regional road to Kildavin / Bunclody. The town is also strategically located adjacent to the M9 Dublin to Waterford motorway, facilitating increased accessibility to the town.

The town also has a railway station and is a scheduled stop along the Dublin / Waterford rail line.



In terms of public transport, both Bus Eireann and private operators run a regular bus service to the area.

Muine Bheag is proximate to various third level colleges and an educated population cohort is required to support highly skilled economic enterprises.

4.2 Challenges

Carlow County Council, under its remit for Economic Development and Business Support (via its Local Enterprise Office), will work in collaboration with Enterprise Ireland, IDA, Chamber of Commerce and the business sector to promote Muine Bheag / Royal Oak as an attractive location for inward investment.

Quality of life is now a key determinant of a town's success, demanded not only by its residents but also necessary to attract and hold onto a talented workforce. Strategic assets need to be promoted in order to compete and collaborate with other towns including Carlow and Tullow for economic investment.

Addressing high levels of unemployment, availability of affordable child care facilities and ensuring availability of good quality housing stock is a key requirement.

It is also vital that Muine Bheag / Royal Oak has excellent infrastructural provision in such areas as transportation and traffic management, broadband, recreation and amenity provision along with visual improvement projects to support the town's economic vibrancy.

4.3 Strategic Approach

In responding to the foregoing challenges the plan seeks to promote Muine Bheag / Royal Oak as a strong dynamic town which will provide for a sustainable economic future creating jobs for a skilled workforce based on a good quality of life for all its citizens. The approach will be achieved by:

- Assisting development of all economic sectors including the growing area of tourism development by the implementation of relevant policies to cater for such growth.
- Providing adequate infrastructural facilities, good quality housing and community facilities.
- Promoting e-business.
- Zoning sufficient and appropriately located lands for industrial and commercial development.
- Provision of enterprise areas and training infrastructure as well as the creation of incubation units for small start-up businesses.
- Encouragement of collaborative structures focusing on economic development.
- Development of the public realm and amenities so as to improve the quality of life of employees and residents.
- Addressing, where feasible, any infrastructural deficiencies that may be hindering economic development and aim to ensure that sustainable infrastructure facilitates economic development.

4.4 Policies and Objectives

4.4.1 Enterprise and Industry

Muine Bheag / Royal Oak has recently experienced growth in enterprise and industry. Recent private sector investments include Walsh's Whiskey Distillery investing €25 million in a world-

class Distillery and Visitor Centre at Royal Oak. Carlow Brewing Company have also invested in the Dunleckney Maltings Site, with a Visitors Centre and Maltings proposed on site. Autolaunch Automotive Industry and Manufacturing Plant, along with other indigenous companies such as PB Machines, MCM Engineering, Burnside Hydracyl Ltd., Tanco Autowrap and Hi Spec Engineering, have also experienced growth in recent years.

Persons at Work by Industry and Sex

Industry	Males	Females
Agriculture, forestry and fishing	6	0
Building and construction	30	4
Manufacturing industries	149	16
Commerce and trade	126	132
Transport and communications	56	8
Public administration	29	28
Professional services	38	159
Other	70	94
Total	504	441

Table 8: Persons at Work by Industry and Sex - Census 2011

4.4.2 Location of Employment lands in Muine Bheag / Royal Oak

This plan seeks to identify a range of optimum locations which can present opportunities for the location of industry and warehousing, specific / specialised enterprise and employment uses and tourism uses throughout the plan area. In particular the plan provides:

- 37.7 hectares of zoned land for industry and warehousing at the Muine Bheag Business Park, of which 17.9 hectares is undeveloped. This can facilitate further manufacturing, engineering and other appropriate uses. A further area of 4.8 hectares is located on the R725 to facilitate established warehousing / logistics landuses at this location.
- 9.96 hectares of zoned land for manufacturing, enterprise, employment and tourism along the Royal Oak Road. It is envisaged that these lands could be developed to accommodate a high quality business park subject to appropriate remediation of the brownfield site. The site could be

developed in a phased manner. An appropriate buffer shall be maintained with adjoining residential properties.

A similar land use zoning of tourism, manufacturing with enterprise and employment is also provided to facilitate expansion of the Walsh Whiskey Distillery (Holloden House) and Carlow Brewing Company (Dunleckny Maltings). This land use zoning extends to 15.27 hectares and will facilitate potential future expansion to complement the primary manufacturing and associated tourism spin off industries associated with these expanding enterprises.

- 6.18 hectares of zoned land to the east of the rail line to facilitate enterprise and employment uses. A further smaller area of 0.43 hectares is also zoned on the Kilcarrig Road in recognition of the existing established car sales and associated uses at this location.
- 8.6 hectares of zoned land for an integrated tourism and leisure zoning associated with Bagenalstown House. Given the potential for tourism in the town and the wider hinterland including the Blackstairs Mountains, proximity to the River Barrow and Dunleckny Maltings and Walsh Whiskey Distillery this plan recognises the need to facilitate hotel / tourism type accommodation in the town with associated leisure uses.
- For the re-use and redevelopment of brownfield lands i.e. those lands formerly used for other uses and underutilised lands.



4.4.3 Economic Policies for Muine Bheag / Royal Oak

It is the policy of Carlow County Council:

- EC 1:** To accelerate the sustainable development of Muine Bheag / Royal Oak through sustainable employment creation, in a structured and cohesive way, recognising its importance as one of the key drivers of economic growth in south Carlow.
- EC 2:** To facilitate development agencies such as IDA Ireland, in partnership with Carlow County Council, to promote development of foreign-owned and indigenous sector higher value-added, knowledge based industrial and internationally traded activities.
- EC 3:** To foster and support industry and enterprise in Muine Bheag, including indigenous businesses.
- EC 4:** To ensure the availability of lands for employment uses, allied to defined development needs and to develop same in conjunction with the relevant Development Agencies.
- EC 5:** To promote innovative economic sectors and encourage clustering which positively exploits synergies between interconnected companies.
- EC 6:** To facilitate and encourage the development of the alternative energy sector and to recognise its potential in the creation of enterprise and opportunities.
- EC 7:** To support and facilitate the development of start up enterprise units for local indigenous enterprises in Muine Bheag / Royal Oak.
- EC 8:** To facilitate innovative work practices such as 'live-work' units where they do not negatively impact on residential amenity.
- EC 9:** To improve access to major areas of employment through sustainable transport modes.
- EC 10:** To support childcare facilities in appropriate locations thereby promoting labour market participation among parents and supporting parents in accessing employment, training and education.

EC 11: To actively encourage the redevelopment of brownfield sites and re-use of disused buildings for enterprise and employment creation, subject to meeting Development Management Criteria as presented in the County Development Plan.

EC 12: To encourage and facilitate at appropriate designated locations, small indigenous industries in recognition of their increasing importance in providing local employment and helping to stimulate economic activity.

EC 13: To promote, protect, improve, encourage and facilitate the development of tourism in Muine Bheag / Royal Oak as an important contributor to job creation in the town.



It is an objective of the Council:

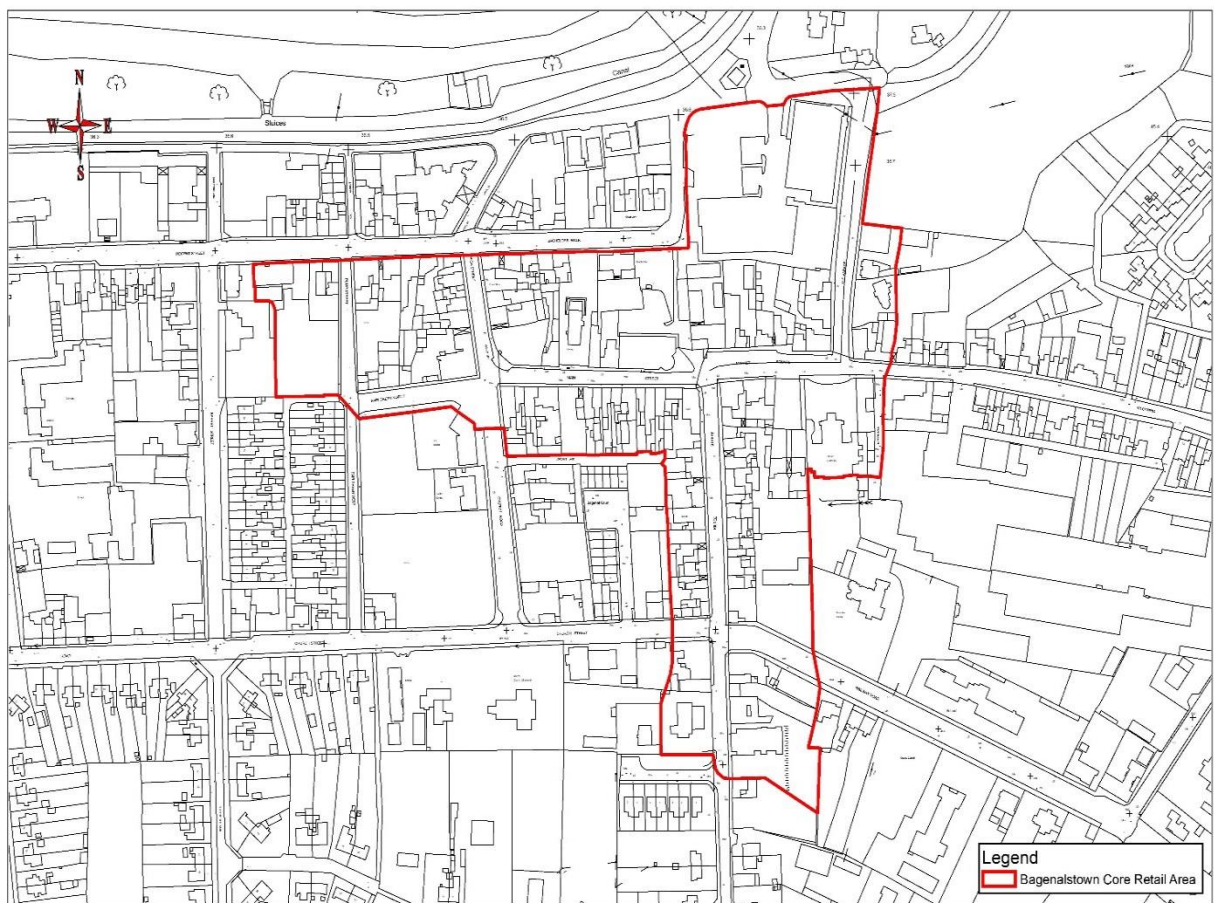
ECO 1: To promote and facilitate the development of light industry, manufacturing, warehousing and logistics on lands zoned industry and warehousing. Developments must achieve a high standard of layout and design including landscaping and screening and the delivery of a high quality working environment which is attractive to both customers and employees.

ECO 2: To facilitate and promote the development of a business park on lands zoned on the Royal Oak with a mix of employment uses within a high-quality landscaped development including office-based industry, enterprise and incubator units, business, science and technology.

4.4.4 Retail

Muine Bheag is an important market town serving a large rural hinterland. Its retail function is generally limited to day to day services and local convenience retailers. The focus of retail activity in Muine Bheag is along Main Street, High Street, Fair Green North and Pump Street. The area surrounding Market Square and running along Main Street and Kilree Street is characterised by traditional town centre uses, such as banks, library and public houses. At Royal Oak, there is some limited retail warehousing provision.

Multiple representation is limited to a few small symbol stores and a Supervalu and Aldi store, with a number of independent small butchers, greengrocers and newsagent shops dispersed throughout the town. There is a noticeable lack of comparison goods provision within the town. Accordingly, there is opportunity to expand both comparison retailing and the neighbourhood convenience role of the town.



Map 3: Muine Bheag Core Retail Area (Source: Carlow Retail Strategy (CDP 2015-2021))

It is the policy of Carlow County Council:

- EC 14:** To protect and strengthen the retail primacy of Muine Bheag within the County and more specifically within Southern Carlow.
- EC 15:** To encourage the development of the retail and service role of Muine Bheag / Royal Oak as a self-sustaining centre in accordance with the policies contained in the Carlow County Development Plan 2015-2021 and the Retail Planning Guidelines 2012.
- EC 16:** To protect the retail function of the Core Shopping Area.
- EC 17:** To sustain the vitality and viability of the main shopping area and to encourage measures to improve its attractiveness.
- EC 18:** To adhere to the provisions of the Sequential Approach in the consideration of retail applications located outside of the Core Retail Area.
- EC 19:** To promote and facilitate the development of local markets devoted to the sale of local agricultural and craft produce and support their role as visitor attractions.
- EC 20:** To ensure that best quality of design is achieved for all proposed retail developments and that design respects and enhances the specific characteristics of the town.
- EC 21:** To pursue all avenues of funding to secure resources for the continued enhancement, renewal and regeneration of the public realm of the Town Centre.
- EC 22:** To discourage non retail and excessive lower grade retail uses, such as, take-away's and betting offices in the core retail area and other principal streets in the town centre, in the interests of maintaining and sustaining the retail attraction of the town centre.
- EC 23:** To improve the public realm and support boutique style retailing in the town centre.
- EC 24:** To secure the continued consolidation of Muine Bheag Town Centre through progressing the regeneration of backland and brown field areas in the town centre.

- EC 25:** To encourage and facilitate the delivery of tourism related retail developments and initiatives in and around the Town Centre.

It is an objective of the Council:

- ECO 3:** To maintain the role of Muine Bheag's town core area as the primary retail centre for convenience and local comparison shopping through continuing to develop the retail environment, the quality of the public realm, the range of retail uses and to facilitate complementary uses to retail.
- ECO 4:** To actively promote from a planning perspective, the range of specialist shops within the town core, which will contribute to the character of the town and attractiveness of the area as a destination for shopping.
- ECO 5:** To seek to secure funding to implement environmental improvements for the town core area such as improving facilities for pedestrians, provision of a high quality streetscape, improved connectivity with adjoining residential areas and tourist attractions.

4.5 Brownfield / Derelict / Vacant / Underutilised Sites

There are a number of brownfield, vacant and derelict sites in Muine Bheag, some of which continue to detract from the overall ambience of the town. The Council is committed to using its powers under the Derelict Sites Act 1990 to ensure that relevant landowners take the necessary steps to protect and enhance the streetscape in Muine Bheag / Royal Oak.

There are a number of light industrial and engineering works dispersed throughout the town. The most significant of these is located off Station House Road and backlands off Kilcarrig and Kilree Street. Additional sites include factories along the quay. While these sites are of low intensity they have an important employment and enterprise function in the town.

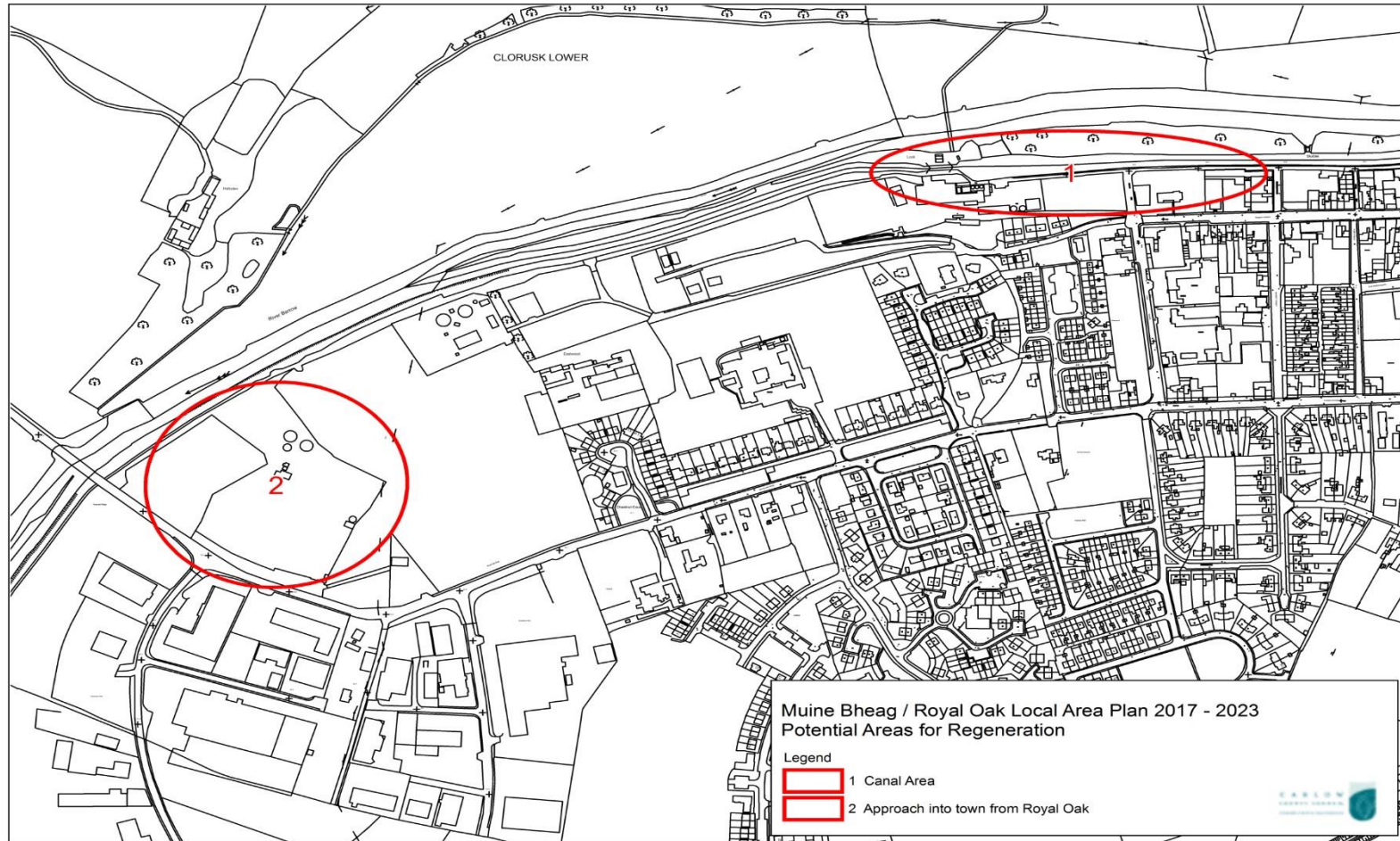
Vacant development sites are also an opportunity for Muine Bheag to provide for additional housing, employment and other space. Active land management including the implementation of the vacant land levy

are key planning policies to implement the vision of the LAP and the core strategy of the County Development Plan. The Urban Regeneration and Housing Act 2015 provides for a levy on vacant sites and this is a key measure in implementing the Core Strategy by encouraging the development of such vacant sites. The redevelopment of vacant sites and buildings within the town core area is critical to the sustainable development and economic success of Muine Bheag. Achieving a critical mass of investment and development in the short-term is essential to break the negative cycle of underdevelopment and to overcome the barriers to progress that have existed.

It is an objective of the Council:

ECO 6: To provide for the development of vacant sites in designated areas (residential land and / or regeneration land) and to encourage and facilitate the appropriate development and renewal of sites and areas in need of regeneration in order to prevent;

- Adverse effects on existing amenities in such areas, in particular as a result of the ruinous or neglected condition of any land
- Urban blight or decay
- Anti-social behaviour, or
- A shortage of habitable houses or of land for residential use or a mixture of residential and other uses



Map 4: Potential Areas for Regeneration

4.5.1 Town Centre Opportunity Sites

Within the town centre there are a number of opportunity sites identified for redevelopment (see Map 5).

Site 1: Quays

There are a number of derelict and underutilised sites along the Quays. Whilst this area has benefited from some rejuvenation in recent years there are still a number of sites that have significant development potential. A mix of uses in this area is promoted together with specialist and niche retail functions.

Site 2: Regent Street

This is a large infill site located in Regent Street. The site was formerly occupied by Bargain City Carpets. It is a two storey structure of limited architectural character and is an appropriate location for an infill retail development.

Site 3: Greenfield Site Royal Oak Road

This comprises a greenfield site of 1.02 hectares on the Royal Oak Road. The site is currently undeveloped but is located in close proximity to a number of residential estates. Given the proximity of the site to the town centre and its proximity to a large residential community within walking distance, the site would be suited to an appropriately scaled neighbourhood convenience development.

Site 4: Site at Kilcarrig Bridge

This is a large brownfield site located opposite the VEC at Kilcarrig Bridge. The site is currently utilised as a storage compound. Given its proximity to the town centre, it would be appropriate for convenience expansion and other appropriate town centre uses.

It is the policy of Carlow County Council:

EC 26: To promote the redevelopment and generation of strategic sites and vacant areas within and adjacent to the town centre to achieve a

consolidated town with an intensity of development from the core to the edge.

EC 27: To promote quality in architecture and urban design.

EC 28: To encourage and facilitate the reuse and regeneration of vacant/ derelict land / buildings. The Council will use its powers, where appropriate, to consider such sites for inclusion in the Register of Derelict Sites.

4.6 Rural and Agricultural Development

Muine Bheag / Royal Oak and the surrounding area boasts some of the finest agricultural land in the region. The rural economy is an important component of the town's overall economy. There is approximately 72.8 hectares of agriculturally zoned land within the boundary.

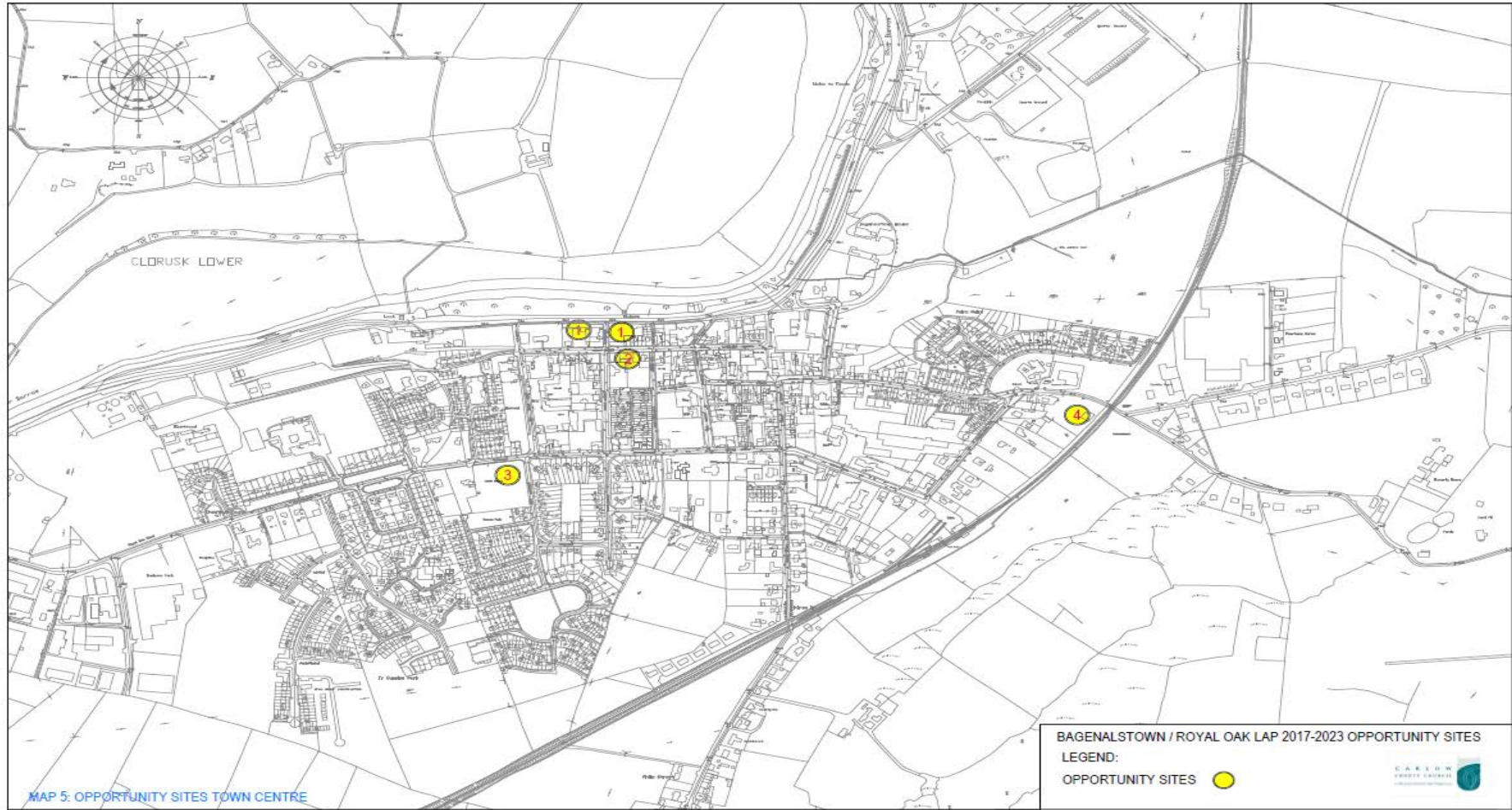
Certain types of rural enterprises and agribusiness, especially those that involve natural resources may, at an appropriate scale, have a role to play in the agricultural zone. Strategic food production and processing has become an important component of the rural economy. This area of economic development will be encouraged and promoted. Rural based tourism which includes fishing, forestry, trekking, equine and farm based activities also provides opportunities for the diversification of the rural economy.

Given the importance of the rural environment it is essential that its integrity is maintained and enhanced and that the activities which rely upon it do not degrade or detract from it.

It is the policy of Carlow County Council:

EC 29: To promote an environmentally sustainable agricultural / horticultural sector and a vibrant bloodstock industry, which contributes to a dynamic and successful rural economy.

EC 30: To promote the diversification of the rural economy and the development of rural indigenous industry while safeguarding the environment and role of the rural area as a strategic asset.



Map 5: Opportunity Sites Town Centre

CHAPTER 5 HOUSING AND SUSTAINABLE NEIGHBOURHOODS



5.1 Introduction

A sustainable town needs to be attractive as a place to live for all people. Providing adaptable homes which are affordable, pleasant and connected to areas where people work and socialise is fundamental to the creation of a compact town and a key factor in providing quality of life.

A good neighbourhood should be of a scale to support a range of services and facilities and small enough to foster a sense of community and belonging, with essential services and facilities all within walking distance of each other.

5.2 Challenges

It is important that housing and associated physical and community infrastructure in Muine Bheag / Royal Oak is of a high standard for all who want to live within the town. In order to ensure the delivery of quality housing and the creation of sustainable communities the Plan must seek to deliver:

- High quality, spacious housing units.
- Good levels of amenity in terms of green open space.
- Adaptable and flexible units that readily provide for changing needs over time

including the needs of families with children.

- High quality well designed communal areas.
- Sustainable building designs which are energy efficient and utilise renewable energy resources.
- Delivery of social and community facilities in tandem with residential developments.

Implementation of actions from the Local Economic and Community Plan will help provide the strategic framework for publically funded economic, local and community development programmes in the county.

5.3 Strategic Approach

The approach to providing quality homes and sustainable neighbourhoods will be achieved by:

- Providing for an appropriate quantity and quality of residential accommodation incorporating sustainable densities and designs.
- Providing for a variety of housing typologies and tenures which are adaptable, flexible and meet family needs and the changing needs of people throughout their lives.
- Providing for housing that is accessible and affordable for all residents through the implementation of the housing strategy.
- Providing for the creation of attractive mixed use sustainable neighbourhoods which benefit from the phased delivery of supporting infrastructure.
- Providing for the integration of new development and associated infrastructure with the existing town and landscape by extending the focus beyond the residential scheme with an equal emphasis on the quality of the surrounding area.

5.4 Policies and Objectives

5.4.1 Compliance with Core Strategy

The Core Strategy sets out a new housing unit target for Muine Bheag over the period 2015-2021. As outlined in Section 2.3.4 and Table 4 the overall unit target is 322 units. Valid planning permissions exist for 192 residential units resulting in a remaining unit target on newly zoned land of 130 units.

The quantum of land required to meet the unit target of 130 units will be dependent on the location and density of development. The Carlow County Development Plan 2015-2021 recognises that the Muine Bheag / Royal Oak LAP (2010 -2016) significantly over zoned lands for residential purposes. While a small level of overzoning in excess of the core strategy figure (40 no. units) is provided for in this plan significant rezoning of land has taken place from residential and mixed use zonings to alternative landuse zonings including significant agricultural uses. These lands are located on the periphery of the town and maybe considered for development under any further review of the Muine Bheag Local Area Plan in the medium to longer term in accordance with the core strategy then pertaining.

Controlled phasing of land is required to ensure compliance with the provisions of the strategy. Phasing of land must be based on a clear sequential approach with zoning extending outwards from the town core. A strong emphasis is also placed on encouraging infill opportunities and better use of underutilised lands with options for brownfield / regeneration prioritised. Map 6 and Table 9 identify the location, phase, site size and unit potential for undeveloped residentially zoned land within the LAP boundary.

Location (PI Ref)	Site Size (ha)	Committed / Unit Potential
Site ref 1 (10/282)	7.47	32
Site ref 2	7.5	83
Site ref 3 (12/168)	3.57	54
Site ref 4 (11/205 & 13/8)	5.14	58
Site ref 5 (15/200)	3.8	48
Site ref 6	2.4	47
Site ref 7	2.7	40
		Total = 362

Table 9: Unit Potential Undeveloped Residentially Zoned Land Phase 1.

Note: Parts of site no.s: 1(0.31ha), 2 (0.89 ha), 3 (0.51ha) and 4 (1.33 ha) have been rezoned to open space and amenity arising from considerations relating to flood risk. Any new planning applications on these lands must have regard to the revised land use zonings pertaining to these lands.

It is the Policy of the Council:

- HP 1:** To monitor the scale, rate and location of newly permitted development to ensure compliance with the core strategy with regard to population targets in order to achieve the delivery of strategic plan led and coordinated balanced development within the town.
- HP 2:** To operate an order of priority for the release of residential lands to comply with the Core Strategy of the Carlow County Development Plan 2015-2021 as follows:
- (i) The lands identified as “New Residential – Phase 1” land use zoning objective corresponds generally with the requirements of the core strategy and are available for residential development within the lifetime of this plan.
 - (ii) The lands identified as “New Residential – Phase 2” land use zoning objective are not available for residential development within the lifetime of this LAP unless the Plan is reviewed / amended in accordance with planning legislation.
- HP 3:** To facilitate where appropriate residential development on appropriate infill / regeneration and

town centre sites in accordance with the principles of proper planning and sustainable development.

- HP 4:** To have regard to the DoECLG Guidelines on 'Quality Housing for Sustainable Communities – Best Practice Guidelines for Delivering Homes Sustaining Communities (2007); 'Delivering Homes Sustaining Communities –Statement on Housing Policy' (2007), 'Sustainable Urban Housing: Design Standards for New Apartments' (2007) and Sustainable Residential Development in Urban Areas' and the accompanying Urban Design Manual: Best Practice Guide (2009).
- HP 5:** To require that all new residential developments comply with the Housing Strategy and Development Management Standards of the Carlow County Development Plan 2015-2021 or as may be amended.

5.4.2 Sustainable Residential Areas

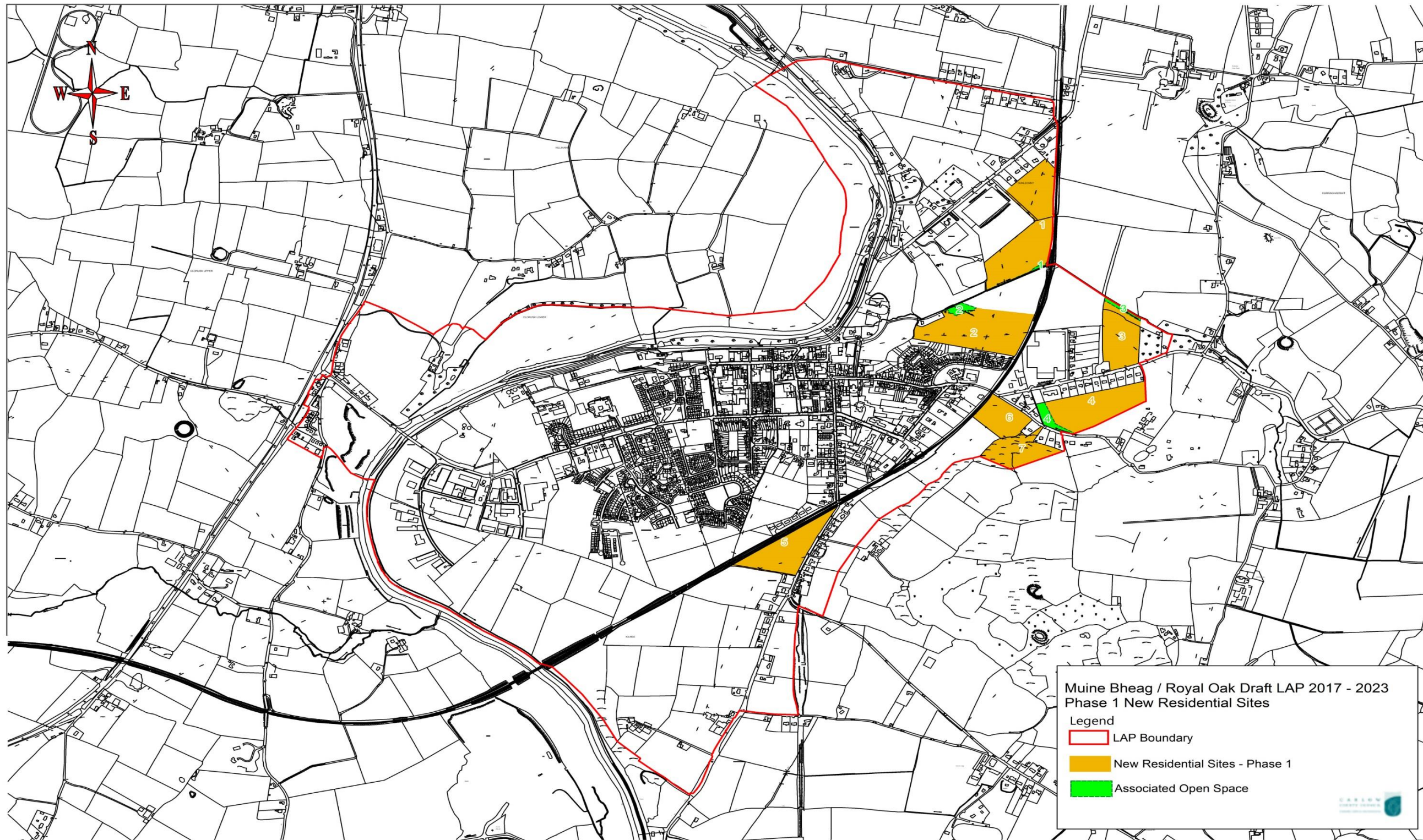
Varied housing typologies will be sought within neighbourhoods in order to encourage a diverse choice of housing options in terms of tenure, unit size, building design and to ensure demographic balance in residential communities. Larger residential schemes will be required to phase their building programme so as to ensure that important physical, social and community infrastructure are delivered in tandem with residential development. Carlow County Council will seek to ensure that such development is phased in line with the availability of essential infrastructure such as transport, schools, childcare facilities, health facilities and recreational facilities.

It is the Policy of the Council:

- HP 6:** To encourage and foster the creation of attractive mixed-use sustainable neighbourhoods which contain a variety of housing types and tenures with supporting community facilities, public realm and residential amenities.
- HP 7:** To promote the development of underutilised infill town centre sites and to facilitate high quality development which respects the

design of surrounding development and the character of the area.

- HP 8:** To require larger schemes to be developed in a phased manner ensuring that necessary community infrastructure is delivered in tandem with residential development.
- HP 9:** To encourage strong frontages along main thoroughfares creating definite building lines and continuity of the structure of the town centre.
- HP 10:** To ensure that new housing development close to existing houses reflect the character and scale of the existing houses unless there are exceptional design reasons for doing otherwise.
- HP 11:** To require applications for residential development where appropriate to demonstrate the provision of an appropriate mix of dwelling types having regard to the following:
- The nature of the existing housing stock and existing social mix in the area;
 - The desirability of providing mixed communities;
 - The provision of a range of housing types and tenures;
 - The need to provide a choice of housing, suitable for all age groups and persons at different stages of the life cycle.



Map 6: Phase 1 Residential Sites

5.4.3 Sustainable Building Design

Carlow County Council will support a sustainable approach to housing development by promoting high standards of energy efficiency in all housing developments, promoting improvements to the environmental performance of building including the use of renewable energy and through the spatial planning, layout, design and detailed specification of proposals.

It is the Policy of the Council:

HP 12: To promote more sustainable development through energy end use efficiency, increasing the use of renewable energy, and improved energy performance of all new development.

5.4.4 Quality Housing for All

Housing with long term adaptability and potential for flexibility allows for change as circumstances alter and families grow. Adaptability that allows for the alteration of the fabric of a building and flexibility which allows for spaces to accommodate a range of uses are key considerations in the design of a home. Carlow County Council will have regard to Lifetime Homes guidance contained in Section 5.2 of the Department of Environment, Community and Local Government 'Quality Housing for Sustainable Communities – Best Practice Guidelines for Delivering Homes Sustaining Communities' (2007).

It is the Policy of the Council:

HP 13: To ensure that all housing is designed in a way that is adaptable and flexible to the changing needs of the homeowner having regard to the Lifetime Homes Guidance contained in Section 5.2 of the Department of Environment, Community and Local Government 'Quality Housing for Sustainable Communities – Best Practice Guidelines for Delivering Homes Sustaining Communities' (2007).

5.4.5 Good Property Management

Good property management arrangements are needed to secure the satisfactory upkeep and maintenance of communal

areas and facilities. Carlow County Council will endeavour to take in charge developments as soon as possible following compliance with relevant conditions and in accordance with Carlow County Council's "Taking-in Charge Policy".

It is the Policy of the Council:

HP 14: To require compliance with Carlow County Council's policy on the taking-in charge of residential developments.

5.4.6 Unfinished Estates

Where appropriate the Council will seek the completion of unfinished schemes to ensure public health and safety is maintained and that essential services such as roads, public lighting, footpaths, piped services and amenity areas are satisfactorily completed.

It is the Policy of the Council:

HP 15: To have regard to the DoECLG's 'Stakeholders Code of Practice, between the Representative Bodies Dealing with Unfinished Housing Developments (2011).



5.4.7 Apartment Living

The provision of apartment development or other types of residential development may be considered at appropriate locations within the town centre area. Successful apartment living requires that the scheme must be designed as an integral part of the neighbourhood.

Apartment standards aim to ensure that new apartment developments provide housing with high levels of amenity; within individual apartments; within the overall development including all communal facilities; and by ensuring that suitable social infrastructure and other support facilities are available in the neighbourhood.

It is the Policy of the Council

- HP 16:** To restrict apartment developments generally to town centre locations or suitably located sites adjoining public transport connections. Apartments will not be permitted where there is an over concentration of this type of development. Higher density schemes will only be considered where they exhibit a high architectural design standard creating an attractive and sustainable living environment.
- HP 17:** To seek the provision of high quality apartments where permitted within sustainable neighbourhoods by achieving appropriate floor area sizes and levels of amenity within each apartment development; and ensuring that suitable social infrastructure and other support facilities are available in the neighbourhood.

5.4.8 Demolition and Reuse

The demolition of existing housing is generally discouraged on sustainability grounds. It may also lead to a loss of residential accommodation and streetscape character. Providing residential accommodation on upper floors is encouraged, particularly in the town centre area as it will contribute to the creation of a vibrant mixed-use compact urban core.

It is the Policy of the Council

- HP 18:** To discourage the demolition of habitable housing unless streetscape, environmental and amenity considerations are satisfied.
- HP 19:** To resist the loss of residential use on upper floors and actively support proposals that retain or bring upper floors above ground floor premises into residential use.

5.4.9 Social and Affordable Housing

The Carlow County Council Housing Strategy of the Carlow County Development Plan 2015-2021 and the policies and objectives contained in Chapter 4 Housing of the Carlow County Development Plan 2015-2021 addresses issues associated with housing in the county including housing need, the need for housing units of different types and sizes, improving social mix and catering for those with special needs including the elderly, travellers, homeless and disabled people.

It is the Policy of the Council

- HP 20:** To secure the implementation of the Carlow Housing Strategy 2015-2021 or any amendment or review thereto during the lifetime of this plan.
- HP 21:** To promote the provision of appropriate accommodation for people with special needs including people with disabilities, students, travellers, the homeless and the elderly in conjunction with voluntary bodies and the private sector in accordance with the Carlow County Development Plan 2015-2021 (or as may be amended).

5.4.10 Social Inclusion and Regeneration

Social inclusion is important in creating sustainable neighbourhoods. The regeneration of the town centre including the Quays and increasing connectivity between neighbourhoods into the fabric of the town is essential to achieve this. The promotion of inclusive neighbourhoods that cater for all age groups, based on the principles of universal design, quality of design, and good services and facilities to all will be a priority.

It is the Policy of the Council

- HP 22:** To support urban regeneration in order to enhance social cohesion and the potential for positive change.
- HP 23:** To promote sustainable neighbourhoods which cater for the needs of persons of all stages in their lifecycle i.e. children, people of

working age, elderly, people with disabilities.

HP 24: To promote multi use of community facilities and outdoor shared spaces which are accessible to all. Such developments should be in accordance with the principles of universal design.

CHAPTER 6 TOWN CENTRE, LANDSCAPE AND PUBLIC REALM

6.1 Introduction

Muine Bheag has a distinctive sense of place and character derived from a variety of elements including the River Barrow and canal, a grid street pattern, a picturesque landscape and setting, buildings of historical and architectural significance and a range of uses and activities.

The visual qualities of Muine Bheag define the town's unique identity and sense of place. The principal visual element to the town is the Main Street / Market Square. This space extends from the Fairgreen to Market Square and includes a series of nodes or focal points and landmark buildings such as the Credit Union and St. Andrews Church.

The River Barrow and Canal are important visual elements which can be enjoyed within the immediate context of the Quay front and from the town centre, from which intermittent views of the river are afforded. The visual characteristics of this area largely comprise the canal, the river and the immediate mature landscape to the foreground, and the agricultural landscape of Muine Bheag's hinterland in the background.

6.2 Challenges

Successful towns are often judged in terms of their vitality and viability which are deemed as the essential elements of thriving town centres. Vitality is the consideration of a successful public realm which is measured in social terms whereas viability is a gauge of successful development which is measured in financial terms. It is important to note that these two separate issues are wholly reliant and interdependent on each other if a successful and attractive town centre is to be achieved.

The town centre displays a lack of vitality. Factors which impact on the image of the town include quality of built form; public realm; shopfronts; use of colour; maintenance and upkeep of buildings. Other issues which affect the vitality of Muine Bheag include poor mix of uses, lack of active frontages onto the street as well as the amount of social and cultural activity within the public realm.

Vacant sites, derelict buildings and empty shop units, in particular in the town centre, have a negative impact on the viability of the town and weaken its position as the primary commercial centre within the town. Whilst the town appears to have a good mix of retail, there is a very limited selection and a lack of competition in the core town centre, for example, there is only one newsagent in the town with a population of nearing 3,000, 2 clothes boutiques, 2 supermarkets, 1 café and 1 pub which is the sole location for hot meals during the day. Thus, Muine Bheag has little attraction to a daytime shopper and there is an outflow from the town to other nearby retail centres, such as Kilkenny and Carlow.

The lack of connectivity between the town core area and the surrounding residential developments also impacts on the viability of the town. Muine Bheag's urban fabric and image form a fundamental part of the town's character and therefore must be enhanced through the policies and objectives of this Local Area Plan. Measures such as increasing permeability, intensifying development and improving the overall image of Muine Bheag will consolidate and strengthen the town core and support its role as the principle commercial area.

Future development must be sustainable and integrated to achieve a compact, well connected viable and vital town. The challenges are therefore threefold:

- Strengthening the town by improving the image, physical and environmental qualities of the public realm.
- Encouraging the consolidation of the town; improving connectivity and permeability; and facilitating the comprehensive mixed use regeneration of the core retail area.
- Extending the form and structure of the town for the benefit of the existing communities and developing well connected sustainable neighbourhoods.

6.3 Strategic Approach

The strategic approach for Muine Bheag / Royal Oak is to seek to establish an attractive, self-sufficient and sustainable town with a unique character and high quality of life in a place where the needs and aspirations of the community can be realised.

In order to achieve same, the following development principles must be adhered to;

- Protect and enhance existing, positive aspects of character, environment and heritage.
- Promote compact and sustainable development whilst providing for the growth and improvement of the town.
- Promote the sustainable redevelopment of key infill and opportunity sites.
- Encourage and facilitate the appropriate development and renewal of sites and areas in need of regeneration in order to prevent;
 - Adverse effects on existing amenities in such areas, in particular as a result of ruinous or neglected condition of any land
 - Urban blight or decay
 - Anti-social behaviour
 - A shortage of habitable houses or of land for residential use or a mixture of residential and other uses.
- Achieve the greatest mix and range of uses possible and protect the vitality of the town's core retail area.
- Prioritise the use and enjoyment of the town streets and spaces by pedestrians and cyclists while providing for all means of travel and increased provision for off-street parking.
- Attract a residential population to the town centre through high quality design.
- Promote sustainable development and energy efficient technologies.

6.4 Character Areas

Muine Bheag contains several character areas that are distinct from other parts of the town centre. These areas include;

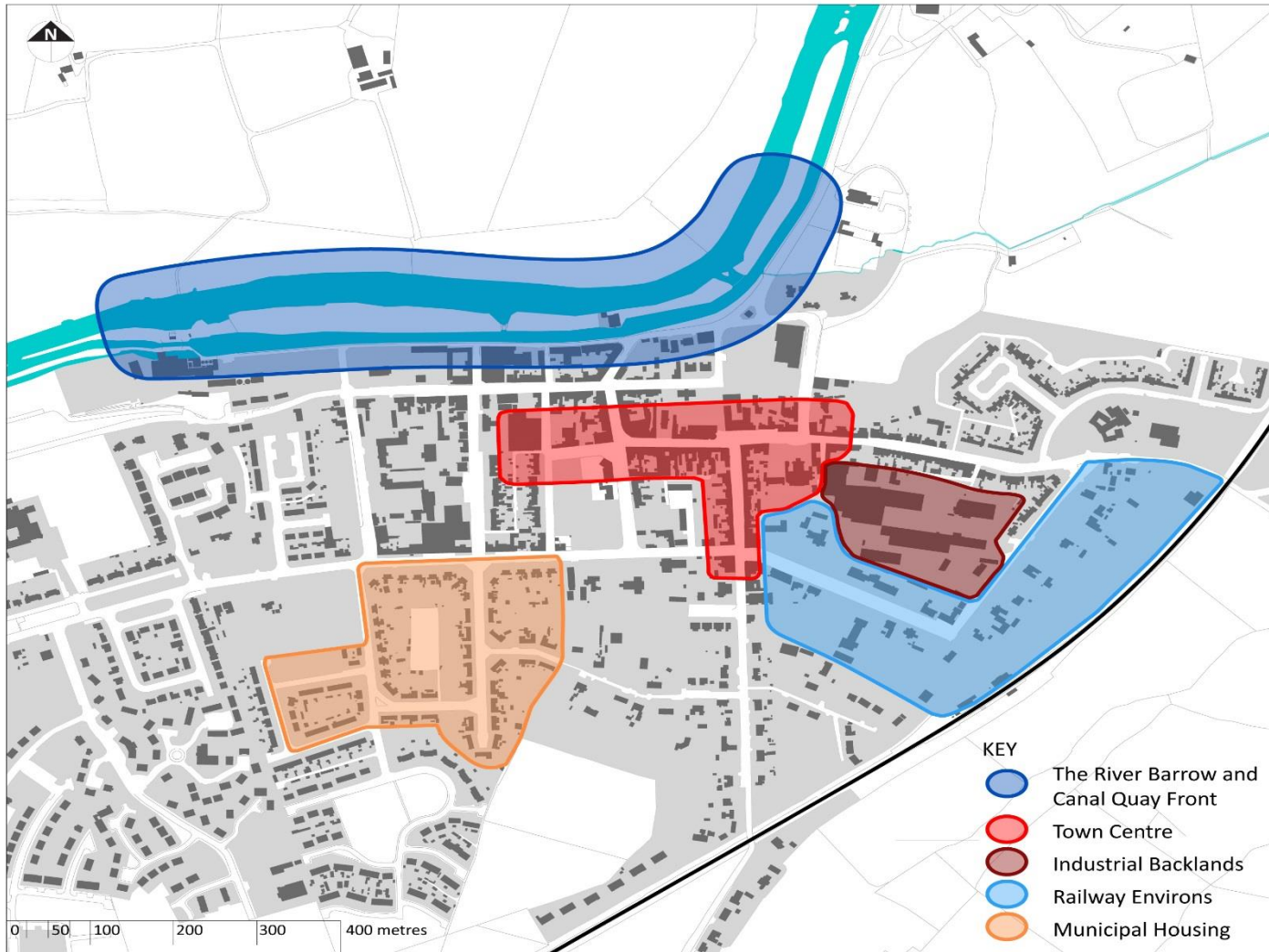
- The town centre which is largely the compact traditional core surrounding Market Square. Building scale is consistently 2 to 3 storeys. The street frontage is generally continuous providing enclosure and an active streetscape.
- The Quay Front and Canal. Building typologies include operational and derelict industrial buildings such as mills, factories and sheds. The close relationship between the canal, the quays and associated buildings define the character of this area. Attractive stone walls are also an important feature of the Quay Front.
- The Backlands off Station House Road. This area comprises industrial buildings and sheds including medium scale engineering works.
- The Railway Station and surrounding lands. This area fronts onto the Station House Road and comprises loosely distributed detached houses with large gardens. Mature trees are an important feature of this area. Significant buildings include the Railway Station, McGrath Hall and St. Bridgets National School.
- Early 20th Century municipal housing surrounding Hurley's Lane. Building scale is consistently 1 to 2 storeys. These areas conform with the traditional grid street pattern of the town. Junctions are typically chamfered and cornered buildings aligned accordingly. These areas have a moderate sense of enclosure which is enhanced where tree lines have been planted.

It is a policy of Carlow County Council:

CA 1: To protect the traditional urban structure of streets and lanes in the town by maintaining historic building lines and minimising road and junction widening and, where appropriate, restoring historic building lines.

- CA 2:** To protect the historic urban fabric of fine plots and subdivisions by avoiding extensive consolidation of the plots and to promote narrow, deep plots in redevelopment proposals fronting the main streets.
- CA 3:** To protect the integrity and character of important building groups in the town by ensuring that new development and redevelopment is compatible in terms of appearance and scale.
- CA 4:** To protect features and sites of historical interest and their context setting in any development, through appropriate statutory and policy protection.

Map 7: Muine Bheag Character Areas



6.5 Land Use and Function

Providing opportunities for business and employment, housing, recreation and health are all essential ingredients for healthy towns. The future of Muine Bheag/ Royal Oak hinges on it retaining and enhancing a diverse range of uses and activities. Existing range of activities in Muine Bheag core retail area are outlined in Map 8. In recent years, there has been a tendency for development to locate on the fringe of Muine Bheag, whilst large parts of the town centre, such as the canal front and backland areas remain underused or vacant. New housing developments in the town centre have also been limited in terms of quantity and quality reflecting the gradual decrease in the town centre population. Due to the imbalance in the town in favour of the fringe, this has had a knock-on effect on the town centre, with its decline in recent years.

This plan seeks to create a balanced and self-sustaining development of the town by promoting the greatest mix and range of compatible uses in line with the current zoning objective for town centre activities, and by seeking a balance between the development of the town centre and the fringe.

Within this plan, there are also opportunities to consolidate the existing retail core. This should be supplemented by residential use where possible. A broader range of uses are appropriate to the canal front, including services, tourism and living opportunities. A number of opportunity sites are also identified (see Section 4.5.1) that may be suitable for a broad range of town centre uses, including retail, employment, enterprise and living.

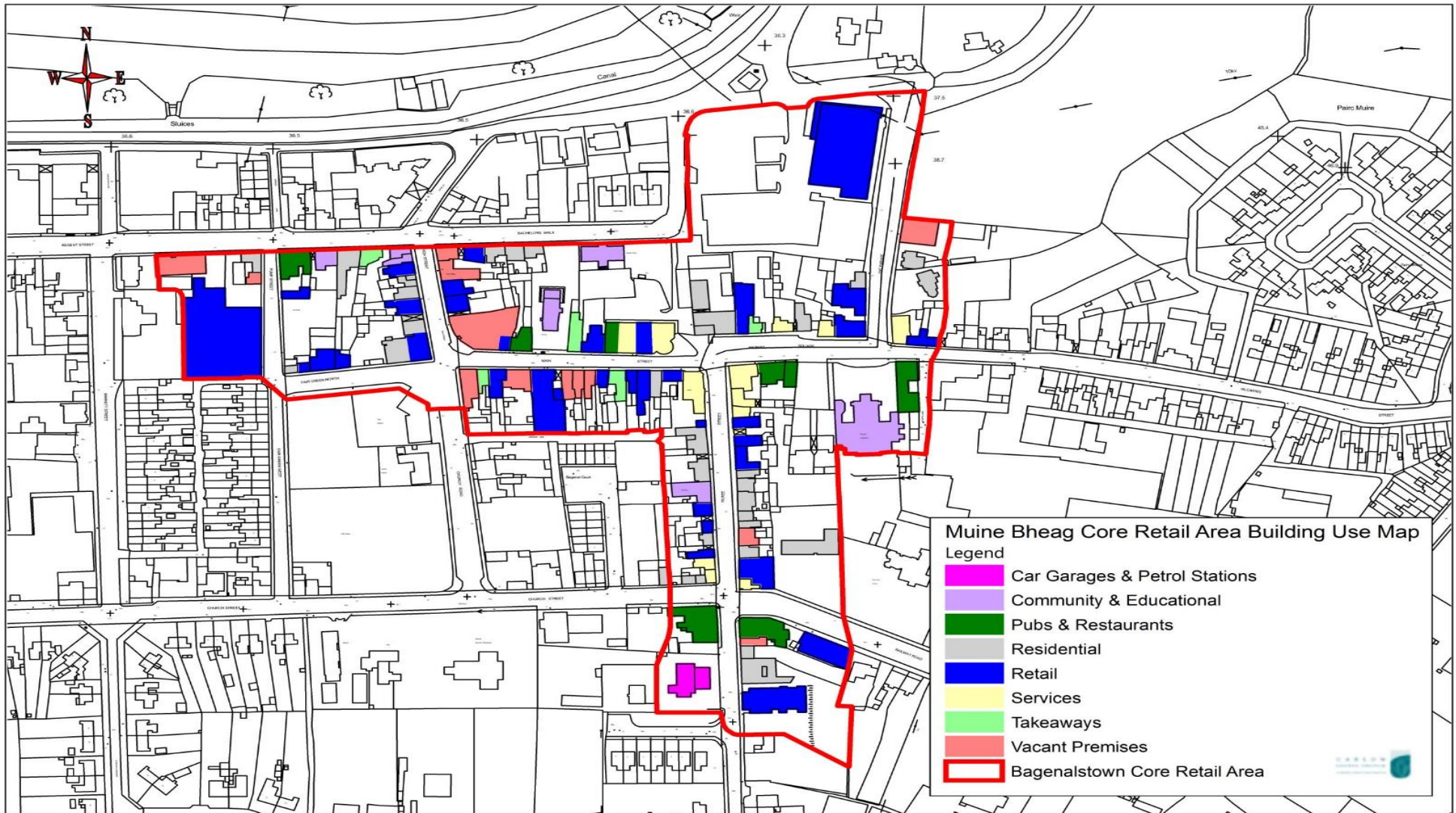
It is a policy of Carlow County Council:

- LU 1:** To seek to attract a residential population and commercial activity in the town centre through high quality design with a continuous street frontage with a variety of buildings, well maintained and attractive facades and active ground floors providing a pleasant and distinctive place.
- LU 2:** To prioritise the use and enjoyment of the town streets and spaces by pedestrians and cyclists so that the impact of the private car and HGV traffic is moderated and a more reasonable balance is achieved between the interests of pedestrians, cyclists and drivers, including a more consistent approach to car parking in the town centre including increased provisions of off-street car parking.

- LU 3:** To promote the mixed use nature of the town and to preserve its role as the centre of business and commerce in Muine Bheag.
- LU 4:** To secure a broad base of employment and enterprise in the town through small, medium and large scale commercial development.
- LU 5:** To require the inclusion of opportunities for mixed uses in new development in the town centre.
- LU 6:** To reinforce tourism, related facilities and services and to actively market Muine Bheag / Royal Oak.
- LU 7:** To retain and improve the existing housing stock in the town centre and focus on opportunities for a range of household types in the town.
- LU 8:** To investigate the feasibility of developing water-related activities, subject to the requirements of the Habitats Directive.
- LU 9:** To encourage town centre services, tourism and living along the canal front.
- LU 10:** To promote the development of quality shopfronts and in particular traditional shopfronts which contribute to the distinctive character of the town and to facilitate the improvement of vacant shops and premises in the town centre.

It is an objective of Carlow County Council:

- LUO 1:** To extend the existing pedestrian network and facilities and look at the possibility of cycling facilities.
- LUO 2:** To provide small scale leisure / recreation facilities in the town centre, such as for example, a tennis court, basketball court, skate park.
- LUO 3:** To require the integration of off-street car parking facilities in the redevelopment of large sites.



Map 8: Muine Bheag Core Retail Area – Building Uses

6.6 Landscape

The topography of Muine Bheag rises immediately south of the canal and continues to slope gently upwards as one moves further south. The town's slightly elevated position provides several panoramic and long distance views across the canal toward the agricultural hinterland further north. The River Barrow and surrounding lands are designated a candidate Special Area of Conservation. The lands separating the canal and the river are heavily wooded and are an important amenity for the town.

It is the policy of Carlow County Council:

L 1: To contribute towards the protection of county and local level landscape designations from incompatible developments. Proposals for development that have the potential to significantly adversely impact upon these designations shall be accompanied by an assessment of the potential landscape and visual impacts of the proposed development - demonstrating that landscape impacts have been anticipated and avoided to a level consistent with the sensitivity of the landscape and the nature of the designation.

6.7 Streets and Movement

Muine Bheag has a distinctive grid pattern which provides for a hierarchy of streets and good levels of permeability. This hierarchy consists of the main approach roads, the principal streets, Main Street, Church Street, Market Square and Kilree Street, secondary streets such as Regent Street, Barrett Street and Hotel Street, and smaller lanes and way leaves. This street pattern has largely been laid out orthogonally with instances of staggered / offset alignments.

The sustainable development of urban areas relies on minimising reliance on the car to carry out daily functions. At the same time the use of environmentally friendly modes of transport such as walking, cycling and public transport should be encouraged.

In Muine Bheag / Royal Oak, there are three main elements that support the enhancement of the town and these are enhancing walking routes, designating car parking areas outside of the town centre, and modifying the flow of through traffic to improve circulation and reduce congestion.

The quality of Muine Bheag / Royal Oak streets and spaces is compromised where:

- Wirescape dominates;
- Surfaces including footpaths and carriageways are of poor quality;
- Street furniture is limited;
- Street lighting is unattractive;
- Street planting is intermittent and
- Car parking dominates.

It is a policy of Carlow County Council:

SM 1: To ensure that any new development is well connected to the rest of the town and is within a comfortable walking distance.

SM 2: To seek to reduce clutter in the town centre and to make the town centre a pedestrian-friendly place by improving safety and comfort and improving pedestrian facilities such as street furniture, footpaths and crossings.

SM 3: To improve the network of walking routes in and through the town centre and between notable features and attractions.

SM 4: To utilise existing features such as the River Barrow and canal tow path as the focus and basis for developing walking routes connecting the town to its wider county context, subject to the requirements of the Habitats Directive.

SM 5: To reduce unnecessary vehicular traffic from the town centre.

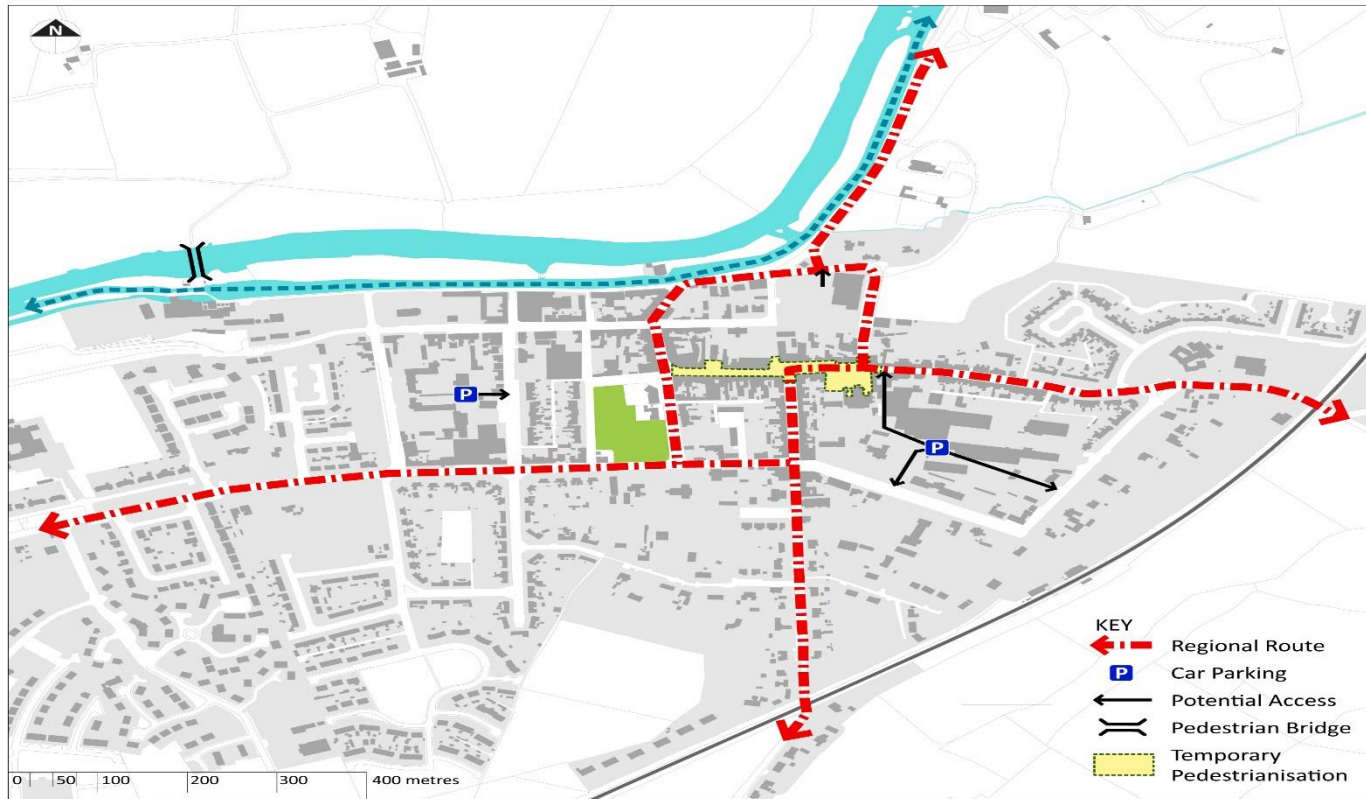
It is an objective of Carlow County Council:

SMO 1: To designate off street car parking areas at key sites.

SMO 2: To upgrade and resurface Main Street for temporary pedestrianisation to allow for temporary events such as fairs, farmers markets etc.

SMO 3: To seek the rehabilitation of the existing footbridge at canal lock.

SMO 4: To seek the upgrade of the canal front with the introduction of restrictions on vehicular movements.



Map 9: Muine Bheag Streets and Movement

6.8 Public Spaces and Public Realm

The public realm in a town is comprised of streets, squares, parks, courtyards, alleys, malls, car parks and the spaces between buildings, all those parts of the town that are accessible to the public. Features within the public realm may include trees, seats, flower planters, public art and sculpture, traffic signs, railings, steps, water features and advertising hoardings. The use of space can vary from a place to meet or relax, street cafes and restaurants, a venue for events, area for trading to a place for public art and sculpture. Successful public realm in a town is essential in the creation of an attractive and sustainable living and working environment and the establishment of a unique identity and sense of place for the town.

The Market Square, Fairgreen and Quay Front are the principal urban spaces in Muine Bheag. Each space is unique in form and function and enriches the urban fabric of the town. Unfortunately, the value of these spaces has deteriorated where development has not been sympathetic to the integrity of the public domain. Other focal spaces include junctions and intersections where activity and movement is concentrated and corner buildings are prominent.

In Muine Bheag it is important to protect the distinctive character of the town and to enhance the quality of the built environment so as to enable people to continue living in attractive and safe surroundings, and to ensure a similar standard for future generations. This can be achieved through promoting new development, places and spaces that are of high quality, which promote sustainable lifestyles, are appropriately scaled, are responsive to their contextual surroundings, amenity, heritage, environment and landscape of the town and contribute to the future potential of the area.

The key aim for public space in Muine Bheag is to place renewed emphasis on the quality and design of public space in the town. The River Barrow and Canal, the planned grid of the town centre and five main approach roads can be regarded as the primary structuring elements that, together with the 19th and 20th Century building stock, collectively define the unique urban character of Muine Bheag.

Improving public space in the town will involve;

- Upgrading of the key streets and spaces; and

- Consolidation and augmentation of existing tree lines and groups and new structured tree planting on the approaches to the town and along key routes.

These are jointly designed to increase the attractiveness of the retail core as a destination and strengthen the approaches and sense of arrival into the town.

It is a policy of Carlow County Council:

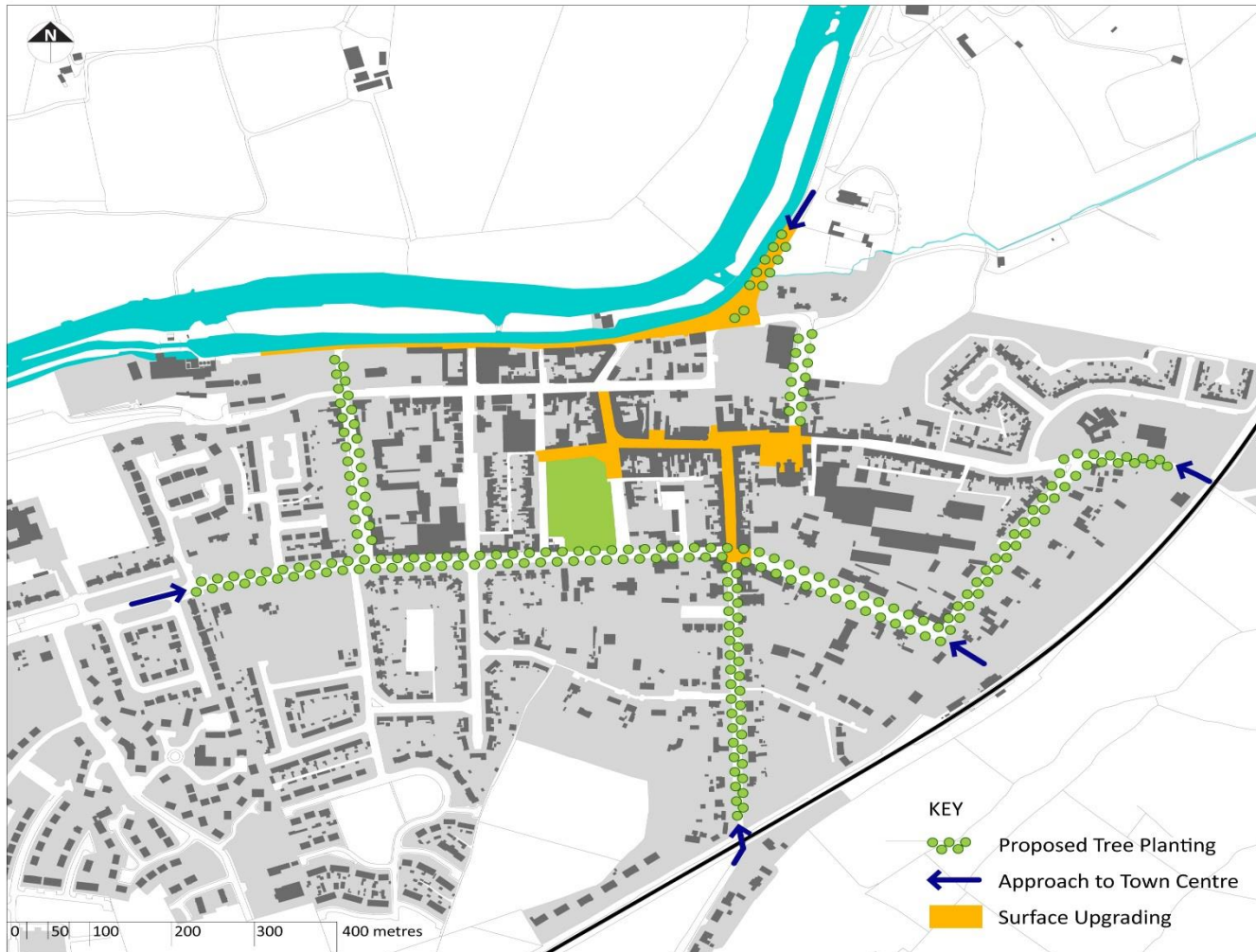
PR 1: To promote diversity, structure and continuity in the public realm through the creation, maintenance and restoration of urban spaces such as streets and squares and to provide a pleasant sense of place and enclosure.

PR 2: To prioritise the improvement of, and access to, the waterfront area and the retail core for the enjoyment of both visitors and residents alike.

It is an objective of Carlow County Council:

PRO 1: To upgrade footpath and roadway surfaces where appropriate and seek removal of overhead wires.

PRO 2: To enrich the local streetscape character through the provision of appropriate street paving, furniture and planting of street trees at appropriate locations.



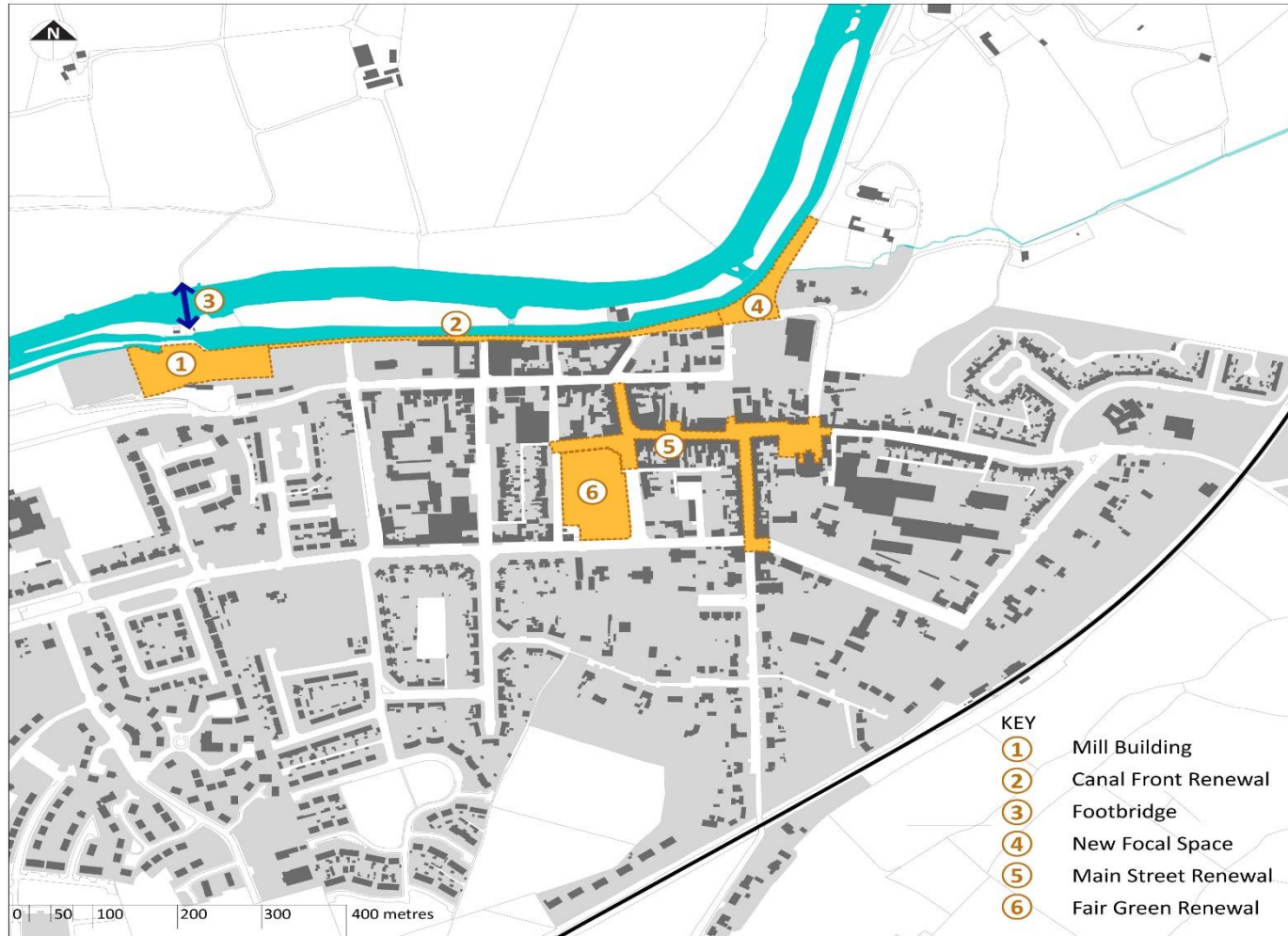
Map 10: Muine Bheag Public Spaces

6.9 Projects

Key projects involving the public and private sectors will play an important role in promoting sustainable development for Muine Bheag Town Centre. The following are projects that would go some way in improving the public realm and overall attractiveness of the town;

- **Bridge:** Rehabilitation of existing footbridge at Canal Lock.
- **Mill Site:** Adaptive reuse to complement and enhance existing character and heritage of Muine Bheag.
- **Waterfront:** Resurfacing of canal front to provide a public promenade and creation of a new active uses.
- **Fair Green:** Relocation of fire station and renewal of the park.
- **Main Street, Market Square, Fair Green North, High Street, Kilree Street:** Resurfacing of town centre areas to enhance pedestrian environment.
- **Town Centre/ Neighbourhood Centre:** Removal of wirescape from town centre streets.

The following images show how a number of key areas within the Muine Bheag / Royal Oak Plan area can be transformed into attractive civic spaces.



Map 11: Muine Bheag Projects

Fig 7 View of Canal Front



Fig 8: The indicative transformation of Canal Front into a vibrant area and a quality public realm.

Fig 9 View of Canal Front from Leighlinbridge Road



Fig 10: The indicative transformation of Canal Front into a vibrant area and a quality public realm.

Fig 11 View of Town Centre



Fig 12: The indicative transformation of Town Centre into a vibrant area and a quality public realm.

Fig 13 View of Royal Oak Approach



Fig 14: Illustrating additional planting to Royal Oak approach.

6.10 Guidelines for Future Development

Sustainability

Sustainability criteria for future development should be considered at macro and micro levels. Further, sustainable objectives should not only seek to satisfy environmental criteria but also ensure that social and economic objectives are achieved.

At a macro level, proposed development should seek to :

- Utilise land effectively.
- Ensure an adequate mix of uses are provided locally in order to reduce the need to travel, and
- Maximise access to sustainable modes of transport including cycling and public transport.

At a site planning level, sustainable urban form should ensure appropriate micro-climates are established between buildings. Equally, sustainable urban forms should ensure that buildings receive adequate levels of light, ventilation and passive solar energy whilst minimising heat loss and exposure.

At this scale, proposals should also investigate the feasibility of;

- Alternative energy sources
- Sustainable Urban Drainage Systems (SUDs) and
- Waste recycling facilities.

At a micro level building designs should seek to;

- Reduce energy demand including thermal energy for space and water heating and electrical energy for power and lighting.
- Maximise solar potential and aspect, and
- Provide for building evolution through adaptable design.

Urban Grain

The fine grain plot subdivisions (i.e., deep plots with narrow street frontage) of the town centre should inform the development of any future town centre or adjacent development. On brownfield sites there are opportunities to retain some of the larger plots but also to create smaller parcels of mixed size for development. It is important that this essential element of character, identity and diversity is retained in new development by prioritising sensitive infill development and by discouraging amalgamation of individual plots into larger sites by developers.

Although development of some existing large sites in the town is likely to be approached in a more comprehensive manner, the breaking up of existing large sites into smaller parcels with shared courtyards will be encouraged, particularly on those parts of the site fronting existing streets.

Built Form

New developments should adapt the perimeter block typology and respect the established historical street pattern. The perimeter block typology promotes a unity of built form in terms of continuity of building line whilst facilitating a fine grain and variety of plot sizes and building heights within each block.

Height and Scale

The context height of the area is influenced by the following parameters;

- Respecting existing scale and typologies of the town.
- Achieving sustainable densities of development.
- Maintaining a human scale to streets, spaces and the canal front.
- Providing appropriate levels, continuity and enclosure.
- Reflecting local constraints such as protected structures and existing development.
- Emphasising place and location.

- Emphasising significant use or function.
- Maintaining quality private and semi-private open spaces.

New buildings on the canal front should be a minimum of two storeys with proposals up to four storeys being considered on their individual merits. Height variation will be encouraged through diversity of building usage and type.

The context height of the town centre is generally two to three storeys. It may be possible for higher buildings to achieve this through good quality design however, and proposals in excess of this context height will be examined on their individual merit.

Access and Car Parking

Individual or 'own door' access should be required where feasible. Vehicular access to the rear should be carefully considered having regard to the tradition of providing arched lanes either between or under buildings. In particular, care must be taken to avoid oversized or crudely designed gates or ramps that unduly disrupt the continuity of the streetscape.

In larger developments the impact of new street access on the continuity of the street should be minimised. Side lane or street access should be considered where possible, in preference to access off main town centre streets. Development proposals for large sites will be required to accommodate provision for multi-level car parking. Developments where significant loading and unloading is likely to occur will be required to seek solutions on-site.

CHAPTER 7 TRANSPORTATION AND MOVEMENT

7.1 Introduction

The availability of an efficient transport system is vital for the development of Muine Bheag / Royal Oak and its hinterland as it will enhance the capability of the town to support business, commercial and manufacturing activities that are crucial for the towns continued development.

Transport plays a central role in the economy of any urban centre, with the attractiveness of a location for business and residential development dependent on the provision of a full range of transportation services. The proximity to the motorway and the regional road network together with the railway station serving the town are important infrastructural assets which can contribute to the future sustainable development of the area.

In addition the effective integration of land use and transportation will generate and reinforce sustainable settlement patterns and make the most efficient use of land. In this regard the plan has a significant part to play in seeking to deliver sustainable development into the future and minimising the need to travel by car.

7.2 Challenges

Access and circulation routes in Muine Bheag / Royal Oak are largely defined by the historical development of the town and its relationship to its topography as well as the River Barrow and the railway line which act as barriers and restrict access.

While permeability within the town centre is good, connections and linkages between residential areas back into the town centre are poor.

The previous LAP 2010-2016 indicated a relief road to the south of the town linking the Royal Oak Road through the industrial zoned land connecting to Kilree Street and further south to the R705. This objective is also contained within this LAP and aims to divert HGVs from accessing the town centre thereby maintaining a more appropriate environmental quality to the town centre.



7.3 Strategic Approach

Carlow County Council recognises that the current trends in transportation are unsustainable, in particular the increase in vehicular traffic throughout the town, which in turn causes congestion and reduces traffic flow, especially at peak times such as schools and factories opening / closing hours. The Council therefore has a responsibility to encourage a modal change from private car usage to more sustainable means such as walking, cycling and increased usage of public transport.

The provision of a full range of transportation services for those residing in and also for those working in and visiting Muine Bheag / Royal Oak is crucial in promoting a modal change to a more sustainable transport network in the town and its environs.

The approach is to;

- Place a stronger emphasis on sustainable modes of transport such as walking, cycling and public transport, particularly for short trips and journeys to work and school.
- Improve and enhance connectivity between the town centre, residential areas, community facilities, tourist attractions and amenity areas where appropriate.
- Improve transport and movement within the town and reduce congestion.

7.4 Smarter Travel

The Muine Bheag / Royal Oak Local Area Plan recognises and supports the importance of sustainable transport, including the effective integration of land use and transport and encouraging a modal shift from private transport to public transport, walking and cycling.

The plan has had due regard to applicable national legislation and policy, including Smarter Travel: A New Transport Policy for Ireland 2009-2020, Spatial Planning and National Roads Guidelines for Planning Authorities(2012), The Traffic Management Guidelines (2003) and the Design Manual for Urban Roads and Streets (2013). This new manual aims to end the practice of designing streets as traffic corridors, and instead focuses on the needs of pedestrians, cyclists and public transport users.

It is the policy of Carlow County Council:

- TP 1:** To continue to promote a modal shift from private car use towards increased use of more sustainable modes of transport such as cycling, walking and public transport and to implement the initiatives contained in Government's "Smarter Travel, A Sustainable Transport Future 2009-2020".
- TP 2:** To improve the pedestrian environment and promote the development of a network of pedestrian routes which link residential areas with recreational, educational, employment and tourist destinations to create a pedestrian environment that is safe and accessible by all.
- TP 3:** To support co-ordination by transport providers to promote linked up transport services enabling complete coverage of Muine Bheag / Royal Oak through the creation of an integrated transport hub. This will be developed by providing bus stops around the railway station, cycle parking stands at the station and bus stops and by providing good pedestrian facilities throughout Muine Bheag / Royal Oak.
- TP 4:** To support the Government's Electric Transport Programme 2008 – 2020 by facilitating the roll-out of battery charging infrastructure for electric vehicles at various locations throughout Muine Bheag". The provision of such infrastructure shall comply with the requirements and specifications of Trans Policy 14 and Energy Policy 12 as contained in the Carlow County Development Plan 2015-2021.

It is an objective of Carlow County Council:

- TO 1:** To provide appropriate facilities for pedestrians and for people with special mobility needs in line with the aims of the European Charter of Pedestrian Rights.
- TO 2:** To promote and facilitate the provision of secure parking areas for bicycles in Muine Bheag town centre and at key tourist attractions throughout the town.



7.5 Transport Infrastructure

Muine Bheag / Royal Oak has good infrastructure in terms of roads and rail network. It has access to airports and seaports, being located 105km from Dublin, 65km from Waterford and 80km from Rosslare. The town is also strategically located adjacent to the M9 Dublin to Waterford motorway, allowing increased accessibility to the town.

The town is within 25km of both Carlow and Kilkenny and is on the R705 Carlow to Borris regional road. It is also located on the R734 regional road to Kildavin / Bunclody.

It is the policy of Carlow County Council:

TP 5: To ensure that the road and street network of Muine Bheag / Royal Oak is safe and convenient, that it has adequate capacity to accommodate motorised traffic and non-motorised movements, that it has a high environmental quality with appropriate adjacent development and built form, particularly in the case of urban streets and streetscapes, and that adequate parking facilities are provided to serve the needs of the town.

In this regard, the principles, approaches and standards as set out in relevant national policy shall inform future transport infrastructure and urban development. This shall include the Spatial Planning and National Roads Guidelines 2012, the Sustainable Residential Development in Urban Areas Guidelines for Planning Authorities 2009 and accompanying Urban Design Manual 2009, the Traffic Management Guidelines 2003, the Traffic and Transport Assessment Guidelines 2007, the Design Manual for Urban Roads and Streets (2013), the NRA Design Manual for Roads and Bridges (as appropriate to the regional road network outside areas subject to a reduced urban speed limit) and any updates or forthcoming guidelines in relation to street design and walking / cycling facilities.

TP 6: To promote road and traffic safety measures in conjunction with relevant Government Departments and other agencies through the provision of appropriate signage, minimising or removing existing traffic hazards and preventing the creation of additional or new traffic hazards.

It is an objective of Carlow County Council:

TO 3: To investigate the feasibility of providing the Muine Bheag Relief Road to facilitate by-passable traffic using the regional road network to New Ross and Rosslare Ports and the Motorway to Dublin.

TO 4: To develop a new route linking the town centre at Kilree Bridge to existing and proposed development on the western side of the town.

TO 5: To continue to upgrade the condition of road and footpath surfaces in conjunction with the Council's annual roads programme.

TO 6: To monitor and upgrade, where necessary, the standard of public lighting throughout the town.

TO 7: To investigate and seek the improvement of pedestrian facilities at Kilcarrig Bridge.

TO 8: To improve deficiencies in pavement surface, quality and general alignment and to protect future road lines where required.

7.6 Public Transport

Muine Bheag has a railway station and is a scheduled stop along the Dublin / Waterford rail line.

In terms of public bus transport, both Bus Eireann and private operators run a regular bus service serving the area.



It is the policy of Carlow County Council:

TP 7: To co-operate with public transport service providers to ensure that adequate public transport services are provided to the town.

TP 8: To support the provision of public transport services by reserving land in suitable locations for public transport infrastructure and ancillary facilities such as park-and-ride.

7.7 Traffic Management and Parking

The aim of Carlow County Council is to support the enhancement of the urban street network, to promote the efficiency of traffic circulation and management around Muine Bheag and the Royal Oak and to facilitate the appropriate provision of parking convenient to the town centre.

A number of public roads converge at Muine Bheag including the R705 to Borris and the R734 to Kildavin. These vehicular conduits can generate traffic congestion at key junctions in the town during peak periods along with the junction with the R448 from Carlow to Kilkenny.

It is the policy of Carlow County Council:

- TP 9:** To monitor traffic movements in the town and to provide passive traffic calming measures at appropriate locations as the need arises.
- TP 10:** To ensure that new entrances are located in such a manner as to provide effective visibility for both users of the entrance and users of the public roads and footpaths throughout the town and its environs, so that opportunities for conflicting traffic movements are avoided, in the interests of public safety.

It is an objective of Carlow County Council:

- TO 9:** To examine the feasibility of providing additional off street car parking within and in close proximity to the town centre and to seek the provision of same following identification of suitable sites.
- TO 10:** To provide accessible car parking spaces at appropriate locations throughout the town.

CHAPTER 8 COMMUNITY, SOCIAL AND RECREATIONAL DEVELOPMENT

8.1 Introduction

Muine Bheag / Royal Oak has many community facilities, community groups, clubs and recreational / amenity facilities. An important driver in the provision of such facilities is the long standing and sustained activity among the community and interest groups in providing facilities in Muine Bheag / Royal Oak which benefit locals and those beyond the town. The Council will support and engage with the local community and government departments in relation to the development of existing or new facilities within Muine Bheag / Royal Oak and its surrounding hinterlands.

It is recognised that the provision of such facilities are critical to the creation of sustainable communities and constitute an important element in social infrastructure which will continue to make Muine Bheag / Royal Oak a desirable place in which to live, work and recreate.



8.2 Challenges

An expanding population generates an increased demand for the provision of services, community facilities, school places and amenities. It is essential that these facilities are provided in tandem with new development and as new communities emerge. The primary role of the Planning Authority regarding social and community infrastructure is the provision of the planning framework in the LAP. This includes the zoning of sufficient lands at appropriate locations, to accommodate educational, community, leisure and recreational facilities along with providing the policies and objectives

in the plan which support and facilitate future quality developments of this kind.

Some key challenges in achieving delivery of social and community facilities include adequate funding provision and environmental sensitivities. Encouraging multi-functional use of social, community and recreational facilities is a factor which is now greatly encouraged and it is hoped that all such existing facilities within the plan area will embrace this throughout the lifetime of the plan and beyond.

Encouraging increased community engagement and interest is supported by the Council. Engagement must seek to include all ages and nationalities as there are many diverse communities in Muine Bheag. Social inclusion is important in that it ensures all people are provided with equal opportunities to participate. Carlow County Council will ensure that there are adequate lands zoned for community and recreational purposes within the area and will seek to support the consolidation and enhancement of existing recreational and community facilities within Muine Bheag / Royal Oak.

8.3 Strategic Approach

Carlow County Council will take the following approach in facilitating the provision of good quality social, community and recreational facilities beneficial to all persons in Muine Bheag / Royal Oak:

- Continue to support and facilitate voluntary organisations within the town and community of Muine Bheag / Royal Oak.
- Promote the development of social capital by providing opportunities for interaction, participation and the co-ordinated provision of public services.
- Make Muine Bheag / Royal Oak an attractive place to live and work by building strong, inclusive communities that have a sense of place and belonging, with adequate provision of and access to services and facilities to meet future needs.

8.4 Community Facilities

Muine Bheag possesses a wealth of community facilities, located throughout the plan area. These include a health centre, a nursing home, a family resource centre, library, fire station, community hall, bank, churches including St. Andrews Catholic Church and St. Mary's Church of Ireland and the credit union.



The community also participates in multi-functional use of certain vacant buildings which is welcomed and should be further explored in other buildings. (e.g. the old St. Mary's National School being used as a location for the farmers market and also as a venue for meetings). The sharing of community facilities is a big step forward in terms of creating sustainable communities and should be encouraged throughout clubs / community.

It is the policy of Carlow County Council to:

- CF 1:** To support and nurture intergenerational and cross cultural relationships through the development of community initiatives such as community gardens / allotments.
- CF 2:** To promote the development of sustainable communities on the basis of a high quality of life where people can live, work and enjoy access to a wide range of community, health and educational facilities suitable for all ages, needs and abilities.
- CF 3:** To encourage high standards in the design and finishes of community facilities.
- CF 4:** To optimise existing and proposed physical resources / infrastructure by supporting multi-functional building / facility use and provision.

- CF 5:** To encourage the siting of community facilities in suitable locations, close to existing facilities / services and public transport routes.
- CF 6:** To recognise the importance of community participation in the improvement of existing community and recreational facilities, and encourage increased involvement of local groups, both independently and in association with the relevant statutory bodies, in the future provision of such facilities. Carlow PPN structures are a vital source in terms of progressing community participation.
- CF 7:** To consider the accommodation of small-scale community enterprise developments within existing and proposed community facilities, subject to appropriate design, layout and servicing.

It is an objective of Carlow County Council:

- CFO 1:** To endeavour to ensure that all community, social and recreational facilities are inclusive and accessible to all.
- CFO 2:** To assist as far as possible in the provision of community facilities by reserving suitably located land and / or by the use of the development management process to ensure provision is made for such facilities as the Council considers appropriate.
- CFO 3:** To continue to support and facilitate voluntary organisations in the town and environs.
- CFO 4:** To advance social inclusion and community development by developing the co-ordinated delivery of services and facilities in Muine Bheag / Royal Oak.

8.5 Educational Facilities

Muine Bheag / Royal Oak is served by three National Schools and two secondary schools. The schools are St. Bridget's N.S., Queen of the Universe N.S., St. Mary's N.S., Muine Bheag VEC and Presentation De La Salle secondary school.

	Name	Enrolment
		2015/2016
Primary	Queen of Universe	285
	St. Bridget's Monastery	132
	St. Mary's	95
Post-Primary	Presentation / De La Salle	596
	Vocational School	217

Table 10: Profile of existing schools in Muine Bheag (Source: DoES)

Carlow County Council has made suitable provision in this plan by zoning appropriate lands to facilitate the development and potential future expansion of schools and will continue to work with the Department of Education and Skills and all schools to facilitate all future educational requirements as necessary. The Council is also open to the concept of multi-campus arrangements, where two or more schools, primary or secondary share the same site. Particular account needs to be taken of the Core Strategy population target, the extent of housing lands zoned within the plan area and the future effects that this will have on school capacities and educational demands.

It is the policy of Carlow County Council to:

EU 1:	To facilitate and co-operate in the provision of schools, crèches and other education and childcare facilities.
EU 2:	To facilitate the provision of continuing educational facilities which provide for lifelong learning for all, including the elderly.

It is an objective of Carlow County Council:

EUO 1: To actively assist and liaise with the Department of Education and Skills in the provision of new and additional school places as may be required.

8.6 Sports, Recreation and Play

Children's play is important to their development. It is through play that they learn to socialise and interact with the world. In supporting play we need residential areas, parks and open spaces that are safe and enjoyable for children of different ages. Muine Bheag / Royal Oak possesses an abundance of recreational facilities, many based at McGrath Park. These include St. Andrews GAA, Muine Bheag Juvenile GAA Club, Muine Bheag Camogie Club, Bagenalstown Soccer Club, Bagenalstown Rounder's Club, Bagenalstown Pitch and Putt Club and Erins Own Hurling Club.



Muine Bheag also has a Scouts Hall off the Main Street, a children's playpark in the Fairgreen along with an outdoor swimming pool.

Carlow County Council acknowledges the very important roles that sporting and social clubs play in enhancing the social and recreational life of the town's communities. Facilities for both formal and informal recreation and catering for the entire community of all abilities are required.



Alongside the River Barrow is the main walking trail which is actively used by the community and visitors alike, as one can walk from Muine Bheag to Leighlinbridge and all the way to St. Mullins alongside the river.

There is however a lack of clubs utilising the river such as kayaking or rowing clubs and no leisure centre within the town which would be a beneficial amenity to the locals and residents in the surrounding hinterlands. Amenities for teenagers would be of benefit to the town.

Carlow County Council through policies and objectives contained within this plan, as well as through the Community Sports Partnership and other recreational groups will continue to support and enhance the recreational amenities of Muine Bheag / Royal Oak.

It is the policy of Carlow County Council to:

- SP 1:** To maintain and enhance existing recreational facilities.
- SP 2:** To continue to co-operate with community and sports bodies in the development of recreational areas in the town.
- SP 3:** To prohibit the loss of existing public and private recreational open space unless alternative recreational facilities are provided at a suitable location.
- SP 4:** To seek the provision of children's play facilities in new residential developments where deemed appropriate.

It is an objective of Carlow County Council:

- SPO 1:** To endeavour to provide play spaces throughout the town.
- SPO 2:** To encourage and facilitate the provision of adult amenities in parks such as table tennis, outdoor gyms, basketball courts, bowling greens and associated facilities etc.
- SPO 3:** To involve children and young people in greening initiatives and biodiversity projects, having regard to their need to interact with and be educated by nature.

8.7 Recreational Potential of the River Barrow

Muine Bheag's location directly adjoining the River Barrow affords the opportunity to improve the recreational, amenity, ecological and tourism potential offered by the water through the provision of a more vibrant riverside landscape. The River Barrow has considerable potential both waterside and landside to be used as a recreational asset to Muine Bheag. This can be done by improving the visual amenity along the riverside, by more tree and flower planting, regeneration of vacant buildings or maintaining and improving facades. There are extremely well maintained green spaces alongside the river, but this needs to be continued the extent of the river within the plan area, subject to consultation with the NPWS to ensure that any works / improvement schemes will minimise any disturbance to the Natura 2000 site and its flora and fauna.

The river amenities need to be utilised to their full potential in order to be seen as a public gain, such as the area around the slipway in Dunleckny being a central point around which water sport clubs can build, again all subject to no adverse effects on the Natura 2000 site.

Maintaining adequate lighting and surfaces along the river are optimum in terms of ensuring pedestrian / cyclist safety and ensure Muine Bheag's riverside is a safe area to walk / cycle.



It is the policy of Carlow County Council to:

- RC 1:** To facilitate where practicable the provision of cycle-ways / walkways along the extent of the River Barrow and Canal in co-operation with landowners, Waterways Ireland and government departments. Any proposed cycling or walking routes along the River and Canal will be subject to Appropriate Assessment in accordance with the Habitats Directive.
- RC 2:** To support the conservation of local angling waters and investigate the feasibility of developing these waters and associated infrastructure required to advance the sport in the town, subject to the requirements of the Habitats Directive.
- RC 3:** To continue to co-operate with community and sports bodies in the development of the River Barrow and Canal for recreational uses. Projects shall have regard to the requirement for Appropriate Assessment in accordance with the Habitats Directive.

CHAPTER 9 UTILITIES INFRASTRUCTURE, CLIMATE CHANGE AND ENVIRONMENTAL MANAGEMENT

9.1 Introduction

The future development and sustainable growth of Muine Bheag / Royal Oak is dependent on the satisfactory provision of infrastructure including water, wastewater, utilities, energy and good quality communication networks. Adequate capacity is necessary to support future development, in a manner that is environmentally and ecologically appropriate, cost effective and protective of public health.

Carlow County Council is committed to facilitating the provision and delivery of infrastructural services, which will enhance the environment and facilitate sustainable economic development. The policies and objectives of Carlow County Council seek to provide high quality public infrastructure, to minimise waste, mitigate where possible and adapt to the impacts of climate change, protect and improve water resources/water dependant ecosystems, ensure efficient and effective wastewater treatment, and to support the provision of a green infrastructure network.

Certain infrastructural requirements including energy supply, telecommunications, the production and distribution of public drinking water supply and the collection and treatment of waste water, while not a direct remit of Carlow County Council have implications for planning and development. Carlow County Council will continue to support where appropriate the delivery of such infrastructure.

9.2 Challenges

The main challenge is to seek the provision of adequate waste water treatment to meet future demand due to economic development and population growth. Improving the efficiency of the existing networks and encouraging water conservation is also a key priority.

The main objective with regard to waste management is to facilitate the development of recycling in order to minimise the use of landfill.

Surface water drainage in Muine Bheag / Royal Oak is currently adequate except for one area on the R705 at Brewery Lane. This problem has been sourced back to a section of the old millrace being closed and as a result

this section of millrace stopped functioning as an overflow for the stream that has been causing the flooding on the R705. Remedial action was undertaken to address this matter.

The issue of climate change and the impact of increased flood risk due to extremes of weather by flood risk management is also a key challenge for the future development of the town. Flood risk assessment and management is required for all aspects of the local area plan, including the areas of urban design, flood resilient construction materials and individual developments. In this matter the local area plan has had regard to the Department of the Environment, Heritage and Local Government, Guidelines for Planning Authorities on Flood Risk Management, 2009. A sustainable approach is required in relation to the management of the essential engineering and water services with the emphasis on conservation and efficient use of resources.

9.3 Strategic Approach

Infrastructural services policies and objectives will address these issues in order to achieve a clean, healthy town with improvements to air and water quality, biodiversity value and the use of renewable energy sources. The approach is to;

- Collaborate with and support Irish Water as lead authority in the provision of water services for the town and in particular to ensure:
 - The quality and capacity of the wastewater treatment plant is sufficient to cater for sustainable growth into the future.
 - The provision of a resilient supply of wholesome and clean drinking water in compliance with EU and Irish National Legislation (Drinking Water Regulations and future amendments).
- Reduce the town's reliance on unsustainable energy and fuel sources and its contribution to climate change in order to secure a sustainable, low carbon future.

- Protect and achieve the efficient use of natural resources, such as water.
- Encourage sustainable production, delivery and consumption of drinking water.
- Reduce dependency on fossil fuels and improve energy efficiency in new and existing buildings and promote the use of renewable energy in the town's building stock.
- Minimise waste, with an emphasis on maximum recycling.
- Utilise Flood Risk Assessment techniques, through the identification and protection of existing and proposed flood defences and the delivery of flood resilient urban and building design and construction.
- Develop greater co-ordination with other planning authorities, the Environmental Protection Agency and utility providers with regard to infrastructural and climate change issues.
- Improve the town's resilience and ability to adapt to climate change.

9.4 Policies and Objectives

9.4.1 Water Supply and Quality

Carlow County Council seeks to ensure that there is adequate services and infrastructure associated with the water supply network for current and future development in co-operation with Irish Water. The Bagenalstown Water Supply Scheme supplies drinking water to the area and is supplied by two water treatment plants, namely Bagenalstown Water Treatment Plant (WTP) and Royal Oak Water Treatment Plant.

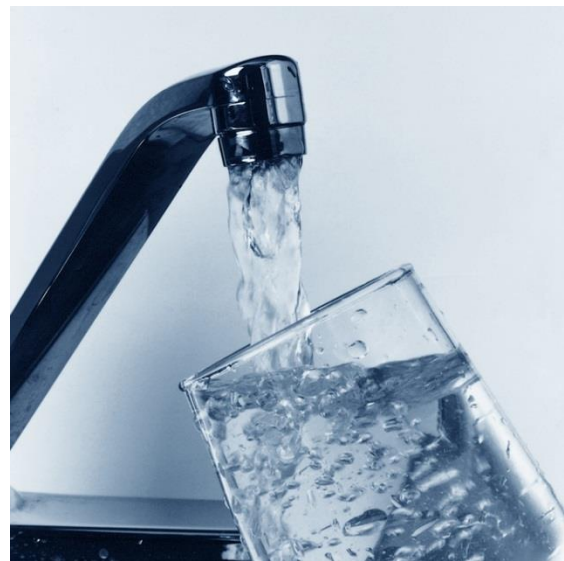
The Bagenalstown WTP is supplied by 3 boreholes, 2 boreholes at the Treatment Plant and 1 borehole located near McGrath Park. The Treatment Plant has the capacity to supply 1,800 cubic metres per day, but currently supplies the town with 1,500 cubic metres per day.

The Royal Oak Water Treatment Plant is located in the Royal Oak Business Park and is supplied by two wells located at the treatment

plant. This treatment plant has the capacity to supply 1,800 cubic metres per day but currently supplies 600 cubic metres to the town.

Overall, there is capacity in the water supply system to produce another 1,500 cubic metres per day and this would cater for any future development growth during the lifetime of this plan.

Water supplied to the town is tested regularly and is consistently of the highest quality.



It is a policy of Carlow County Council:

WSP 1: To contribute towards the protection of existing and potential water resources, and their use by humans and wildlife, including rivers, streams, groundwater and associated habitats and species in accordance with the requirements and guidance in the EU Water Framework Directive 2000 (2000/60/EC), the European Union (Water Policy) Regulations 2003 (as amended), the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009), the Groundwater Directive 2006/118/EC and the European Communities Environmental Objectives (groundwater) Regulations, 2010 (S.I. No. 9 of 2010) and other relevant EU Directives, including associated national legislation and policy guidance (including any superseding versions of same). To also support the application and implementation of a catchment planning and management approach to development and conservation, including the implementation of Sustainable Drainage System techniques for new development.

- WSP 2:** To support the implementation of the relevant recommendations and measures as outlined in the relevant River Basin Management Plan, and associated Programmes of Measures, or any such plans that may supersede same during the lifetime of the plan, as well as relevant recommendations contained in the Water Quality in Ireland 2010 – 2012 (EPA, 2015, and any updated/superseding document). Proposals for development would not have an unacceptable impact on the water environment, including surface waters, groundwater quality and quantity, river corridors and associated woodlands. Also to have cognisance of, where relevant, the EU's Common Implementation Strategy Guidance Document No. 20 which provides guidance on exemptions to the environmental objectives of the Water Framework Directive.
- WSP 3:** To facilitate Irish Water in providing water, sufficient in quantity and quality to serve the needs of the existing and future population of Muine Bheag and Royal Oak and to promote the sustainable management of the towns water supply.
- WSP 4:** To maximise the potential for beneficial re-use of water through rainwater harvesting systems and to reduce leakage to the minimum possible level in the water supply system through operational leak detection measures.
- WSP 5:** To ensure that in the case of all new developments where public mains are available or likely to be available, the development will be required to connect into them subject to an agreement with Irish Water.
- WSP 6:** To ensure that development will not be permitted in instances where there is insufficient capacity in the public water infrastructure.
- WSP 7:** To ensure that development proposals comply with the standards and requirements of Irish Water in relation to water to facilitate proposed developments and to encourage all developers requiring a connection to the public water supply to contact Irish Water prior to submitting a planning application.
- WSP 8:** To protect surface water and ground water resources and their associated habitats and species including fisheries and in particular Annex II listed species.

It is an objective of Carlow County Council:

- WSO 1:** To collaborate with Irish Water in contributing towards compliance with the European Communities (Drinking Water) Regulations (No.2) 2007 and ensure, that the water supply serving Muine Bheag / Royal Oak complies with the 48 parameters identified in these regulations.
- WSO 2:** To facilitate the implementation of water conservation projects, which reduce consumption and leakage in existing water distribution systems, in co-operation with Irish Water.
- WSO 3:** To require the adoption of water saving measures in new development proposals. Such measures may include:
- Water butts to collect rainwater
 - Low flush and dual flush toilets
 - Low water use appliances
 - Rainwater harvesting.
- WSO 4:** To have regard to the EPA publication 'The Provision and Quality of Drinking Water in Ireland – A Report for the year 2014' (and any subsequent update) in the maintenance of Muine Bheag / Royal Oak's water source in conjunction with Irish Water.
- WSO 5:** To seek the implementation of recommendations made by the EPA arising from any failure to meet drinking water standards and any enlistment on the EPA's Remedial Action List in conjunction with Irish Water.
- WSO 6:** To protect and safeguard the integrity of water supply facilities, installations and pipes.
- WSO 7:** To facilitate the identification and securing of service corridors for any future new water supply for Muine Bheag.
- WSO 8:** To ensure that all proposals for the development of an upgrade to the water supply system will be screened for Appropriate Assessment in accordance with Article 6(3) of the Habitats Directive and where significant impacts are identified, a Natura Impact Statement will be prepared.
- WSO 9:** To implement the Water Services Investment Programme 2016 - 2021 and all subsequent Water Services Investment Programmes.

9.4.2 Wastewater

The development of the town's wastewater drainage system is essential to facilitate growth. The current Muine Bheag waste water treatment plant has a designed treatment capacity of 4,000 population equivalent (PE). Upgrades to the plant have allowed for an increase in the organic treatment capacity of the plant. The current loading on the plant is estimated at 8,363 PE. Irish Water have acknowledged that this plant is overloaded and have advised that this plant is a candidate site for inclusion in the Emerging Capital Investment Plan.

It is the policy of Carlow County Council:

- WW 1:** To collaborate with Irish Water to ensure that public wastewater collection and treatment infrastructure fully complies with the requirements of the Urban Waste Water Treatment Regulations 2001 and 2004, the Waste Water Discharge Regulations 2007 and the EC Surface Water Regulations 2009.
- WW 2:** To promote, as appropriate, specific provisions for the implementation of the relevant recommendations set out in the recent Urban Waste Water Treatment in 2014 Report (EPA, 2015), in conjunction with Irish Water.
- WW 3:** Not to permit the development of zoned land unless sufficient waste water treatment capacity is available to conform to the objectives of the South East River Basin Management Plan.
- WW 4:** To ensure the changeover from septic tanks to mains connections in all cases where this is feasible, and that all new developments utilise and connect to the existing wastewater infrastructure. The provision of individual septic tanks and treatment plants within the plan boundary will be strongly discouraged to minimise the risk of groundwater pollution. Where such facilities are permitted, full compliance with the 2009 EPA Code of Practice - Wastewater Treatment and Disposal Systems Serving Single Houses (p.e. ≤ 10), is required.
- WW 5:** To facilitate Irish Water in providing additional and improved wastewater treatment capacity by the upgrading of the Muine Bheag Treatment Plant and to facilitate the provision and safeguarding of infrastructure corridors required to facilitate the sustainable development of the town.

It is an objective of Carlow County Council:

- WWO 1:** To co-operate with Irish Water in the provision of an improved sewerage network and sewage treatment capacity for Muine Bheag / Royal Oak.
- WWO 2:** To investigate the possible extension of the public sewerage system to any un-serviced areas within the Local Area Plan Boundary, in co-operation with Irish Water.
- WWO 3:** To ensure that any proposals for the development and /or upgrade of the Muine Bheag waste water treatment plant and waste water network will be subject to Appropriate Assessment in accordance with Article 6(3) and 6(4) of the EU Habitats Directive.
- WWO 4:** To ensure that all new developments shall be provided with separate foul and surface water networks. In redevelopments, combined systems shall be separated where feasible.

9.4.3 Flooding

The Office of Public Works is responsible at a national level to monitor and address situations pertaining to flooding and along with the Department of Environment, Community and Local Government has published a national guidance document on the consideration of flood risk within planning and development management.

The developer will be required to show that the flood risk can be managed at an acceptable level without increasing flood risk elsewhere and where possible, show a reduction in the overall flood risk.

CFRAM Programme

The CFRAM (Catchment Flood Risk Assessment and Management) Programme is a medium to long-term strategy for the reduction and management of flood risk in Ireland. The Office of Public Works work in close partnership with Carlow County Council in delivering the objectives of the CFRAM Programme in County Carlow. The CFRAM Programme has informed the Strategic Flood Risk Assessment in Appendix 3 of this Plan.

It is a policy of Carlow County Council:

FL 1 : To support, in co-operation with the OPW, the implementation of the EU Flood Risk Directive (2007/60/EC), the Flood Risk Regulations (SI No. 122 of 2010) and the DoEHLG/OPW publication The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 and Departmental Circular PL2/2014 (or any updated/superseding legislation or policy guidance). Carlow County Council will also take account of the OPW Catchment Flood Risk Management Plans (CFRAMS) as appropriate, the Preliminary Flood Risk Assessment (PFRA) and the Strategic Flood Risk Assessment for County Carlow 2015 – 2021.

FL 2: To have regard to the findings and recommendations of the current Strategic Flood Risk Assessment carried out for Muine Bheag / Royal Oak Local Area Plan area.

FL 3: To implement the use of the sequential approach and application of the Justification Tests for Development Management and Development Plans, during the period of this plan, as set out in the Flood Risk Management Guidelines as follows: 1) Avoid development that will be at risk of flooding or that will increase the flooding risk elsewhere, where possible; 2) Substitute less vulnerable uses, where avoidance is not possible; and 3) Justify, mitigate and manage the risk, where avoidance and substitution are not possible. Development should only be permitted in areas at risk of flooding when there are no alternative, reasonable sites available in areas at lower risk that also meet the objectives of proper planning and sustainable development.

FL 4: To ensure that all developments have regard to the surface water management conditions contained within the SFRA and appropriate section of the Local Area Plan / County Development Plan.

It is an objective of Carlow County Council:

FLO 1: To ensure the implementation of the DoEHLG/OPW publication The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 (including its accompanying Technical Appendices) and including the Department of the Environment, Community and Local Government's Circular PL 2/2014 (or any updated/superseding document) in relation

to flood risk management within the plan area.

FLO 2: To undertake a review of the SFRA following any subsequent alteration of flood mapping produced as part of the CFRAM.

FLO 3: To ensure that Flood Risk Assessments are carried out for any development proposal, in accordance with the "Planning System and Flood Risk Management – Guidelines for Planning Authorities (DoEHLG/OPW 2009). This assessment shall be appropriate to the scale and nature of risk to the potential development.

FLO 4: To protect water bodies and watercourses within the plan area from inappropriate development, including the river, canal, streams, associated undeveloped riparian strips, wetlands and natural floodplains. A 10 metre strip on either side of such channel will be retained, where required, to facilitate access thereto. In addition, promote the sustainable management and uses of water bodies and avoid culverting or realignment of these features.

SUDs

Sustainable Urban Drainage Systems (SUDs) are a method of replicating the natural character of rainfall runoff from any site. They provide hydraulic, water quality and environmental benefits. The overall objective is to minimise storm water runoff. Therefore permeable surfacing should be maximised in all new developments.

It is a policy of Carlow County Council:

SW 1: To require the use of Sustainable Urban Drainage Systems in all new developments where appropriate. The following measures will apply;

- The infiltration into the ground through the development of porous paving, swales and detention basins.
- The holding of water in storage areas through the construction of green roofs, rainwater harvesting, detention basins, ponds and wetlands.
- The slowdown of the movement of water.

It is an objective of Carlow County Council:

SWO 1: To improve and extend where technically feasible and economically viable the surface water disposal infrastructure to serve all zoned land, in order to facilitate development.

9.4.4 Climate Change

Current levels of greenhouse gas emissions such as carbon dioxide, methane and nitrous oxide are changing climates. The impacts of climate change present serious global risks and threaten the basic components of life, including health, access to water, food production and the use of land. With climate change there are increasing threats in terms of likelihood and severity of flooding and impacts on water resources, biodiversity, natural habitats and species distribution. Increased flooding caused by the River Barrow would be the most immediate threat to Muine Bheag as a result of climate change.

The Climate Action and Low Carbon Development Bill 2015 puts a framework in place to enable Ireland to make the transition to a low carbon economy by 2050. This will be achieved through a National Mitigation Plan to lower the level of greenhouse emissions and a National Adaptation Framework to provide for responses to changes caused by climate change. Furthermore the aforementioned Bill, targets a reduction in greenhouse gas emissions of 20 per cent over 1995 levels by 2020.

At a local level, Carlow County Council must contribute to the stabilisation and reduction of national greenhouse gas emissions, including climate change adaptation through the promotion of renewable energy sources and energy conservation in policies and objectives regarding the environment, housing and infrastructure. These policies and objectives will contribute to the national commitment to limit the impact of climate change and reduce energy consumption and greenhouse gas emissions. This includes support for measures aimed at reducing travel demand by integrating land use and transportation, facilitating an increased modal share of sustainable travel modes, encouraging passive solar design and energy efficient buildings, promoting greater use of renewable energy and energy conservation, re-use of existing building stock, promoting waste reduction and addressing increased flooding risks due to climate change.

It is a policy of Carlow County Council:

CCP 1: To recognise European and national objectives for climate adaptation and work with the EPA, the Southern Regional

Assembly and neighbouring planning authorities in implementing future Guidance for climate change proofing of landuse plan provisions as is flagged in the National Climate Change Adaptation Framework (DECLG, 2012).

CCP 2: To support EU and national legislation and strategies on climate change in its decision making, in order to contribute to a reduction and avoidance of human induced climate change and to assist in achieving the national targets set out under the Kyoto Protocol (as updated).

CCP 3: To support the National Climate Change Adaptation Framework 2012 (including any superseding document), the actions contained therein and any future local adaptation plan that relates to the plan area.

It is an objective of Carlow County Council:

CCO 1: To promote the integration of green infrastructure/networks (e.g. interconnected networks of green spaces /ecosystems) and other physical features on land into new development proposals in order to mitigate and adapt to climate change.

9.4.5 Waste Management

The Management of waste in Muine Bheag and Royal Oak is governed by the Southern Waste Management Plan 2015-2021. This plan sets out a framework for the management of waste within the Southern Region and follows the waste management hierarchy which promotes in order of priority the prevention, recycling and safe disposal of waste. The Council will continue to promote waste prevention and minimisation initiatives to target all aspects of waste in Muine Bheag and Royal Oak, focusing on both commercial and domestic waste producers. It is considered that raising the awareness of citizens and businesses with regard to their responsibility as generators is essential.



Waste Disposal

Refuse collection in Muine Bheag and Royal Oak is currently carried out by a number of private contractors using waste collection permits issued by Carlow County Council. The County's landfill is located approximately 3 miles north of Muine Bheag / Royal Oak at Powerstown, beside the M9 interchange at Junction 6.

The Council has provided bring banks for the collection of glass, aluminium cans and textiles at McGrath Hall on Station Road. In addition, the Civic Amenity Centre in Powerstown provides for a wide range of household recycling materials. The Council will continue to encourage recycling and the minimisation of waste through its environmental education programme and the Green-Schools programme.

Where large-scale development takes place land should be set aside for the duration of the construction period to facilitate the sorting and storing of waste inert material. The Council will permit the use of appropriate inert and non-hazardous wastes such as construction and demolition waste for landscaping activities. The Council will encourage the provision of recycling systems of an appropriate scale in all new developments and will investigate how best to achieve expansion to the network of public recycling facilities in the existing built-up area. Any residual waste material to be removed from sites must be carefully managed to ensure that any environmental damage is avoided and be transported and accommodated by authorised operators. The Council will require Waste Management Plans to be prepared for Construction and Demolition Projects of a particular scale in accordance with Best Practice Guidelines issued by the Department of Environment Heritage and Local Government, July 2006.

Litter Management

With regard to litter control, the Council adheres to the Litter Management Plan 2014 - 2017. The main objective of this plan is to prevent and control litter and it specifies the measures being undertaken to encourage public awareness of the litter problem, with particular emphasis on educational and information strategies aimed at young people. It also indicates the measures and arrangements that are to be undertaken to achieve the objectives of the plan.

Muine Bheag and Royal Oak are generally clean and well presented, which is a sign of good civic organisation and pride. While the Council plays a very important role in terms of both prevention and reduction of litter in the town, this can only be achieved by the co-operation of the local community, groups such as the Tidy Towns Group and Bagenalstown Improvement Group, the business community and the public in general.

It is a policy of Carlow County Council:

- WMP 1:** To support the minimisation of waste creation and to promote and encourage education and awareness on all issues associated with waste prevention, minimisation, reuse, recycling and recovery, at household, industry and community level.
- WMP 2:** To safeguard the environment by seeking to ensure that residual waste is disposed of appropriately.
- WMP 3:** To seek to ensure that Muine Bheag and Royal Oak are served by adequate recycling facilities in the form of kerbside collection, civic site and bring bank-recycling facilities and to adequately maintain existing recycling facilities.
- WMP 4:** To support the implementation of the Southern Waste Management Plan 2015-2021, Carlow County Council's Litter Management Plan 2014 - 2017, the National Waste Prevention Programme, the EPA's National Hazardous Waste Management Plan 2014-2020 and any superseding versions of these plans over the lifetime of this Local Area Plan.
- WMP 5:** To seek to manage and dispose of construction waste in a way that ensures the provisions of the Waste Management Acts and Southern Waste Management Plan 2015-2021. Construction Waste Management Plans will be implemented

where relevant to minimise waste and ensure correct handling and disposal of construction waste streams in accordance with the Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects, Department of the Environment, July 2006.

It is an objective of Carlow County Council:

WMO 1: To eliminate all unauthorised fly tipping and to regulate and control the disposal of all builders spoil and rubble.

WMO 2: To assess the feasibility of additional recycling, including composting facilities in the town or environs at a location(s) that will not adversely affect residential amenity or environmental quality.

WMO 3: To promote and facilitate communities to become involved in environmental awareness activities and community-based recycling initiatives or environmental management initiatives that will lead to local sustainable waste management practices.

9.4.6 Energy and Communications

All developments require adequate power, energy and telecommunications services, including electricity, gas supply, telephone services and broadband, which are provided in Muine Bheag / Royal Oak by a number of different service providers. The ability to deliver a secure and uninterrupted sustainable energy supply at a competitive cost is critical for Muine Bheag / Royal Oak to continue to attract inward investment and to provide a supportive environment for industry.

The plan aims to seek a balance between the need to maintain and develop energy and telecommunications infrastructure while having regard to amenities, protected areas and sensitive landscapes. Carlow County Council will continue to promote and implement energy efficiency and conservation in existing and future residential, commercial and industrial buildings within Muine Bheag and Royal Oak.

Renewable energy is increasingly seen as a means to address climate change challenges, reduce carbon dioxide emissions and increase national energy security. Ireland's need to support renewable energy stems from its EU commitments, namely the EU Directive 2009/29/EC on the Promotion of Renewable

Energy Sources. Carlow County Council recognises the importance of developing renewable energy resources in the interest of delivering on the National Climate Change Adaptation Framework.

The Planning and Development Regulations 2007 and 2008 provide some exemptions from planning permission for solar panel, heat pumps, wind turbines and wood pellet burners subject to certain conditions and limitations. However, the restrictions on exempted development as set out in Article 9 of the Planning and Development Regulations 2001 (as amended) also still apply. Where an individual wishes to install any class of micro-renewable technology that does not fall within the exemptions, they are required to apply for planning permission.

It is the policy of Carlow County Council:

ECP 1: To support the provision of adequate energy and communications infrastructure to service developments including gas, electricity, broadband, and telephone services. In particular, the Council supports the increased use of renewable energy and the aims of sustainable energy use and conservation in building design and construction.

It is an objective of Carlow County Council:

ECO 1: To facilitate the provision of an adequate telecommunications infrastructure within the plan area, including telephone and broadband services, to the requirements of the relevant service providers and in accordance with the principles of proper planning and sustainable development.

ECO 2: To facilitate the provision of an adequate supply of electricity and gas to developments in the plan area, to the requirements of the relevant service provider, and in accordance with the principles of proper planning and sustainable development.

ECO 3: To require new buildings to be sustainable in their siting, orientation, design and construction. Passive solar design techniques, high energy efficiency, low impact construction methods and the use of local building materials shall be encouraged to ensure that new developments minimise the environmental impacts and long term costs.

- ECO 4:** To promote and facilitate the development of renewable sources of energy within the plan area and encourage the integration of micro-renewable energy sources into the design and construction of new developments, as appropriate.
- ECO 5:** To seek to provide more public wi-fi zones in Muine Bheag / Royal Oak.
- ECO 6:** To liaise with the ESB to investigate and encourage where possible the ducting and underground routing of overhead powerlines in Muine Bheag and Royal Oak in tandem with other work programmes, such as road resurfacing and footpath construction works.

9.4.7 Noise / Air / Light Pollution

The importance of a clean environment for the economic and social life of Muine Bheag / Royal Oak is recognised. In this regard, continuous effective monitoring and enforcement in relation to pollution control measures is imperative and will continue over the period of this plan.

Noise

Noise pollution has become an increasingly important issue as it affects the quality of life and also has health impacts. Carlow County Council will seek to control noise and/or vibration levels at site boundaries or within adjacent sensitive areas, especially residential areas, by measures such as layout, design and/or attenuation mechanisms. The cost of such measures shall be borne by the developer.

The Council will require the submission of Noise Impact Assessments where it is proposed to introduce noise creating uses in proximity to noise sensitive uses, such as residential areas, and if permission is being granted may impose conditions mitigating impact. Similarly, where noise sensitive uses are proposed within proximity to a noise source, such as busy roads, rail lines, etc., proposals shall include noise and/or vibration attenuation measures in any planning application.

Air

Air pollution can affect the health and well-being of sensitive population groups and ecosystems. The most sensitive areas in relation to air quality are built-up urban areas and major transport developments. Carlow County Council supports the Polluter Pays Principle and will have regard to the EU Framework Directive on Air Quality Assessment relating to air quality standards.

Light

Carlow County Council will consider potential impacts arising from light pollution relating to new development and the intensification or alteration of existing developments. The control of light pollution is appropriate in the interests of nature conservation, residential amenity and energy efficiency.

It is the policy of Carlow County Council:

- P 1:** To promote the preservation of best ambient air quality compatible with sustainable development in accordance with the EU Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive (2008/50/EC) and ensure that all air emissions associated with new developments are within Environmental Quality Standards as set out in the Air Quality Standards Regulations 2011 (SI No. 180 of 2011) (or any updated/superseding documents).
- P 2:** To seek to preserve and maintain good air and noise quality standards in Muine Bheag / Royal Oak in accordance with best practice and relevant legislation.
- P 3:** To promote the preservation of best ambient air quality compatible with sustainable development.
- P 4:** To seek the control of lighting of development in particular sensitive locations.
- P 5:** To ensure that adequate soil protection measures are undertaken where appropriate. Appropriate investigations shall be carried out into the nature of any soil and groundwater contamination and the risks associated with site development works.

It is an objective of Carlow County Council:

- PO 1:** To assess proposals for development in terms of, inter alia, potential impact on existing adjacent developments, existing land uses and/or the surrounding landscape. Where proposed developments

would be likely to have a significant adverse effect on the amenities of the area through pollution by noise, fumes, odours, dust, grit or vibration, or cause pollution of air, water and/or soil, the Council shall ensure the introduction of mitigation measures in order to eliminate adverse environmental impacts or reduce them to an acceptable operating level.

PO 2: To ensure the implementation of the specific guidance on radon prevention measures for new homes as contained within the existing Building Regulations (including any updated/superseding regulations that may be published within the lifetime of this Plan).

CHAPTER 10 BUILT AND NATURAL HERITAGE

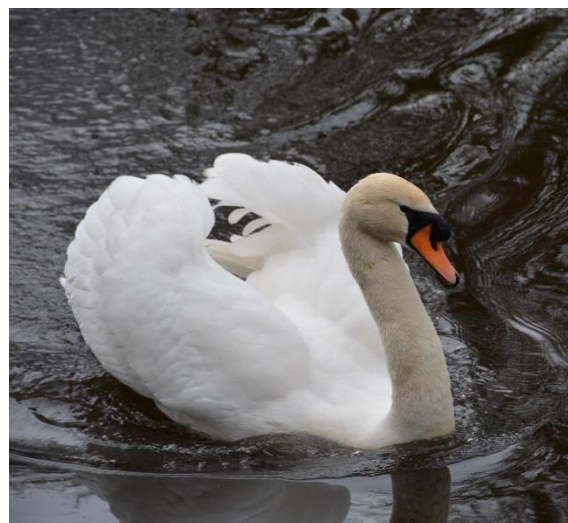
10.1 Introduction

The small market town of Muine Bheag was founded in the 18th Century by Walter Bagenal of Dunleckney Manor. In an attempt to establish a profitable trading centre in his estate, Bagenal laid out the town with a characteristic grid pattern, intended to be of considerable architectural pretensions and to bear the name 'Versailles'. Bagenal's aspirations were never fully realised and he later settled for the name Bagenalstown, later re-named Muine Bheag.

The historical development of the town has left a significant built heritage in Muine Bheag / Royal Oak, characterised by historic street patterns and subdivisions, building groups, buildings and various features of architectural and historical significance. The quality of the built environment is a key element in ensuring that Muine Bheag / Royal Oak and its environs is an attractive place in which to live, work, recreate and visit. Existing buildings and the future built environment are a key component of the towns' heritage.

The plan area adjoins the River Barrow a designated Special Area of Conservation (Refer section 10.5.1). It is a requirement under the EU Habitats and Birds Directives to protect EU Designated Sites. Muine Bheag / Royal Oak has a high amenity and attractive green setting, with areas of important natural heritage encompassing wetlands, grassed areas, wildlife corridors and a wildlife sanctuary.

The environment is a valuable but vulnerable resource. The quality and integrity of the natural and built environment is retained when it is managed, protected and where necessary, enhanced. Policies and objectives are outlined to seek to balance the need to facilitate sustainable development while protecting the environment. The plan also promotes the development of a green infrastructure network for Muine Bheag / Royal Oak and its environs where walking, cycling, recreation and nature/ biodiversity are integrated and can complement the future sustainable development of the area.



10.2 Challenges

The key challenge in terms of the built heritage in Muine Bheag / Royal Oak is to balance the archaeological and architectural heritage of the town with its future growth. An important mechanism to achieve this is to formulate appropriate objectives for the protection, enhancement and management of the built heritage, while encouraging regeneration and change. It is equally important to increase public awareness of the importance of conserving important architectural features and streetscapes.

The tourism industry which is expected to grow significantly in this town into the future, relies largely on the attractiveness of the built heritage of a town. Unlocking the tourism potential of the historic town centre is a key challenge of this Local Area Plan. Enlivening streets and public spaces with markets and entertainment, greening and creating pedestrian friendly routes will be required to regenerate Muine Bheag / Royal Oak and create an attractive and active centre. It is also important that people are encouraged to live above shops and businesses in the town core. The challenge for the future is to protect the unique character of Muine Bheag as a historic town with sensitive infill projects and complementary buildings which mutually respect their surroundings.

Facilitating development and maintaining the integrity of the natural environment, is also a key challenge. Enhancing and improving

public open space and providing opportunities for passive and active recreation are required. These can be achieved by:

- Re-evaluating the existing public open space hierarchy for the future.
- Recognising the potential of existing open spaces for improvement and the creation of linkages between areas of open space.
- Balancing measures to support and enhance biodiversity against recreational needs.
- Promoting of physical activity and healthy lifestyles.
- Providing and maintaining play-spaces and sports facilities at neighbourhood level.

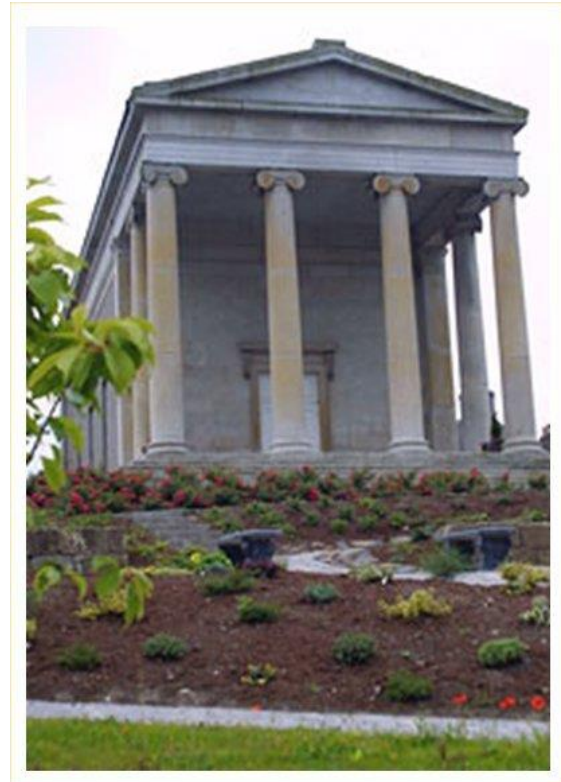
10.3 Strategic Approach

Carlow County Council will take the following approach to protecting and enhancing Muine Bheag and Royal Oak's built and natural heritage:

- Emphasising the regeneration of the historic town core to its former cultural and historic importance so as to leverage economic and social benefits for the town.
- Promoting Muine Bheag / Royal Oak's Industrial Heritage.
- Protecting and embracing the built heritage as a finite resource.
- Promoting a reasonable balance between conservation measures and development objectives in the interest of promoting the orderly development of the town.
- Protecting national important sites including the Special Area of Conservation (River Barrow).
- Promote habitat enhancement as an integral part of any development.
- Creating sustainable connectivity between green areas.
- Providing for the recreational and amenity needs of the community.

10.4 Architectural Heritage

Architectural heritage is an intrinsic part of our heritage and refers to all manmade features in the environment including buildings and other structures such as bridges, wells, walls and street furniture. The structures which form the architectural heritage of the town play an integral part in the life of the town.



10.4.1 Record of Protected Structures

The current Carlow County Development Plan incorporates the Record of Protected Structures, which protects structures which are considered to be of special architectural, historical, archaeological, artistic, cultural, scientific, social, technical interest or value. A statutory framework for protecting, managing and enhancing historic towns is set out in the Planning and Development Act 2000 (as amended). The inclusion of a structure on the RPS does not preclude appropriate use or development.

There are a number of protected structures located within Muine Bheag / Royal Oak plan area, examples include the Courthouse building, St. Andrew's Church and St. Mary's Church of Ireland, the Railway Station, the Garda Station on Kilree Street and the Post Office on Main Street. Planning permission must be obtained before significant works

which would materially alter the character of a protected structure can be carried out. A full list of the Record of Protected Structures within the plan area is contained in Table 11 and Map 13 and 14 of this plan.

Structures of local interest in Muine Bheag / Royal Oak are buildings of significance that retain traditional features and that contribute to local distinctiveness while sharing forms and styles that are unique to Ireland. Carlow County Council recognises the importance of structures of local interest and the important contribution to the heritage attributes of the town.

10.4.2 Archaeological Heritage

The archaeological heritage of an area includes structures, constructions, groups of buildings, developed sites, moveable objects, monuments of other kind as well as their context, whether situated on land or under water.

There are thirteen designated areas of archaeological potential within Muine Bheag's zoning boundary recorded on the OPW's Sites and Monuments Record.

- CW016-039 in Moneybeg – An Enclosure site
- CW016-040 in Kilree – An Enclosure site
- CW016-104 in Kilree – A Trackway Site
- CW016-108 in Moneybeg – An Enclosure
- CW016-109 in Moneybeg – An Enclosure
- CW016-023 in Dunleckney – A Mound
- CW016-112 in Dunleckney – A Ring Ditch
- CW016-118 in Moneybeg – A Field System (now occupied by housing)
- CW016-119 in Moneybeg – A Field System (now occupied by housing)
- CW016-126 in Dunleckney – A Ring Ditch
- CW016-131 in Kilree – Excavation / Miscellaneous
- CW016-040002 in Kilree – A Quarry
- CW016-040001 in Kilree – An Enclosure (a duplicate of CW016-040)

It is a policy of Carlow County Council:

HR 1: To contribute, as appropriate, towards the protection and sympathetic enhancement of archaeological heritage, in particular by implementing the relevant provisions of the Planning and Development Act 2000 (as amended) and the National Monuments Act, 1930 (as amended).

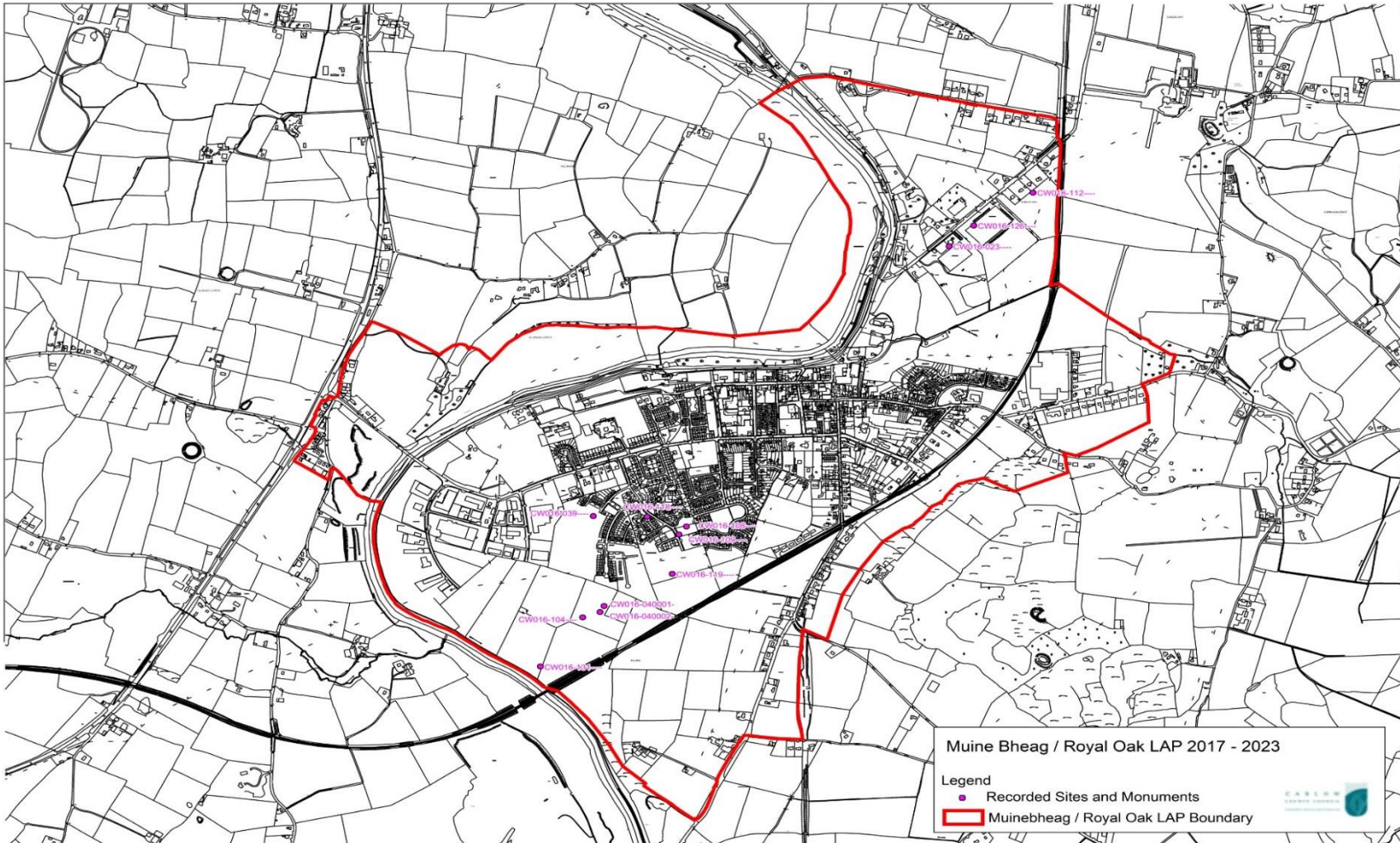
HR 2: To contribute, as appropriate, towards the protection of archaeological sites and monuments and their settings, archaeological objects and underwater archaeological sites that are listed in the Record of Monuments and Places, in the ownership/guardianship of the State, or that are subject of Preservation Orders or have been registered in the Register of Historic Monuments. Contribute, as appropriate, towards the protection and preservation of archaeological sites, which have been identified subsequent to the publication of the Record of Monuments and Places.

HR 3: To ensure the implementation of the legislative, statutory and policy provisions relevant to the conservation of the built heritage including the following (and any updated/superseding documents):

- Legislative provisions in the Planning and Development Act 2000 (as amended) and the National Monuments Act 1930 (as amended).
- Statutory provisions in the Carlow County Development Plan, including the Record of Protected Structures.
- Policy guidance in Government Policy on Architecture 2009-2015, the Architectural Heritage Protection Guidelines 2004/2011, the Archaeology and Development: Guidelines for Good Practice for Developers.

HR 4: To acknowledge and promote awareness of the origins, historical development and cultural heritage of the town and to generally support high quality developments that relate to local heritage and to ensure that new development respects and is responsive to same.

HR 5: To require an appropriate archaeological assessment to be carried out by licenced archaeologist in respect of any proposed development likely to have an impact on a recorded monument or its setting and to consult with the National Monuments Service of the Department of Arts Heritage, Regional, Rural and Gaeltacht Affairs in relation to proposed developments adjoining archaeological sites.



Map 12 : Recorded Monuments in Muine Bheag / Royal Oak

10.4.3 Cultural Heritage

The cultural heritage of an area is a general term that includes cultural services, such as public buildings (e.g. libraries and museums) and also encompasses a range of characteristics that help to define an area and its population, including local customs and traditions, language and literature. It is important to acknowledge the unique cultural identity that a town like Muine Bheag / Royal Oak displays and ensure that new development supports and complements same.

Bagenalstown is one of only two planned towns in Ireland, its milling heritage with the Dunleckney Maltings site and Rudkins Mill, the wealth of protected buildings such as the Railway Station and the Courthouse are attributes that can be developed further into the future e.g. a town museum to showcase this town's attractions and historic buildings.

Recent research has shown that cultural tourism constitutes one of the central planks of the Irish tourism industry, and it is also one of the fastest growing areas of tourism internationally. Research also shows that historic towns constitute a significant part of the attraction for culture and heritage seekers. The unique characteristics of towns such as Muine Bheag, the stories they tell, the people that live in them and the opportunities to engage with aspects of traditional culture, generate a strong appeal to visitors and this may be a key issue to be investigated further in order to nourish the town into the future.

It is a policy of Carlow County Council:

HR 6: To support and promote the development of cultural facilities in the town.

10.4.4 Industrial Heritage

Muine Bheag was historically an affluent town with a tradition of milling, and having its own salt works and gasworks during the 19th Century and early 20th Century. Following the decline of canal based transport, due to the rail line through the town, the milling industry was replaced by the growth of an agricultural based engineering industry.

¹ Geodiversity (and Geological Heritage) refers to the variety of rocks, minerals, natural processes, landforms, fossils and soils that underlie and determine the character of our landscape and



In recent years a revival of the maltings industry has occurred with both the current and ongoing reuse and redevelopment of the Dunleckney Maltings buildings by Carlow Brewing Company and Holloden House at Royal Oak by Walsh's Whiskey Distillery.

It is a policy of Carlow County Council:

HR 7: To promote awareness of Muine Bheag / Royal Oak's Industrial Heritage and Biodiversity.

10.4.5 Geological Heritage¹

The geology of County Carlow has influenced the landscapes, soils, habitats, economic activities such as quarrying and features of local cultural interest such as stonewalls, limekilns etc. The Geological Survey of Ireland, in partnership with Carlow County Council, has developed a list of County Geological Sites (CGS), as part of the Irish Geological Heritage Programme. These are sites of local geological and geomorphological interest, or sites which contain a feature of local geological and geomorphological interest. Some of these sites, which are of national significance, may in the future, be proposed by the Geological Survey of Ireland and the National Parks and Wildlife Service, as geological Natural Heritage Areas (NHA's). The programme of CGS documentation is an on-going, dynamic process as additional sites may be added through new exposures such as quarrying and road cuttings and through notifications from local community knowledge.

environment. Geology is the science that comprises the study of the Earth, the rocks of which it is composed and the processes by which it evolves. It is in effect, the story of our planet and every rock holds clues to understanding its evolution

It is a policy of Carlow County Council:

HR 8: To seek to protect and maintain the character, integrity and conservation value of features or areas of geological interest that may be proposed by the DoAHG and / or the GSI within the plan area and to seek the promotion of the importance of Country Geological Sites in tourist material / publications as appropriate.

10.5 Natural Heritage²

Natural heritage includes the variety of life we see around us every day and also includes the landscape and its geological foundation. The variety of life is often referred to as biological diversity or biodiversity. Biodiversity is a word used to describe the natural world that includes people, animals, plants, microbes as well as the places they live which are called habitats. Natural heritage includes a wide range of natural features and processes that make an essential contribution to the environmental quality, ecological biodiversity, landscape character, visual amenity, recreational activities, public health and investment potential of the town and its environs.

10.5.1 European Directives, Natura 2000 Network and Biodiversity

At European level, the Habitats Directive (92/43/EEC) and the Birds Directive (2009/147/EC) mandate the identification and protection of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), which together create a network of protected wildlife areas, known as the Natura 2000 network, across the European Union. The designation of these sites forms part of a range of measures aimed at conserving important or threatened habitats and species. There is a legal requirement that all land use plans comply with the Birds and Habitats Directives, in particular through the preparation of a Habitats Directive Assessment. The Strategic Environmental Assessment Directive (2001/42/EC) also requires that all land-use plans legally comply with the Strategic Environmental Assessment Directive, including the preparation of a Strategic Environmental Assessment, where necessary. Further details

² The Heritage Act (1995) defines natural heritage as including flora, fauna, wildlife habitats, landscapes, seascapes, wrecks, geology, inland waterways, heritage gardens and parks.

^[1] Including Annex I habitats, Annex II species and their habitats and Annex IV species and their breeding sites and resting places (wherever they occur).

regarding the Habitats Directive Assessment and the Strategic Environmental Assessment are available as Appendices to this plan. Muine Bheag has one Special Area of Conservation (SAC) that traverses the plan area, namely the River Barrow.

The Water Framework Directive Register of Protected Areas as required under the Directive also contains an inventory of protected area sites representing area categories to include areas designated for the protection of habitat and species.



It is a policy of Carlow County Council:

HR 9: To contribute, as appropriate, towards the protection of designated ecological sites including candidate Special Areas of Conservation (cSACs) and Special Protection Areas (SPAs); Wildlife Sites (including proposed Natural Heritage Areas); and Flora Protection Order sites.

HR 10: To contribute towards compliance with relevant EU Environmental Directives and applicable National Legislation, Policies, Plans and Guidelines, including the following and any updated/superseding documents:

- EU Directives, including the Habitats Directive (92/43/EEC, as amended)^[1], the Birds Directive (2009/147/EC)^[2], the Environmental Liability Directive (2004/35/EC)^[3], the Environmental Impact Assessment Directive (85/337/EEC, as amended), the Water Framework Directive (2000/60/EC) and the Strategic Environmental Assessment Directive (2001/42/EC).
- National legislation, including the Wildlife Act 1976^[4], the European Communities (Environmental Impact Assessment) Regulations 1989 (SI No. 349 of 1989) (as

^[2] Including Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur).

^[3] Including protected species and natural habitats.

^[4] Including species of flora and fauna and their key habitats.

amended), the Wildlife (Amendment) Act 2000, the European Union (Water Policy) Regulations 2003 (as amended), the Planning and Development Act 2000 (as amended), the European Communities (Birds and Natural Habitats) Regulations 2011 (SI No. 477 of 2011) and the European Communities (Environmental Liability) Regulations 2008^[5].

- National policy guidelines (including any clarifying Circulars or superseding versions of same), including the Landscape and Landscape Assessment Draft Guidelines 2000, the Environmental Impact Assessment Sub-Threshold Development Guidelines 2003, Strategic Environmental Assessment Guidelines 2004 and the Appropriate Assessment Guidance 2010.
- Catchment and water resource management Plans, including the relevant River Basin Management Plan.
- Biodiversity Plans and guidelines, including Actions for Biodiversity 2011-2016: Ireland's 2nd National Biodiversity Plan (including any superseding version of same).
- Freshwater Pearl Mussel Regulations (S.I. 296 of 2009) (including any associated designated areas or management plans).
- Ireland's Environment 2014 (EPA, 2014, including any superseding versions of same), and to make provision where appropriate to address the report's goals and challenges.

HR 11: That all projects and plans arising from this plan³ (including any associated improvement works or associated infrastructure) will be screened for the need to undertake Appropriate Assessment under Article 6 of the Habitats Directive. A plan or project will only be authorised after the competent authority has ascertained, based on scientific evidence, Screening for Appropriate Assessment, and a Stage 2 Appropriate Assessment where necessary, that:

(a) The Plan or project will not give rise to significant adverse direct, indirect or secondary effects on the integrity of any European site (either individually or in combination with other plans or projects); or
(b) The Plan or project will have significant adverse effects on the integrity of any European site (that does not host a priority natural habitat type/and or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura

^[5] Including protected species and natural habitats.

³ Such projects include but are not limited to those relating to: agriculture; amenity and recreation; contaminated sites; electricity transmission; flood alleviation and prevention; forestry; mineral extraction; renewable energy projects; roads; telecommunications; tourism; wastewater and discharges; and water supply and abstraction.

^[6] Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:

2000; or ©The Plan or project will have a significant adverse effect on the integrity of any European site (that hosts a natural habitat type and/or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons for overriding public interest, restricted to reasons of human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000.

HR 12: (a) Not to permit projects giving rise to significant cumulative, direct, indirect or secondary impacts on Natura 2000 sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other on the basis of this plan (either individually or in combination with other plans or projects^[6]).

(b) To require applications for development within the constrained land use zoning objective for the Natura 2000 site (Map 15) to undergo Appropriate Assessment and demonstrate that the proposal will not give rise to any effect on the Natura 2000 site in view of its qualification features and conservation objectives.

HR 13: To facilitate the conservation, protection and enhancement of the River Barrow including the adjacent wetlands and associated habitats and to ensure that development does not significantly adversely affect conservation values.

HR 14: To seek the submission of an Ecological Impact Assessment for all development which may have a significant impact on the river and riparian habitats. This assessment should where appropriate suggest a minimum buffer of undisturbed vegetation to be retained to mitigate against pollution risks, reduce flooding potential, maintain habitats and provide an ecological corridor. The buffer zone shall, where possible be maintained free of development and hard surfaces. The assessment shall address protected species i.e. bats, otters including the

a) no alternative solution available,

b) imperative reasons of overriding public interest for the project to proceed; and

c) Adequate compensatory measures in place.

requirement for derogation licences together with the cumulative impact of the proposed development.

10.5.2 European and National Designated Protected Species

Certain plant, animal and bird species are also protected by law. This protection applies wherever the plant, animal or bird species are found and is not confined to sites designated by law and their habitats. This includes plant species listed in the Flora Protection Order 1999 and animals and birds listed in the Wildlife Act 1976 and subsequent statutory instruments, those listed in Annex IV of the Habitats Directive and those listed in Annex I of the Birds Directive.

It is a policy of Carlow County Council:

HR 15: To ensure that development does not have a significant adverse impact on plant species, animals and birds listed in the Flora Protection Order, Wildlife Act 1976 as amended, those listed in Annex IV of the Habitats Directive and those listed in Annex I of the Birds Directive.

10.5.3 Green Infrastructure

Green infrastructure can be defined as networks of green areas that provide multiple environmental, social, educational and economic benefits to society and can include open spaces, woodlands, parks, farmland and private gardens. The environmental benefits of identifying a green infrastructure network cannot be underestimated as the protection of natural features like flood plains, wetlands, woodlands and hedgerows provide far-reaching benefits, e.g. in climate change adaptation. Developing a green infrastructure approach can assist with the loss of biodiversity while enhancing an environment in which we live and thereby creating a high quality environment. Comhar Sustainable Development Council publication (2010) 'Creating Green Infrastructure for Ireland: Enhancing Natural Capital for Human Wellbeing' sets out how a network of green spaces can be developed to benefit natural heritage and biodiversity as well as the greater economy and society. The provision of green infrastructure is an essential element in delivering a high quality of life for both existing and new communities. It can create a distinctive local built environment ('sense of

place') and improve the existing built environment.

In developing green infrastructure strategies there is an opportunity to create places that not only function sustainably but also are very attractive places to live and work and foster a strong sense of community. In this regard, the plan will focus on protecting, enhancing, creating and connecting green infrastructure resources and ensuring that development is planned and managed so that it does not result in undue damage to the surrounding environment and natural assets. Wildlife and natural ecological processes are more likely to be maintained in landscapes that comprise an interconnected system of habitats.



Green Infrastructure (GI) should as far as possible provide an integrated infrastructure for multi-functional uses i.e. wildlife, leisure and cultural experience and deliver environmental services such as sustainable water drainage and flood protection that operates at all spatial scales from the urban neighbourhood to the open countryside. In urban areas such as Muine Bheag / Royal Oak, green infrastructure is about putting the environment at the centre of the planning process and producing a network of spaces which benefit both people and wildlife. The spatial concepts around which the green infrastructure and landscape strategy are as follows:

- The open space network within the plan lands is designed in a series of interconnected zones to manage the natural character and resources of the area and to provide for the needs of biodiversity and the new community.

- A linear park along the River Barrow to provide passive and active walks and cycle routes along this man made habitat.
- Pocket parks in all new residential and mixed use developments to ensure all dwellings are within a short (100m) walk of usable open space.
- A well integrated network of green routes that promotes walking and cycling for everyday needs and recreation. These will be principally located along the River.
- A civic/public space within the town centre.

It is the policy of Carlow County Council:

HR 16: To encourage and facilitate, in consultation with relevant stakeholders, the development of green infrastructure that recognises the synergies that can be achieved with regard to the following:

- Provision of open space amenities
- Sustainable management of water
- Protection and management of biodiversity
- Protection of cultural heritage
- Protection of protected landscape sensitivities.

HR 17: To seek to contribute towards the protection and enhancement of biodiversity and ecological connectivity, including trees, hedgerows, rivers, streams, other landscape features and associated wildlife where these form part of the ecological network and/or may be considered as ecological corridors or stepping stones in the context of Article 10 of the Habitats Directive.

HR 18: To develop a linear park, along the river Barrow, linking to areas of open space and amenity. Where lands are in private ownership it shall be policy, in any development proposal, to secure public access along the waterway.

HP 19: To co-ordinate between open space, biodiversity and flood management, in progressing a green infrastructure network.

10.5.4 Trees, Hedgerows Woodlands and Non-Designated Habitats and Species

Trees and hedgerows constitute an important natural and historic resource, given their contribution to landscape quality, their ecological importance as wildlife habitats and historical significance as townland and field

boundaries. In urban settings trees and groups of trees can contribute significantly to the local landscape/ townscape and in the successful integration of new buildings into the landscape.

It is the policy of Carlow County Council:

HR 20: To promote the protection of trees, in particular native and broadleaf species, which are of conservation and / or amenity value. Development that requires the felling of mature trees of special interest will be discouraged.

HP 21: To promote the protection and preservation of existing hedgerows, where appropriate and encourage planting of native hedgerow species.

HP 22: To contribute towards the protection of non-designated habitats and species which are of local biodiversity significance as appropriate.

10.5.5 Invasive and Non-Native Species

Non-native species both animal and plants can represent a major threat to local, regional and global biodiversity. Terrestrial and aquatic habitats can be negatively affected, resulting in significant damage to conservation and economic interests such as agriculture, forestry and civil infrastructure. The Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 lists restricted non-native species and Regulation No.49 and No.50 specifically relate to non-native species. Development proposals must ensure that the presence or absence of invasive alien species has been addressed in accordance with the new European Regulations for the prevention and management of the introduction and spread of Invasive Alien Species (1st Jan 2015) and the EC (Birds and Habitats) Regulations 2011. Where invasive alien species are present on a development site an invasive alien species management plan will be required.

It is a policy of Carlow County Council:




HR 23: To support as appropriate the National Parks and Wildlife Service's efforts to seek to control the spread of non-native species on land and water and where appropriate seek the submission of an invasive species management plan.




10.6 Built and Natural Heritage Objectives

It is an objective of Carlow County Council:






- HO 1:** To safeguard and enhance all buildings of intrinsic heritage value within Muine Bheag / Royal Oak and Environs and to protect all existing Protected Structures, as set out in the Record of Protected Structures.
- HO 2:** To encourage the facilitation and active and appropriate reuse of vacant structures within the plan area.
- HO 3:** To promote the planting of tree species which are suited to the Barrow landscape as part of any public landscaping projects, or planting associated with developments.
- HO 4:** To promote educational and leisure activities such as bird watching, guided wildlife walks, photography, art etc. which increase awareness and appreciation of the Barrow River Valley but which will not result in significant disturbance to wildfowl and waders and will not have a negative impact on water quality, or on the condition of the protected habitats and species.
- HO 5:** To develop a network of green corridors throughout the town interconnecting open space and extending out to the wider hinterland.
- HO 6:** To support and facilitate in co-operation with relevant interested organisations including NPWS, the OPW, the Carlow Historical and Archaeological Society and Failte Ireland, the development of an appropriate cycle and defined pedestrian way linking the railway station, town centre, river and sites and facilities of interest in the town and its environs. Any proposed cycling or walking routes along the River will be subject to Appropriate Assessment in accordance with the Habitats Directive.


Table 11 : Extract Record of Protected Structures in Muine Bheag / Royal Oak Plan Area






RPS No.	NIAH	Address	Town land	Composition	Photo	Rating	Importance
CW46	10301620	Holloden, Royal Oak, Bagenalstown	Clorusk Lower	A mid-eighteenth century house of circa 1760, of three bays and two storeys over a basement with a pedimented breakfront, round-headed, granite doorcase with Doric pilasters and architraved head and sidelights. The first floor has a round-headed window also with flanking windows. The door is approached up a tall flight of steps. The rear elevation has tall, round-headed windows on the ground floor and a wide, formerly tripartite window in the centre of the first floor. The walls are built of rubble stone with lime rendering. The roof is hipped with natural slates and there are end stacks. The interior has a very interesting panelled hall with pilasters defining the panels. The house is now derelict and has been partially burnt. There is a low, quadrant, curtain wall which leads to an octagonal dovecote. The yard buildings are built of rubble stone, lime-rendered with granite doorcases and windows in half-moon shapes. These have been described as oriental in style and are most unusual.		R	A, Int, U, Art
CW53	10400615	Bagenalstown Train Station, Bagenalstown	Kilcarrig	Bagenalstown Railway Station is one of the finest station compositions in Ireland. Though small, it is richly detailed and ingenious in its classical, Italianate design. The main building has a five-bay, two-storey façade with a wide, three-bay, pedimented breakfront, tall segmental-headed windows on the ground floor, a balcony and smaller windows on the first floor. Flanking the breakfront are carriage arches with bold, monolithic piers and oculi on the first floor, a heavy cornice and a low-pitched, gable-ended roof with end stacks. Flanking the building are pedimented pavilions with round-headed windows. The station is built of limestone ashlar with granite dressings. The rear façade facing the platform has a single-storey, passenger shelter with monolithic, granite piers supporting a slated roof and flanking pavilions with pedimented breakfronts.		R	A, Art, S
CW62	10400605	Post Office, Main Street, Bagenalstown	Moneybeg	A three-bay, double-height post office designed in a classical style with a full-width pediment giving the effect of an engaged portico. It has wide, brick piers supporting an ionic, broken-base pediment with modillion blocks and a keystone for the round-headed, central arch. The windows and doorcase are set between the piers and the central window is framed by an architrave. On the left-hand side is a single-storey wing of three bays with painted and rendered walls and a parapet. The post office dates from circa 1915 and may be the work of Harold Leask.		R	A, Art

CW63	10400607	St. Mary's Church of Ireland, Church Street, Bagenalstown	Moneybeg	A large, cruciform-plan church with a three-stage West tower. The church is built of granite ashlar with tall, pointed windows with diamond panes, diagonal buttresses crowned with crenellated pepper-pots and a roof of natural slate supported by granite brackets. The tower also has diagonal buttresses, a pointed doorcase, pointed windows, English-style crenellations and pinnacles. The interior contains wall monuments. The church is in the First Fruits style and may date from as late as 1845. It is possible that it is by Thomas Cobden.		R	A, Int, S, Art
CW64	10400608	Courthouse, Bagenalstown	Moneybeg	The Court House is an ionic temple unusually placed so that it faces away from the street and overlooks the buildings lower down the hill. It is set on a raised base with an ionic portico and is modelled on an original classical design. At the rear is a single-storey building with painted rendering, round-headed windows with Georgian panes, a doorcase now square-headed but originally round-headed, a granite entablature with cornice and blocking course and a hipped roof hidden behind a parapet. On the streetline is a low, granite wall with mid-19 th century spiked railings.		R	A, H, S, Art
CW65	10400612	Rudkin's Mill, Bagenalstown	Moneybeg	A mill of two dates- the first of circa 1775 And the second of circa 1850. The original mill is built of coursed-rubble, local stone with granite coigns, huge blocks of granite for the lintels and has an L plan. The later addition is taller and is built of coursed-rubble limestone with granite coigns. The mill is now a shell.		R	A, S, Tch
CW260	10301619	Holloden Gate Lodge & Piers, Royal Oak, Bagenalstown	Clorusk Upper	The lodge dates from the late 18 th century and is a single-storey building with bow ends, lime-rendered walls and Bunclody slates on the roof. The tall gate-piers are of granite and panelled. The original balls are missing and have been replaced. The original gates have been removed and replaced with a farm gate. The iron-work on the quadrants survives. This stands on low, granite walls.		R	A
CW274	10400620	Minch Norton & Co Malt House, Dunleckney, Bagenalstown	Dunleckney	A malt house complex dating from 1868 comprising two parallel ranges of warehouses of many bays and largely of five storeys, built of coursed-rubble granite with granite ashlar coigns with brick dressings to the windows and slated roof		R	A, U, R, S






CW275	10400621	The Cottage, Dunleckney, Bagenalstown	Dunleckney	A very charming single-storey house built over a basement. The basement is hidden from the front façade. The walls are painted, lined and rendered with a three-bay, single-storey façade which is defined from the bow ends by making the façade into a very slight breakfront. The simple, square-headed doorcase has a rectangular, leaded light and pilasters. The tall windows have six-pane sashes and there is a single window in each of the bows. The hipped roof is in a single sweep covering the bow ends and has natural slates and a single stack placed on the back wall. There is a large return making the house a T plan. The house probably dates from circa 1830.		R	A, Int Art
CW276	10301630	The Glebe House, Dunleckney, Bagenalstown	Dunleckney	A three-bay, two-storey, gable-ended house over a basement, dating from circa 1740 and extensively remodelled circa 1840 with the addition of an attic and a gabled, advanced central bay and a porch with a pitched-roof. The walls are painted and rendered with raised coigns and the roof is pitched with end stacks. The ground floor at the rear has a long, cast-iron veranda dating from circa 1840. The house was renovated in recent years.		R	A, Int
CW277	10301631	Wykenham House, Green Road, Dunleckney, Bagenalstown	Dunleckney	A tudor-gothic revival house of circa 1840. The house has an asymmetrical plan and is basically of four bays and two storeys with rendered walls and granite features including mullioned windows, half-dormer windows on the first floor, granite coping and tall, 'tudor' stacks. There is a service wing on the right-hand side of the façade. The house is probably the work of Daniel Robertson.		R	A, Int Art
CW279	10400613	Gate lodge, Bagenalstown House, Bagenalstown	Dunleckney	A mid-19 th century, three-bay, single-storey gate lodge built of granite ashlar with a half-octagon bow in the centre containing three round-headed windows, granite brackets under the wide eaves and a low-pitched, hipped roof with a single stack at the rear. The lodge was extended to the south and the windows have uPVC glazing.		R	A
CW280	10400614	Bagenalstown House, Bagenalstown	Dunleckney	A house which appears to be of several dates originally of circa 1785. It has three-bay, two-storey façade with single-bay, full-height bows flanking a simple, round-headed doorcase. The windows in the bows are four panes wide and the impression given is that the bows were later additions. The walls have been cement rendered but retain the original, granite, raised coigns. The house is deep having five bays on the side elevations. The house was extended at the rear circa 1840 with coursed-rubble walls and granite dressings to windows and doors. The hipped roof is covered with natural slates. There are stable buildings to the east which appear to be of two dates. Some of the buildings are lime rendered while others are of coursed rubble. They make an attractive complex of buildings with original surface treatment and slated roofs.		R	A, Int



CW315		Kilcarrig Street, Bagenalstown	Kilcarrig	A five-bay, two-storey office building dating from circa 1950 built of red brick with a channelled, cement panel behind the square-headed doorcase and the flanking windows; channelled cement rendering below the ground-floor windows and wide, channelled, parallel raised coigns. The windows which now have uPVC glazing. The low-pitched, slated roof has wide eaves and brick stacks. There are three bays on the Kilcarrig Street elevation.		R	A
CW316		Public House, Kilree St / Stationhouse Road, Bagenalstown	Kilcarrig	A building with a chamfered corner and three bays on each façade though the main façade faces Railway Street. It has painted, rendered walls, replacement windows and a slated roof. The features of importance are the mid-19 th century, gothic-revival doorcases. Both doorcases have gothic mouldings with foliate capitals.		R	A
CW318		Glad Rags, Kilree St Bagenalstown	Kilcarrig	A two-bay, two-storey, early-19 th century house with painted rendering and a round-headed, architraved, granite doorcase. The shopfront and windows are modern renovations.		R	A
CW319		Sherry Fitzgerald Auctioneers, Kilree Street, Bagenalstown	Kilcarrig	A three-bay, two-storey house with painted rendering, a round-headed, architraved, granite doorcase which has been painted, a simple shopfront and an elliptical-headed carriage arch. The sash windows on the first floor have six panes in each sash.		R	A
CW320		Carlow Fencing, Eastern Side of Road, Bagenalstown	Kilcarrig	Carlow fencing on both sides of the road on the town side of the railway bridge.		R	A

CW322	10400611	St. Andrew Catholic Church, Bagenalstown	Kilcarrig	A T-plan, barn-church with a later tower and spire. The body of the church has lined and rendered walls and pointed windows with Y tracery. The roof is covered with natural slates and the transepts are half-hipped. The tower and spire, which are attributed to Thomas Cobden, dates from circa 1835 and is built of granite ashlar. It has three stages with corner buttresses, tall paired openings on the third stage, crenellations and four pinnacles on each corner. The spire is particularly slender. The West front of the church was rebuilt with granite ashlar at the same time as the tower was built. A chapel was added on the right-hand side of the façade and is decorated with gothic-revival detail all in cement. The church is fronted by a screen of iron railings and cemented piers. The interior has gothic-revival decoration with screens across the fronts of the transepts, three balconies, a gothic-revival, vaulted ceiling. The entrance courtyard contains a group of wall monuments.		R	A, Int S, Art
CW323	10400616	Passenger Shelter, Bagenalstown Train Station, Bagenalstown	Kilcarrig	A passenger shelter on the platform built of coursed-rubble limestone with a pitched, slated roof. The side is open to the platform and has paired piers of granite .		R	A, Art S
CW324	10400610	The Astor, Kilree Street, Bagenalstown	Kilcarrig	A cinema dating from circa 1950 with a façade stuck on to a large hall. The façade is treated with rough-cast rendering with a flat strip outlining the profile. It has a parapet which is stepped and has the word Astor over a wide window and entrance with a canopy.		L	A
CW325	10400617	Goods Shed, Bagenalstown Train Station, Bagenalstown	Kilcarrig	A gable-ended goods shed built of coursed-rubble limestone with a pitched, slated roof and three tall, square-headed openings to the side.		R	A
CW326	10400618	Footbridge, Bagenalstown Train Station, Bagenalstown	Kilcarrig	A footbridge dating from the late 19 th century built of iron with latticework parapet.		R	Tc
CW377		House, Borris Road, Bagenalstown	Moneybeg	A three-bay, single-storey, gable-ended house with a façade of large, coursed blocks of granite, a square-headed, chamfered doorcase and granite, mullioned windows. The house has been reroofed in recent years. The house dates from circa 1835.		R	A

CW378		Carlow Fencing, Western Side of Road, Bagenalstown	Moneybeg	Carlow fencing on both sides of the road on the town side of the railway bridge.		R	A
CW379		Lock Keepers House, Lock No. 10, Barrow Navigation, Bagenalstown	Moneybeg	A three-bay, two-storey, gable-ended house with rough-cast walls and end stacks. The house dates from circa 1790. The house is in ruins, has lost its roof and has the windows blocked up.		R	A, Tc
CW380		Shop Around & Roosters, Market Sq., Bagenalstown	Moneybeg	A five-bay, two-storey, mid-19 th century building with two shopfronts. It is built of coursed-rubble granite with occasional blocks of limestone, brick stacks and a slated roof. The windows have replacement uPVC glazing and one stack has been removed. Beside the building is an elliptical-headed, carriage arch		R	A
CW381		Bank Of Ireland, Market Sq., Bagenalstown	Moneybeg	The Bank of Ireland dates from circa 1850 and is strategically placed on the corner of Kilree Street and Main Street with the entrance on the corner facing Market Square. It is a classical building with a granite, ionic doorcase in antis with a four-bay, arcade of Doric pilasters on Kilree Street terminating in an advanced bay which is faced with channelled granite ashlar on the ground floor and has a round-headed window. The Main Street façade has a three bay arcade and is terminated in the manager's residence which is now in separate ownership. The first floor is painted and rendered and has a bracketed cornice over the window on the corner. The sash windows have six panes and occasionally two panes. The building is topped by a cornice and blocking course. The Kilree Street side is followed by a wall and handsome gate piers of channelled granite ashlar.		R	A
CW382		Garda Station, Kilree Street, Bagenalstown	Moneybeg	The Garda Station is a late-19 th century building which is on a larger scale than the other buildings in the street. It is gable ended with a façade of granite ashlar with two, tall, segmental-headed doorcases and three blank, segmental-headed arches. The walls between the openings are treated like pilasters and have impost blocks with circles cut out of them. The arches contain rendered walls with two windows each. All the windows on the façade have sashes and six panes in each sash. The eaves have granite brackets and the roof is covered with natural slates.		R	A

CW383		Healy Pharmacy, Main St, Bagenalstown	Moneybeg	A building which was possibly the bank manager's house and certainly has stylistic similarities with the bank. It has a three-bay, two-storey façade with a channelled, granite ground floor and channelled and rendered first floor. The round-headed, ground-floor windows are set in round-headed arches and there is a square-headed doorcase, a cornice and block coarsing.		R	A
CW384		Kavanaghs, Bagenalstown	Moneybeg	A three-bay, two-storey, early-19 th century, terraced house with granite pilasters on the ground floor, rough-cast rendering and a granite, round-headed doorcase, a plain, granite string-course on the first-floor sill level and a granite base to the wall. The windows have late-19 th century sashes. An extra doorcase has been inserted and a simple shopfront.		R	A
CW385		House, Regent St, Bagenalstown	Moneybeg	A very large, five-bay, three-storey, early-19 th century, gable-ended house with end stacks, rendered walls, a round-headed, granite doorcase with a keystone, sash windows with late-19 th century panes and fronted with a low wall and railings.		R	A
CW386		House, Regent St / Barrett St	Moneybeg	A three-bay, two-storey, early-19 th century house which has been restored. It has rough-cast walls, a U-plan with a tetrastyle, ionic porch in the centre. The porch has slender ionic columns carved in granite. The sash windows have small panes and the outer windows are tripartite in style. The low-pitched, hipped roof is sprocketed and has natural slates.		R	A
CW387		House, Regent Street, Bagenalstown	Moneybeg	A substantial, three-bay, three-storey house over a basement with cemented, lined walls, a wide, ionic doorcase with the moulding round the wide, leaded fanlight in the manner found in Waterford, sidelights and two-leaf door. The sash windows have late-19 th century panes and simple, limestone architraves. The roof is hipped and has a heavy cornice. The front of the house has a wall with a limestone coping. The house probably dates from circa 1840. Beside the house is a hall with a pedimented, entrance front of three bays. It has cemented walls, a tall, square-headed, limestone doorcase with tall, scroll brackets. The limestone pediment is supported under the base by pairs of brackets. This building probably dates from circa 1850.		R	A

CW388		House, Bagenalstown	Moneybeg	A four-bay, two-storey, gable-ended house dating from the early-19 th century with a granite, round-headed doorcase, smooth render on the ground floor and rough-cast above. It has single-storey wings with large, single, tripartite windows. All the windows have sashes with large panes of glass and the roof has natural slates. The house has a low wall in front. The main house and its wings only, as already described, are the focus of this protection. Additions to the building and other works within the curtilage of the protected structure, which do not impact on the protected element, can be made by agreement with the planning authority.		R	A
CW389	10400601	Eastwood House, Bagenalstown	Moneybeg	A house that appears to have been altered at some stage since the present façade cannot have been the original façade. At present the façade is of five bays and two storeys with a parapet in the centre flanked by gables. The walls are covered with creeper but the windows have single-pane sashes and date from the late 19 th century. There is a full-height bow on the return front. The house has a U plan. The interior retains features dating from the mid-18 th century including an open-well staircase and lugged architraves for the doors. The house was extended at the rear about 1840. There is an interesting stable complex with granite stables and gate piers dating from circa 1840.		R	A, Int Art
CW390	10400602	Lock No.10, Barrow Navigation, Bagenalstown	Moneybeg	A canal lock of circa 1790 with replacement gates of circa 1990.		R	A, Tc
CW391	10400603	Lifting Bridge, Lock No.10, Barrow Navigation, Bagenalstown	Moneybeg	A cast-iron, counter-weight, lifting bridge of circa 1879 which has recently been restored.		R	Tc
CW392	10400604	Lodge Mills, Bagenalstown	Moneybeg	A remarkable mill building dated 1824, of seven bays and seven storeys, and built of coursed-rubble limestone with occasional granite blocks and openings dressed with brick with a central carriage arch. The gable-ended roof is covered with natural slates and there are end stacks. There are lower buildings attached to the main warehouse. At the rear is a mill race.		R	A, Tc, Int Art

CW393	10400606	Church of Ireland School, Church Street, Bagenalstown	Moneybeg	A detached, three-bay, single-storey school in a stripped-down Greek classical style. It is a building of great architectural severity being built of large blocks of granite ashlar with a Doric doorcase, a low-pitched roof of natural slates with wide eaves and paired brackets. uPVC glazing has been inserted into the windows. The school has a T plan with further additions to the rear.		R	A, Art
CW394	10400609	O'Duinn, Kilree Street, Bagenalstown	Moneybeg	A house of four bays and two storeys set in a terrace. It stands out by having a tudor-revival style façade and being on a larger scale than the flanking houses. The walls are lined and rendered with cement, raised coigns, granite dressed windows with mullions and drip labels – the first-floor windows are in dormers which are the size of small gables and have granite coping. All the windows have late-19 th century sashes. The panelled door is set in a four-centred doorcase also with a drip-label. A timber shopfront was interted in the late 19 th century. The roof has natural slates and simple stacks. The house dates from circa 1840.		R	A, Art

Rating: R= Regional

L = Local

Importance: A = Architectural

Art = Artistic

I = Industrial

Tr = Transport

S = Social

E = Engineering

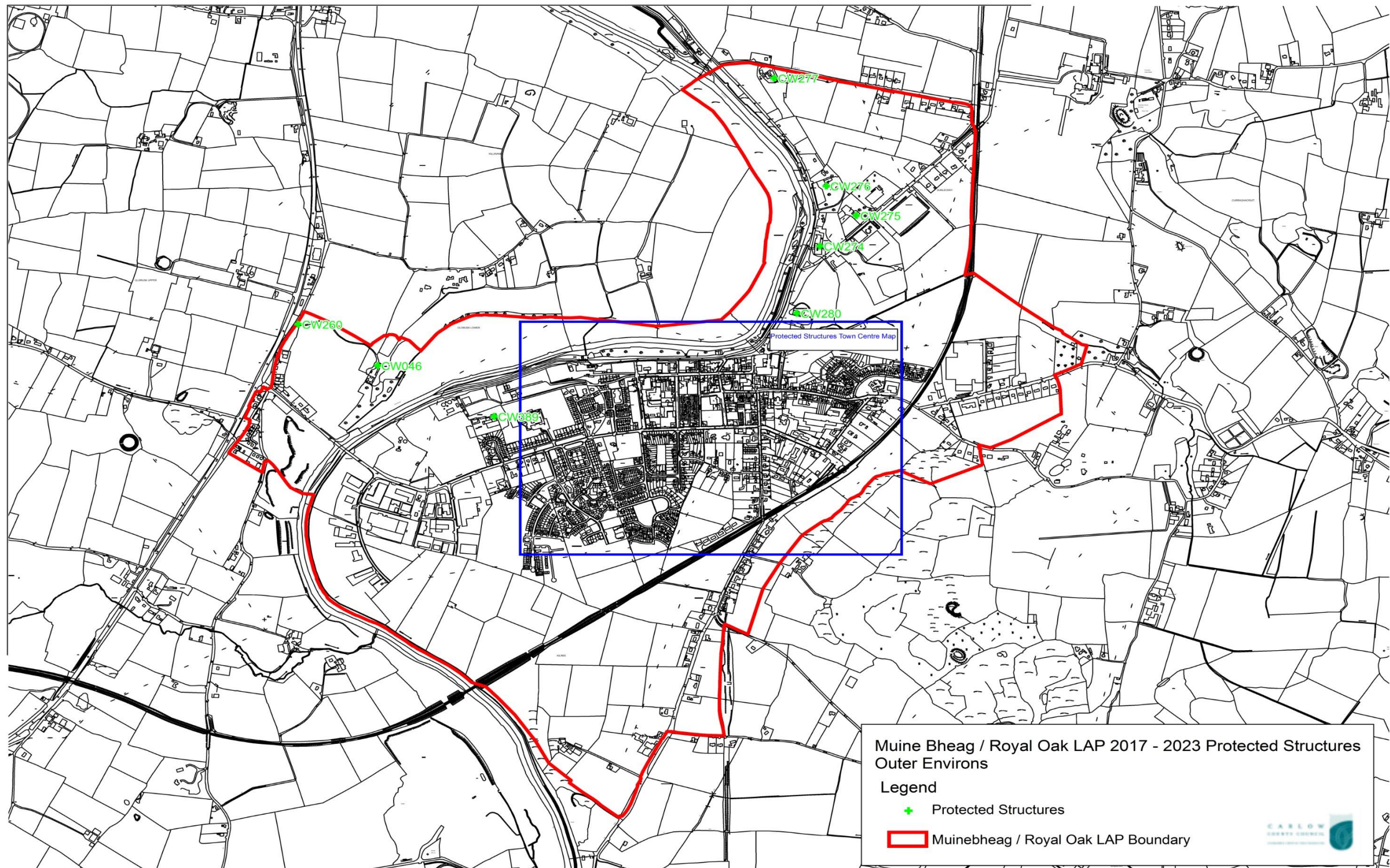
H = Historical

Tc = Technical

R = Rarity

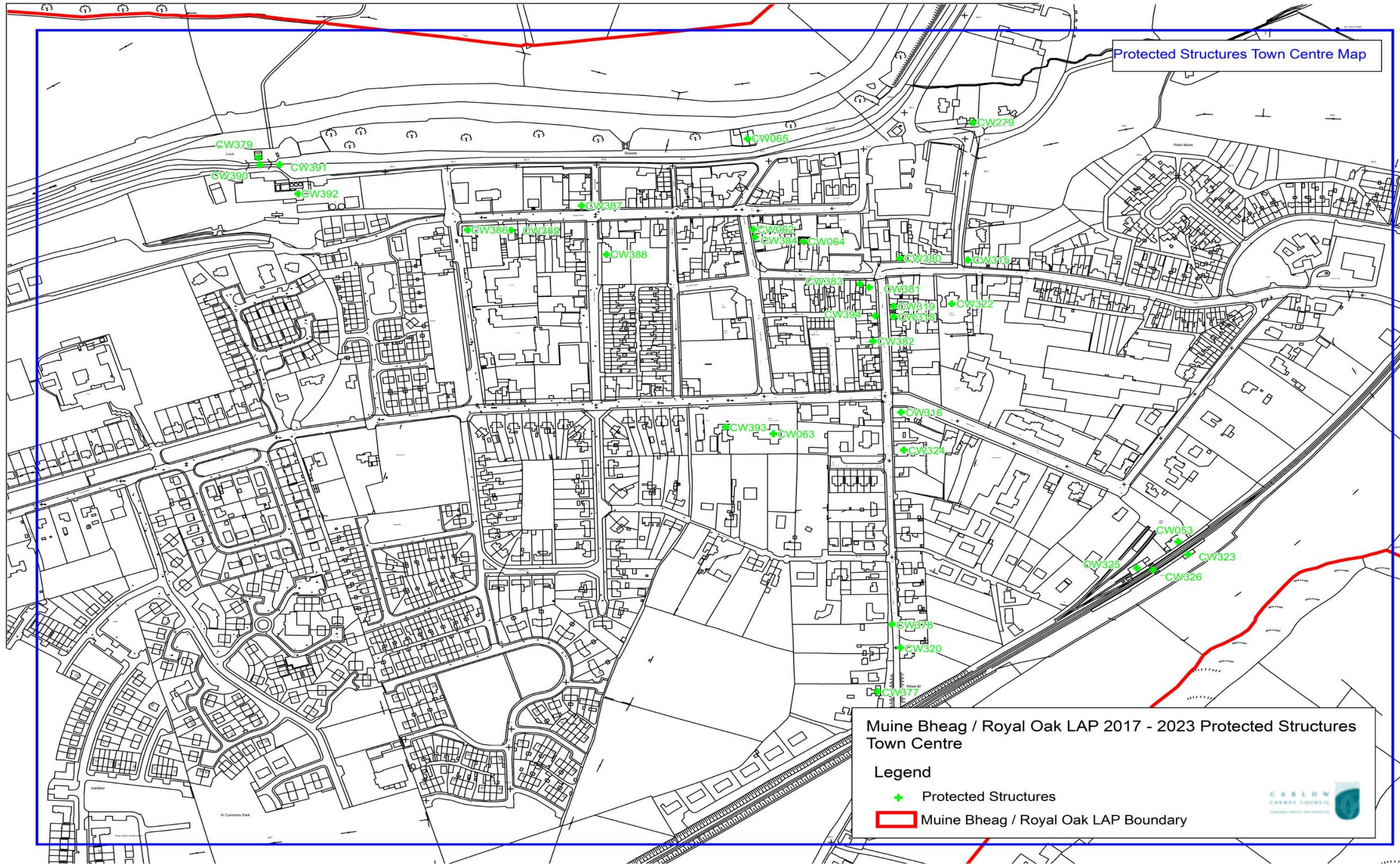
U = Unique

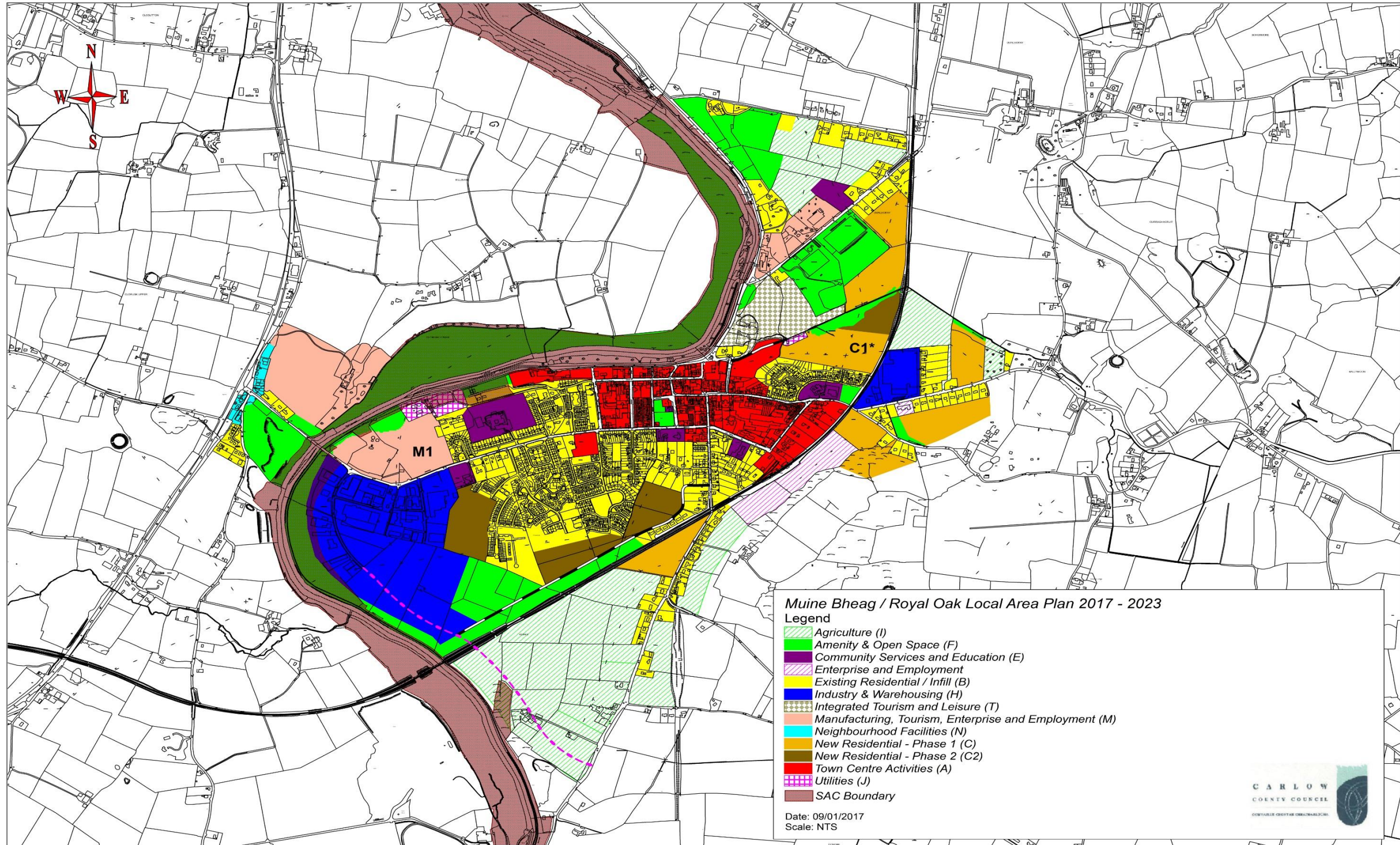
Sc = Scientific



Map 13: Muine Bheag Protected Structures in Outer Environs

Map 14: Muine Bheag Protected Structures in Town Centre





Map 15: Muine Bheag SAC and Constrained Land Use Zoning Objective (i.e Lands Zoned within SAC boundary)

CHAPTER 11 TOURISM

11.1 Introduction

Tourism makes an important contribution to the economy, with income derived from tourist activity being distributed across a wide range of economic sectors as well as being a catalyst for a considerable amount of commercial activity in the town.

Muine Bheag / Royal Oak has a significant number of tourist attractions focused around its picturesque location beside the River Barrow together with its historical development. As a result the town has a rich natural and built heritage. These characteristics and amenities act as valuable recreational and tourism assets for the town and greatly enhance its overall appeal.

In addition to natural and built heritage attributes other key heritage routes incorporate the town of Muine Bheag along their route and include the Barrow Way from Lowtown in Co. Kildare to St. Mullins in Co. Carlow (113km) and the Mount Leinster Heritage Drive.

Notable features in the hinterland include the Blackstairs Mountains and Mount Leinster together with a collection of attractive towns and villages. Various other attractions in the wider area include the ruined Ballymoon Castle, Ballyloughan Castle and Lorum Church and provide added appeal to tourist visitors to the area.

11.2 Challenges

In a local economy, Muine Bheag / Royal Oak has been competing with larger towns such as nearby Kilkenny and Carlow for tourism development and as a result tourism numbers and facilities are lacking in the town. In order for the town to aid tourism growth, Muine Bheag's role within the county and south east region needs to be enhanced by supporting the growth of the town and tourism facilities in order to achieve the necessary critical mass to compete for future tourism and economic growth.

Whilst Muine Bheag / Royal Oak suffered greatly in the economic downturn, Royal Oak has recently seen a major investment by Walsh's Whiskey who have commenced works on a world-class Distillery and Visitor Centre with the creation of 55 permanent jobs and 40



temporary jobs. Carlow Brewing Company are also investing in Muine Bheag with the regeneration of Dunleckney Maltings into a Visitors Centre and Maltings. The challenge is now to complement these significant financial investments with associated facilities in place for visitors to this town.

Promoting tourist attractions throughout the town and its environs is a challenge. Opportunities for working in collaboration with Carlow Tourism, to provide ways of clearly showing visitors what the town has to offer, whether it be by strategically located tourist information boards, the use of granite flagstones to identify areas of interest dotted throughout the town or a tourist centre, can be assessed.

11.3 Strategic Approach

In responding to the challenges facing Muine Bheag / Royal Oak, this local area plan will pursue the following approach:

- Improve the general attractiveness of Muine Bheag / Royal Oak for visitors and investors as a key part of increasing competitiveness and creating a vibrant, interesting and welcoming town for people to visit.
- Realise the potential of tourist attractions within the surrounding region and harnessing the potential of Muine Bheag / Royal Oak's built and natural heritage.
- Strengthen and consolidate the town core area to create a mixed-use, lively and vibrant town centre.

- Collaborate with both local groups and agencies in the town, along with Carlow Tourism to seek ways of how the town can develop and be promoted to its full potential as a tourist destination.



Fig 15: Carlow Mount Leinster Heritage Drive

11.4 Sustainable Tourism

The Council recognises the importance of sustainable tourism, as unmanaged tourism has potential to erode the quality of the tourism product and the environmental quality of the area.

Sustainable tourism must develop at a pace and scale which ensures that the towns' tourism assets are not diminished in the long term. The principal aims to achieve a sustainable tourism sector in Muine Bheag / Royal Oak are;

- To maximise the potential of tourism as a 'pillar of economic growth', which will contribute to balanced economic development and the tourism industry.
- To protect the town's tourism assets and capitalise on the distinct tourism

opportunities within the town and environs.

- To promote attractions that the town has to offer including natural, built and cultural heritage and scenic walkways along the River Barrow.
- To promote the development of premier tourist products and a vibrant town centre. Additional attractions and facilities will be promoted in order to encourage tourists to extend their stay and generate tourism generated expenditure in the town.
- To promote and support rapidly growing eco-tourism in the town and its hinterlands.
- To promote and improve tourism infrastructure in the town and its environs including tourist accommodation, amenities, access, signposting, car and bicycle facilities.

11.5 Natural Amenities

The River Barrow constitutes one of the most important natural amenities in the town and is one of the most significant industrial heritage sites in the country with bridges, corn mills, locks and lock-houses acting as a major tourism resource. Muine Bheag has Rudkins Mill, a lock and lock house contributing to the industrial heritage of the area.

The River Barrow has a wealth of attractions for the visitor in terms of walking / cycling along the banks, fishing, canoeing, bird watching etc.



11.6 Cultural Tourism

In terms of Cultural tourism, Muine Bheag / Royal Oak has a multitude of sites for the visitor. These would include the court house, the old mill and maltings buildings in the town, churches and the Mount Leinster Heritage Drive which passes through the town.

11.6.1 Indigenous Food, Drink and Crafts

Food Tourism is increasingly recognised as an important part of the cultural tourism market with tourists seeking authentic and unique experiences. Food tourism presents opportunities for the town in the future as a location for high quality indigenous food.

With the current growth in farmers and country markets, organic food production and healthy lifestyles, Muine Bheag has the potential to develop food tourism as a niche tourist product

through the participation in local food trails or the development of a Good Food Circle / Trail.



Similar signage to that used by Kilkenny in relation to their Craft Trail, could be used in relation to Muine Bheag's Good Food Trail

County Carlow was a major brewing centre in former times and Muine Bheag / Royal Oak is now fast gaining that title again in the county. Carlow Brewing Company is developing a visitors centre in Dunleckney Maltings and this is establishing Muine Bheag as the centre of the malt growing Barrow Valley.

Muine Bheag and its surrounding hinterland has an abundance of original, traditional, hand made crafts including woodturning, pottery, ceramics, ironworks and textiles, that have obvious appeal to the visitor. However, the town lacks a central venue for visitors to view and purchase local craft.



Example of compact signage used to present sites of interest

11.7 Recreational Amenities

McGrath Park is the main centre for recreational amenities in the town and these include GAA, soccer, rugby, pitch and putt, tennis and rounders. There is also an outdoor swimming pool in Dunleckney, but no indoor swimming pool or leisure centre, which would be of huge merit in attracting visitors to the town.

The River Barrow could be the basis for a plethora of leisure activities / outdoor pursuits, which would be beneficial to both locals and visitors to the town.

Walking along the Barrow is a major draw to the town and cycling facilities could be developed so as to offer visitors, especially those travelling to the town by train, an alternative mode of transport to access the town and its surroundings.

11.8 Tourism Policies and Objectives

It is the policy of the Council:

- TP 1:** To seek to promote the status of Muine Bheag / Royal Oak as a popular place to live and visit, by striving to preserve the attributes and assets of the town that make it unique and by endeavouring to enrich the inhabitant/visitor experience by contributing positively towards enhancing the overall amenity, ambience and aesthetic of the town.
- TP 2:** To promote and foster a growing sense of innovation and entrepreneurship in the tourism sector.
- TP 3:** To encourage and support increased co-ordination, cohesion and linkages between agencies such as Failte Ireland, Carlow Tourism, Waterways Ireland, the Southern Regional Assembly and Transport Infrastructure Ireland.
- TP 4:** To protect the natural resources upon which tourism is based through relevant policy in relation to resource protection, such as landscape character assessment, water quality and biodiversity.
- TP 5:** To encourage, support, facilitate and promote the development and expansion of eco-tourism, geo and green tourism, industrial tourism sites and similar developments in the town, subject to no negative impacts on the environment.

TP 6: To capitalise on potential tourist income by seeking to;

- Improve the public realm creating a café culture supporting craft and artisan / deli style retailing in the town core and in the quays area.

- Promote accommodation choices in the town.

- Promote and capitalise on the town's unique position on the River Barrow and in the environs of Mount Leinster for long distance walking routes.

TP7 To seek to manage any increase in visitor numbers to avoid significant effects including loss of habitat and disturbance, any projects are a suitable distance from the water's edge and legislation relating to habitats, species, connectivity and designated sites is complied with.

It is an objective of the Council:

TO 1: To provide where feasible, and support the provision of tourism infrastructure and services including, walking, cycling and water based infrastructure and short-term guest accommodation facilities throughout the settlement in appropriate locations.

TO 2: To encourage and assist the sustainable development of the tourism potential of Muine Bheag / Royal Oak in a manner that respects, builds on, protects and enhances the cultural, built and natural heritage of the town and the local amenities within the plan area.

TO 3: To work with bodies such as Transport Infrastructure Ireland, Failte Ireland and Carlow Tourism to improve signage both to the town itself from all approach routes, and throughout the town, so that all areas of interest are clearly indicated and accessible.

TO 4: To support the provision and augmentation, of sporting, boating, kayaking and angling facilities, pony trekking routes, adventure centres and associated ancillary uses in appropriate locations.

TO 5: To encourage the proportionate development of individual and multiple holiday home development schemes within existing adequately serviced sites/lands in the town.

TO 6: To create a synergy between Muine Bheag / Royal Oak and the surrounding tourist attractions.

CHAPTER 12 LANDUSE ZONING OBJECTIVES

12 IMPLEMENTATION

12.1 Land Use Zoning Objectives

A key method of implementing this plan is through the identification of land use zonings and objectives for specific sites in Muine Bheag / Royal Oak. These are shown on Map 16 attached, with terms and indicative land uses set out below. The purpose of land use zoning is to indicate to property owners, and to the general public, the types of development that Carlow County Council considers most appropriate in each zone. It also promotes redevelopment and renewal, which allows the developer to plan investment with some certainty. In the control of development, zoning seeks to limit competing and incompatible uses in order to promote greater sustainability and environmental quality. With due consideration to the extent and types of land use zoning objectives, the following factors have been taken into consideration:

- a) The present development area and recent trends in development;
- b) The amount of committed and uncommitted land within the existing development area;
- c) The accessibility, availability and location of land for development;
- d) The location and adequacy of existing social infrastructure (schools, community facilities, etc.);
- e) The character of the town with regard to the scale and pattern of development;
- f) The need to promote planning and sustainable development in accordance with national, regional and local policies and Government Guidelines;
- g) Physical features and amenities of the town;

- h) The present and future situation regarding the provision of essential physical infrastructure – especially water, wastewater and roads;
- i) The tourism potential of the town and the hinterland area and the need to facilitate the provision of an appropriate tourist offer.
- j) The following specific planning and land use objectives refer to land zonings as identified on Map 16 and Tables 12 and 13:

Ref	Use	Zoning Objective
A	Town Centre	<p>To provide for the development and improvement of appropriate town centre uses including retail, residential, commercial, office and civic use.</p> <p>The purpose of this zone is to protect and enhance the special character of Muine Bheag town centre and to provide for and improve retailing, residential, commercial, office, cultural and other uses appropriate to town centre. It is an objective of the Council to encourage the use of buildings and backlands and especially the full use of upper floors. It is also an objective of the Council that ground floors where appropriate will provide active frontages. Generally two and in exceptional circumstances three storey buildings will be preferred. Warehousing and other light industrial uses will generally not be encouraged within the town centre.</p> <p>Strategic Regeneration Sites and Redevelopment Areas have been identified in order to consolidate and intensify development in the town centre.</p> <p>Proposals for redevelopment of town centre lands within the flood zones along the Quay areas shall focus on practical measures to ensure that any redevelopment of at risk sites are conducted sensitively, apply the sequential approach as far as possible and undergo an appropriate Flood Risk Assessment in accordance with "The Planning System and Flood Risk Management Guidelines, 2009" and considerations outlined within Section 5 and Section 6.3 of the SFRA Report – Appendix 3 to minimize risk to building and occupants. Future CFRAM recommendation for risk management shall also be incorporated and may include flood warning and preparedness as well as potential emergency flood Plan.</p>
B	Existing Residential / Infill	<p>To protect and improve existing residential amenity; to provide for appropriate infill residential development; to provide for new and improved ancillary services.</p> <p>This zoning principally covers existing residential areas. The zoning provides for infill development within these existing residential areas. The primary aims of this zoning objective are to preserve and improve residential amenity and to provide for further infill residential development at a density that is considered suitable to the area and to the needs of the population. Such areas, particularly where bordering the commercial centre, will be protected from the pressure of development of higher order uses such as retail and offices.</p> <p>Royal Oak: Proposals for any further development within / proximate to the flood zones will require reappraisal of the culvert design under a detailed Flood Risk Assessment in accordance with "The Planning System and Flood Risk Management Guidelines, 2009" and in accordance with the guidance provided within Section 5 of the SFRA (Appendix 3 in particular Section 5.7 and 5.10).</p> <p>Any further development / re-development of existing residential properties to the north of The Parade within the flood zones must be subject to appropriately detailed FRA and the considerations stipulated within Section 5 – SFRA Report – Appendix 3 and in particular sections 5.7 and 5.10 of that report.</p>
C1	New Residential – Phase 1	<p>To provide for new residential development and other services incidental to residential development.</p> <p>While housing is the primary use in this zone, recreation, education, crèche / playschool, clinic/surgery uses, sheltered housing and small corner shops may also be considered, subject to the preservation of neighbouring residential amenity. Permission may also be granted for home based economic activity within this zone, subject to the preservation of residential amenity and traffic considerations.</p>

C1*		<p>Future planning applications on residential phase 1 sites 1,2,3, and 4 (Refer Map 6) must be subject to adequately detailed FRA at development management stage in accordance with the requirements stated under Section 5 of the SFRA Appendix 3.</p> <p>This zoning (to the north of Pairc Mhuire and to the east of land zoned town centre) shall be subject to an overall masterplan and shall comprise:</p> <ol style="list-style-type: none"> a) A design statement for the site describing how the development relates to the site and context including ecology, topography and features and illustrating how it contributes to the local character of the area. b) High quality development of mixed house types in a high quality landscaped setting. Existing trees and vegetation on site shall be retained and integrated into any new development. The area of open space along the stream shall form an integral part of the design of the scheme. c) A minimum of 2ha of the site shall be dedicated to low density residential development at a maximum of 4 units per acre (10 units per hectare). This may be delivered as serviced residential sites provided to people wishing to build a house to their own design and layout. In such circumstances full planning permission shall be sought by the developer / landowner for the site layout and development works and outline permission for the individual houses. A design brief shall also be submitted outlining principal design features for this element of the scheme. Each individual applicant may then submit their own design and apply for full permission/ approval on a serviced site. d) Connections and permeability (pedestrian and cycling facilities) to local centres, public transport, other facilities, adjoining land uses and back into the town centre e) Access arrangements through the adjoining town centre lands.
C2	New Residential – Phase 2	<p>To provide lands for future residential development and other services incidental to residential development in line with future national and regional targets over the next plan period or pending review of same.</p> <p>Phase 2 lands will not in any way infer a prior commitment on the part of the Council regarding future zoning under any future Local Area Plan. Such a decision will be considered within the framework of national and regional population targets applicable at that time and the proper planning and sustainable development of the area.</p>
E	Community Services & Educational	<p>To provide for community, educational facilities and institutional Uses.</p> <p>This zoning objective provides for civic, religious, community and educational facilities including health care, child care, fire station, courthouse, schools, churches, meeting halls and other community facilities, ancillary neighbourhood uses and services.</p>
F	Open Space & Amenity	<p>To protect and provide for recreation, open space and amenity provision.</p> <p>The areas included in this zoning objective cover both private and public open space and are dispersed throughout the town. The aims of this land use-zoning objective include; to protect, improve and provide for recreation, open space and amenity provision; to protect, improve and maintain public open space; to preserve private open space and to provide recreational and community facilities. The Council will not normally permit development that would result in a loss of open space within the town except where compensatory open space is provided to service the community affected in an appropriate location. Existing agricultural uses in open space areas will continue to be permitted, and</p>

		reasonable development proposals in relation to this use will be considered on their merits.
H	Industry and Warehousing and associated Office Use	<p>To provide for industrial Development, Warehousing and associated Office Use.</p> <p>This zoning provides for warehousing and industrial development. Other uses, ancillary or similar to industry and warehousing will be considered on the merits of each planning application and may be acceptable.</p> <p>Existing development within the Business Park is sited on raised land and avoided being flooded during December 2015, however it is still at potential risk from a significant 1% AEP event. Any proposed redevelopment of existing parts of the Business Park must be subject to appropriately detailed FRA as specified within Section 5 and Section 6, particularly that within Section 5.7, 5.10 and 6.4.</p> <p>The undeveloped zoned land within Flood Zone A/B is subject to an extant planning permission which included a hydrological study confirming the flood risk management approach. In this specific case the Justification Test does not need to be applied, lands can be developed as planned, however further analysis of the loss of floodplain and consistency of floor levels using updated CFRAM analysis would be required. Should the site remain unconstructed and the planning application lapses, any future planning applications on the site (prior to the next variation or draft of the LAP) should be subject to an appropriately detailed FRA specific to the new site layout that includes hydraulic modelling to a standard that improves upon the OPW CFRAM approach. The sequential approach should be applied within the proposed site and the FRA must be able to demonstrate that the proposed development can offer compensatory storage to sustainably manage flood risk and not increase flood levels to surrounding development.</p> <p>Under the next amendment or review of the LAP (if there is no extant permission in place) the lands and zoning should be considered in line with the sequential approach and Justification Test for Plan Making.</p>
Q	Enterprise & Employment	<p>To facilitate an appropriate mix of employment uses within a high-quality landscaped development including office-based industry, enterprise and incubator units, business, science and technology.</p> <p>The following definition of uses are provided:</p> <ul style="list-style-type: none"> • Office Based Industry: Where the activity is concerned primarily with producing an end-product (e.g. software development, research and development) or provides telephone or web based services (e.g. telemarketing). Only office developments to which the public do not normally have access will be permitted within this zone. • Enterprise and Incubator units: Small and mixed sized workspace units suitable for small businesses and start-up companies. Limited light industrial will be considered in the context of the overall campus development. No heavy Industrial workshop units will be permitted within this zone. • Business, Science & Technology units: High technology, research and development facilities, corporate/industrial offices, and support service facilities. • Support Facilities: Without compromising policy of resisting inappropriately located retail and leisure development, provision is made for small scale, 'walk to' facilities (i.e. restaurant, sandwich shop and specialist services like crèches), which are integrated with employment units and are of a nature and scale to serve the needs of employees within this employment area.
M1	Manufacturing, Tourism and Enterprise / Employment Development	<p>To facilitate an appropriate mix of employment uses within a high-quality landscaped development including office-based industry, enterprise, incubator units, business, science and technology.</p> <p>The following definition of uses are provided:</p> <ul style="list-style-type: none"> • Office Based Industry: Where the activity is concerned primarily with producing an end-product (e.g. software development, research and development) or provides telephone or web based services (e.g.

		<p>telemarketing). Only office developments to which the public do not normally have access will be permitted within this zone.</p> <ul style="list-style-type: none"> • Enterprise and Incubator units: Small and mixed sized workspace units suitable for small businesses and start-up companies. Limited light industrial will be considered in the context of the overall campus development. No heavy Industrial workshop units will be permitted within this zone. • Business, Science & Technology units: High technology, research and development facilities, corporate/industrial offices, and support service facilities. • Support Facilities: Without compromising policy of resisting inappropriately located retail and leisure development, provision is made for small scale, 'walk to' facilities (i.e. restaurant, sandwich shop and specialist services like crèches), which are integrated with employment units and are of a nature and scale to serve the needs of employees within this employment area. • Tourism Uses e.g. Hotel use <p>A comprehensive masterplan, shall be agreed with Carlow County Council for lands zoned Manufacturing, Tourism and Enterprise / Employment on the Royal Oak Road including proposed remediation plans for the brownfield site prior to the granting of permission for any development on these lands. Proposals for development on these lands must integrate with the natural environment of the River Barrow and comprise:</p> <ul style="list-style-type: none"> • A high standard of layout and design. • Low density high quality buildings in parkland setting. • Landscape and habitat considerations. • Sustainable design through use of innovative smart green technologies. • Sustainable transportation with pedestrian and cycle linkages to the town centre. • Not detract from the existing natural landscape. <p>An appropriately detailed Flood Risk Assessment.</p>
M	Manufacturing, Tourism and Enterprise / Employment Development	<p>To facilitate the continued expansion of manufacturing and tourism uses with complementary enterprise uses as appropriate.</p> <p>The purpose of this zoning is to promote and encourage the manufacturing and tourism related uses currently being established on these sites and to facilitate further expansion for enterprise and employment uses. Such enterprise and employment uses shall complement the primary manufacturing and tourism related uses of the site.</p> <p>Proposals for new development in areas at risk of flooding as identified within the zone associated with the Dunleckny Maltings Site shall be subject to a detailed Flood Risk Assessment in accordance with "The Planning System and Flood Risk Management Guidelines, 2009" and the considerations stipulated within Section 5.7 and 5.10 of the SFRA Report – Appendix 3).</p>
N	Neighbourhood Facilities	<p>To protect and provide for and / or improve mixed use neighbourhood centre facilities at the Royal Oak.</p> <p>This objective is to facilitate the provision / upgrading of further local facilities such as small convenience shop, hairdressers, hardware etc. within a residential neighborhood. Neighbourhood centres provide an essential and sustainable amenity for residential areas and it is important that these be maintained and enhanced and strengthened. This area may include an element of housing and tourist facilities to support the significant investment by Walsh Whiskey Distilleries in the neighbourhood.</p>
T	Integrated Tourism and Leisure	<p>To facilitate the provision of an integrated tourism and leisure Development.</p> <p>The purpose of this zoning is to seek the delivery of an integrated tourism and leisure development while securing the preservation of Bagenalstown</p>

		<p>House and associated structures. Appropriate uses in this area include tourism accommodation, hotel, equestrian and leisure developments associated with the River Barrow. Other uses which complement the overall zoning will be considered on their merits.</p> <p>Proposals for new development within flood zone A/B or adjacent to the Mill Race shall be subject to an appropriately detailed Flood Risk Assessment. The sequential approach must be followed and the justification test applied where necessary which will ensure that no highly vulnerable use is included within Flood Zone A/B. Consideration of compensatory storage must be included if any land raising within Flood Zone A is proposed, but should be avoided in most cases. Refer to SFRA Section 5, in particular Section 5.7 and 5.10 for further requirements.</p>
I	Agricultural	<p>To retain and protect agricultural uses.</p> <p>The purpose of this zoning is to ensure the retention of agricultural uses and protect them from urban sprawl and ribbon development. Uses which are directly associated with agriculture or which would not interfere with this use are open for consideration. This includes limited housing for members of landowners' families or persons who can demonstrate a genuine need to live in the agriculture zone, tourism related projects such as tourist caravan parks or campsites and amenity uses such as playing fields, or parks.</p>
J	Utilities	<p>To facilitate the provision of infrastructure and utilities.</p> <p>This zoning objective provides for the development of water and wastewater facilities and other such uses and facilities.</p> <p>Any proposals for any future upgrade of the wastewater treatment plant shall be considered carefully and given the high vulnerability of the site should include appropriate risk mitigation measures. (Refer section 5.7 and 5.10 and 6.3 SFRA Appendix 3).</p>

Table 12: Specific Land Use Zoning Objectives

12.2 Zoning Matrix

The Zoning Matrix (see Table 13) illustrates a range of land uses together with an indication of their broad acceptability in each of the land use zones. Uses other than the primary use for which an area is zoned may be permitted provided they are not in conflict with the primary use-zoning objective. The land use-zoning matrix is intended to provide guidance to landowners and developers and is not intended to supplant the normal planning process. An indication that a proposal would be 'permitted in principle' from the matrix should not be taken to imply a granting of permission, or indeed that a planning application may necessarily be successful.

12.2.1 Application of Zoning Policy

It is an objective of the Council to carry out its development control function in accordance with the Matrix Table for each zone. However, it should not be assumed that if a proposed development complies with the Matrix Table, it would necessarily be accepted. The matrix relates to land use only. Other factors including density, building height, design standards, traffic generation, environmental factors and so on, are also relevant in establishing whether or not a development proposal would be acceptable in a particular location and conforms to the proper planning and sustainable development of the town.

12.2.2 Definition of Terms

• Permitted in Principle

The Council will seek to ensure the development of lands and properties in accordance with the Zoning Objectives set out in this section of the plan. Land uses designated under each zoning objective, as 'Permitted in Principle' are generally acceptable, subject to compliance with the provisions of this Local Area Plan and the policies and objectives of the Carlow County Development Plan 2015- 2021.

• Open for Consideration

Land uses shown as 'Open for Consideration' are uses that are not

considered acceptable in principle in all parts of the relevant use zone. However, such uses may be acceptable in circumstances where the Council is satisfied that the proposed use would not conflict with the general objectives for the zone and the permitted or existing uses as well as being in the interests of the proper planning and sustainable development of the area.

• Not Permitted

Land uses which are indicated as 'Not Permitted' in the Land Use Zoning Matrix (Table 13) will not be permitted.

• Other Uses

Proposed land uses not listed in the matrices will be considered on the merits of the individual planning application, with reference to the most appropriate use of a similar nature indicated in the table and in relation to the general policies and zoning objectives for the area in question of the Plan.

• Non-Conforming Uses

Existing established uses that are inconsistent with the primary zoning objective, where legally established by continuous use for the same purpose prior to 1st October 1964 or by a planning permission, will not be subject to legal proceedings under the Act in respect of their continued use. Where extensions or improvements of premises accommodating these uses are proposed each shall be considered on its merits in accordance with the proper planning and sustainable development of the area.

• Transitional Areas

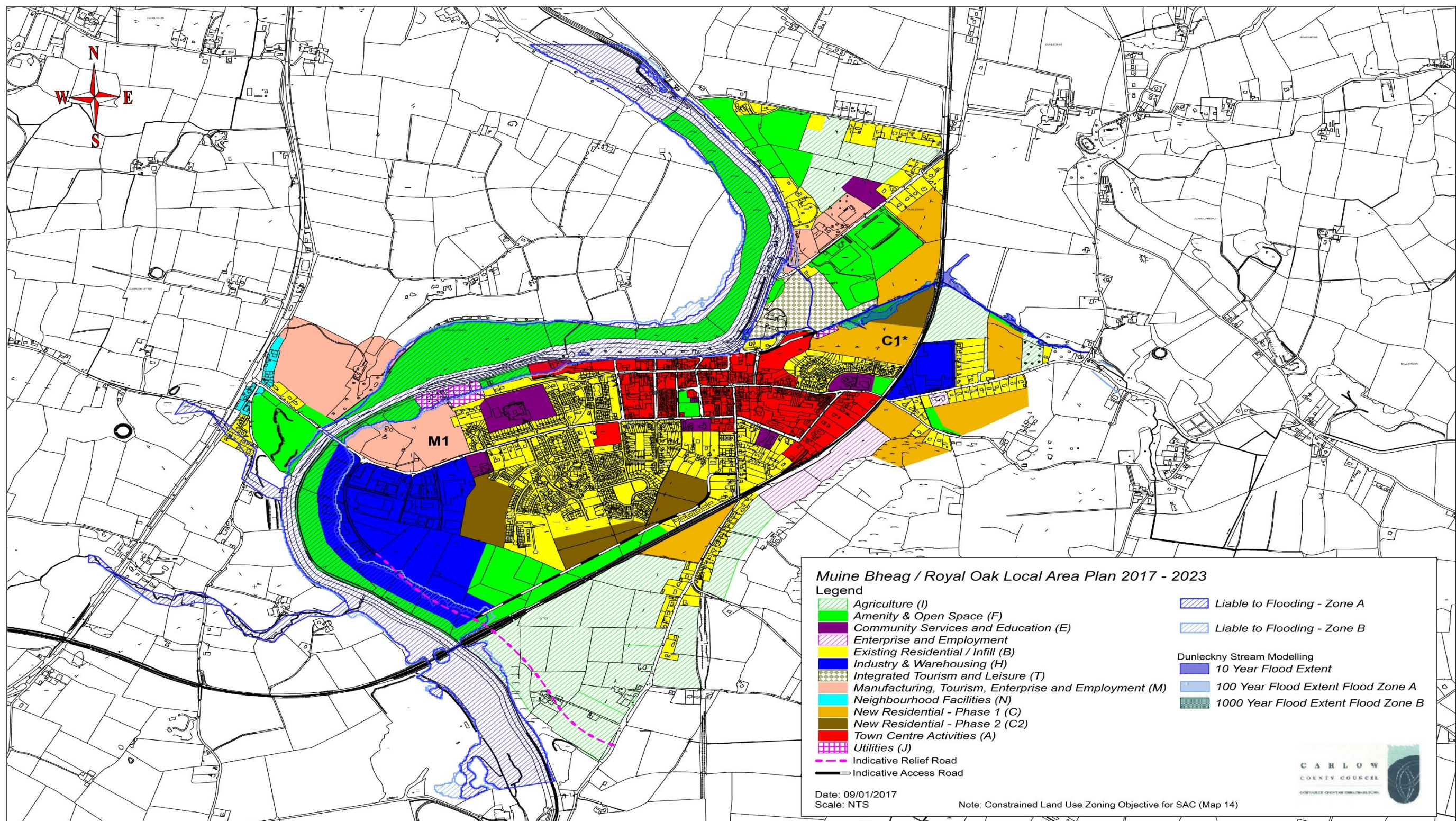
While the zoning objectives indicate the different uses permitted in each zone it is important to avoid abrupt transitions in scale and use at the boundary of adjoining land use zones. In these areas it is necessary to avoid developments that would be detrimental to amenity. In zones abutting residential areas, particular attention will be paid to the uses, scale, density and appearance of development proposals and to landscaping, creation of a buffer zone and screening proposals in order to protect the amenities of residential properties. Development abutting amenity and open space will generally facilitate the passive supervision of that space, where possible by fronting onto it.

Land use	Town Centre A	Existing Residential B	New Residential C	New Residential C1	New Residential C2	Community Services and Education E	Open Space and Amenity F	Industry Warehousing and Associated Office Use H	Enterprise and Employment Q	Manufacturing, Tourism, Enterprise and Employment M & M1	Neighbourhood N	Integrated Tourism and Leisure T	Agriculture I	Utilities J
Dwelling	Y	Y	Y	Y	O*	N	N	N	N	O	Y	Y	O	N
Guest house/ hotel/hostel	Y	O	O	O	O	N	N	N	N	Y	Y	Y	N	N
Restaurant	Y	O	O	O	O	N	N	O	O	Y	Y	Y	N	N
Pub	Y	N	N	N	N	N	N	N	O	O	Y	O	N	N
Shop (convenience)	Y	O	O	O	O	N	N	N	O	O	Y	N	N	N
Shop (comparison)	Y	N	N	N	N	N	N	N	N	O	O	O	N	N
Retail warehouse	N	N	N	N	N	N	N	O	O	O	N	N	N	N
School	Y	O	O	O	O	Y	O	N	O	O	N	N	N	N
Medical and Related Consultant	Y	O	O	O	O	Y	N	N	Y	O	Y	N	N	N
Health Centre	Y	O	O	O	O	Y	N	N	Y	Y	N	N	N	N
Nursing Home	Y	O	O	O	O	Y	N	N	N	N	N	N	N	N
Community hall & sports halls	Y	O	O	O	O	Y	O	N	O	Y	N	O	O	N
Recreational buildings	Y	O	O	O	O	Y	O	O	Y	Y	N	Y	O	N
Cultural uses, library	Y	O	O	O	O	Y	O	N	O	Y	O	Y	N	N
Offices	Y	N	N	N	N	N	N	Y	Y	Y	O	O	N	N
Live/work Unit	Y	O	O	O	O	N	N	N	N	O	O	N	N	N
Garages, panel beating and car repairs	O	N	N	N	N	N	N	Y	O	O	N	N	N	Y
Petrol station	O	N	N	N	N	N	N	O	Y	Y	N	N	O	Y
Motor sales	O	N	N	N	N	N	N	O	Y	Y	N	N	N	Y
Car parks	Y	N	N	N	N	O	O	Y	Y	Y	N	O	N	Y
Heavy commercial vehicle parks	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y
Cinema, dancehall, disco	Y	N	N	N	N	O	N	N	O	O	N	O	N	N
Repository, store, depot	O	N	N	N	N	N	N	Y	Y	Y	N	N	N	O
Industry	N	N	N	N	N	N	N	Y	O	Y	N	N	N	O
Industry (light)	O	N	N	N	N	N	N	Y	Y	Y	N	O	N	O
Workshops	O	N	N	N	N	N	N	Y	Y	Y	N	O	O	Y
Playing fields	O	O	O	O	O	Y	Y	N	O	O	N	Y	Y	N
Place of worship	Y	O	O	O	O	Y	N	N	O	Y	O	O	N	N
Park/playground	Y	O	Y	Y	Y	Y	Y	N	O	Y	N	Y	Y	N
Tourist related facilities	Y	O	O	O	O	N	O	O	Y	Y	N	Y	O	N
Cattleshed/slatted unit	N	N	N	N	N	N	N	N	N	N	N	N	Y	N
Broiler house	N	N	N	N	N	N	N	N	N	O	N	N	Y	N
Stable yard	N	N	N	N	N	N	N	N	N	O	N	Y	Y	N
Hot food take-away	O	N	N	N	N	N	N	N	Y	O	N	O	N	N
Utility Structures	Y	O	O	O	O	Y	O	Y	Y	Y	O	O	Y	Y
Funeral Homes	Y	N	N	N	N	Y	N	N	O	Y	N	N	N	N
Creche/playschool	Y	O	Y	Y	Y	Y	O	N	O	Y	O	Y	O	N
Adult Education /literacy/ basic education/youth reach facility	Y	O	O	O	O	Y	O	N	Y	Y	O	Y	O	N
Neighbourhood Centre	Y	Y	N	N	N	N	N	N	N	N	Y	N	N	N
Thermal Treatment Plant	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Y = permitted in principle
O = open for consideration
N = not permitted

*Residential zoning to be considered beyond period of this LAP in accordance with Core Strategy then pertaining. Residential Schemes will not be permitted. A single residential dwelling maybe considered on its merits in accordance with the core strategy and the proper planning and sustainable development of the area.

Table 13: Land Use Zoning Matrix. To be read in conjunction with Map 16



Map 16: Muine Bheag / Royal Oak Landuse Zoning / Objectives Map

SEA ENVIRONMENTAL REPORT

APPENDIX II – NON-TECHNICAL SUMMARY

FOR THE

MUINE BHEAG / ROYAL OAK LOCAL AREA PLAN –2017-2023

for: Carlow County Council

Athy Road
Carlow
County Carlow



by: CAAS Ltd.

2nd Floor, The Courtyard
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JANUARY 2017

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Section 1 Introduction and Terms of Reference

This is the Non-Technical Summary of the Environmental Report for the Muine Bheag/ Royal Oak Local Area Plan 2017-2023. The purpose of the Environmental Report is to provide a clear understanding of the likely environmental consequences of decisions regarding the adoption and implementation of the Plan.

What is an SEA?

SEA is a systematic process of predicting and evaluating the likely environmental effects of implementing a proposed plan, or other strategic action, in order to ensure that these effects are appropriately addressed at the earliest appropriate stage of decision-making on a par with economic, social and other considerations.

Why is it needed?

The SEA has been carried out in order to comply with the provisions of the SEA Regulations and in order to improve planning and environmental management within Muine Bheag / Royal Oak. The output of the process is an Environmental Report that should be read in conjunction with the Plan.

How does it work?

All of the main environmental issues in the area were assembled and presented to the team who prepared the Plan. This helped them to devise a Plan that protects whatever is sensitive in the environment. It also helped to identify wherever potential conflicts between the Plan and the environment exist and enabled these conflicts to be mitigated.

The SEA was scoped in consultation with designated environmental authorities.

What is included in the Environmental Report that accompanies the Plan?

The Environmental Report contains the following information:

- A description of the environment and the key environmental issues;
- A description and assessment of alternatives for the Plan;
- An assessment of the provisions of the Plan; and,
- Mitigation measures which set out to aid compliance with important environmental protection legislation - e.g. the Water Framework Directive, the Habitats Directive - and which will avoid/reduce the environmental effects of implementing the Plan.

What happens at the end of the process?

An SEA Statement is prepared which summarises, inter alia, how environmental considerations have been integrated into the Plan.

Section 2 The Local Area Plan

2.1 Vision and Strategic Aims

Carlow County Council's Vision for the town included in the Plan is as follows:

To build on Muine Bheag / Royal Oaks unique strengths including its distinct character of built and natural heritage and to provide a focused approach to planning for future growth in a coherent, sustainable, spatial fashion. The Plan aims to achieve a more consolidated urban form that facilitates a sustainable economic base and creates sustainable and integrated communities while balancing future development with the conservation and enhancement of the town's natural and built environment.

The main Strategic Objectives for the town included in the Plan are as follows:

- 1. To create an attractive town with a compact urban form which contributes to the natural and built heritage amenities of the town and provides a vibrant and vital mixed-use environment.*
- 2. To facilitate the creation of a sustainable vibrant and vital economy which maximises the unique attributes of the town.*
- 3. To create a town of well-connected sustainable neighbourhoods and socially inclusive communities.*

The Council is committed to delivering this vision of the town through working in partnership with the local community and local organisations, and through promoting the policies and objectives contained in the LAP, and future, LAPs.

2.2 Relationship with other relevant Plans and Programmes

Introduction

The Plan sits within a hierarchy of land use forward planning strategic actions. The Plan must comply with relevant higher-level strategic actions and may, in turn, guide lower level strategic actions. The following sections identify a number of these strategic actions, further details of which are contained in the main Plan document.

The Plan is at the lower level of the hierarchy in the context of national, regional and county level plans. The preparation of the Local Area Plan has also been informed and influenced by various local government, national and international policy documents including (but not limited to) the following:

International

- Agenda 2000
- Local Agenda 21
- The European Spatial Development Perspective (ESDP)
- Various EU Directives

National

- Infrastructure and Capital Investment 2012-16: Medium Term Exchequer Framework, 2011
- Sustainable Development: A Strategy for Ireland, 1997
- National Spatial Strategy 2002 – 2020 (NSS)
- Ministerial Guidelines issued under Section 28 of the Planning and Development Act 2000-2011

Regional

- Regional Planning Guidelines for the South East Region 2010-2022

County

- Carlow County Development Plan 2015-2021

Regional Planning Guidelines

County Carlow, including Muine Bheag / Royal Oak, is subject to the Regional Planning Guidelines for the South Eastern Regional 2010-2022 that provide a framework for the long-term strategic development of the South-Eastern Region. The Guidelines do this through setting out goals, policies and objectives in relation to population targets, housing, infrastructure, economic development, environment, amenities, social infrastructure and community development, ensuring the successful implementation of the NSS at regional, county and local level.

Carlow County Development Plan 2015-2021

The Carlow County Development Plan 2015-2021 sets out the strategic planning and sustainable development of County Carlow over its lifetime and is consistent with the Regional Planning Guidelines.

Environmental Protection Objectives

The Local Area Plan is subject to a number of high-level environmental protection policies and objectives with which it must comply. Examples of Environmental Protection Objectives include the aim of the EU Habitats Directive - which is to contribute towards ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora in the European territory of Member States - and the purpose of the Water Framework Directive - which is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater which, among other things, prevents deterioration in the status of all water bodies and protects, enhances and restores all waters with the aim of achieving a good status.

Section 3 The Environmental Baseline

3.1 Introduction

The environmental baseline of Muine Bheag / Royal Oak is described in this section. This baseline together with the Strategic Environmental Objectives, which are identified further in the document, is used in order to identify, describe and evaluate the likely significant environmental effects of implementing the Plan and in order to determine appropriate monitoring measures. The environmental baseline is described in line with the legislative requirements encompassing the following components – biodiversity, flora and fauna, population, human health, soil, water, air and climatic factors, material assets, cultural heritage, landscape and the interrelationship between these components.

The lack of a centralised data source that could make all environmental baseline data for the Plan area both readily available and in a consistent format posed a challenge to the SEA process. This difficulty is one that has been encountered while undertaking SEAs at local authorities across the Country and was overcome by investing time in the collection of data from various sources and through the use of Geographical Information Systems.

3.2 Likely Evolution of the Environment in the Absence of the Plan

The 2010-2016 Muine Bheag / Royal Oak Local Area Plan contains provisions which contribute towards environmental protection and sustainable development within Muine Bheag / Royal Oak.

If the previous Plan was to have expired and not replaced by the new Plan, this would have resulted in a deterioration of the town's planning and environmental protection framework. Although higher-level environmental protection objectives – such as those of the new 2015-2021 County Development Plan and various EU Directives and transposing Irish Regulations – would still apply, the deterioration of this framework would mean that new development would be less coordinated and controlled. Such development would have the potential to result in an increase in the occurrence of adverse effects on all environmental components, especially those arising cumulatively. Cumulative effects occur as a result of the addition of many small impacts to create one larger, more significant, impact.

Such adverse effects could include:

- Loss of biodiversity with regard to Natura 2000 Sites and Annexed habitats and species;
- Loss of biodiversity with regard to ecological connectivity and stepping stones;
- Loss of biodiversity with regard to designated sites including Wildlife Sites and species listed on Schedule 5 of the Wildlife Act 1976;
- Spatially concentrated deterioration in human health;
- Adverse impacts on the hydrogeological and ecological function of the soil resource;
- Adverse impacts upon the status of water bodies arising from changes in quality, flow and/or morphology;
- Increase in the risk of flooding;
- Failure to provide adequate and appropriate waste water treatment;
- Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean;
- Increases in waste levels;
- Failure to contribute towards sustainable transport and associated impacts;
- Effects on entries to the Record of Monuments and Places and other archaeological heritage;
- Effects on entries to the Records of Protected Structures and other architectural heritage; and
- Occurrence of adverse visual impacts.

3.3 Biodiversity and Flora and Fauna

Natura 2000

Candidate Special Areas of Conservation (cSACs) have been selected for protection under the European Council Directive on the conservation of natural habitats and of wild fauna and flora (92/43/EEC) by the (former) Department of the Environment, Heritage and Local Government due to their conservation value for habitats and species of importance in the European Union.

Special Protection Areas (SPAs) have been selected for protection under the 1979 European Council Directive on the Conservation of Wild Birds (79/409/EEC) due to their conservation value for birds of importance in the European Union. SPAs, along with SACs, comprise Ireland's Natura 2000 network – part of an EU-wide network of protected areas established under the Habitats Directive.

There is one Natura 2000 sites occurring inside the Plan boundary, which is the River Barrow and River Nore cSAC. This site has been designated due to the presence of a number of habitats and species including petrifying spring, old oak woodlands, alluvial forests, Desmoulin's whorl snail, freshwater pearl mussel, white-clawed crayfish, sea lamprey brook lamprey, river lamprey, twaite shad, Atlantic salmon, otter, Killarney fern and Nore freshwater pearl mussel. cSACs and SPAs in the vicinity of the Plan area are shown on Table 3.1 The River Barrow and River Nore cSAC transects the Plan area and is shown on Figure 3.1.

Table 3.1 Natura 2000 Sites within 15km of the Plan area

Natura 2000 Sites		
Designation	Code	Site Name
SAC	02162	River Barrow and River Nore SAC
	0770	Blackstairs Mountains SAC

Proposed Natural Heritage Areas

Natural Heritage Areas (NHAs) are designated due to their national conservation value for ecological and/or geological/geomorphological heritage. They cover nationally important semi-natural and natural habitats, landforms or geomorphological features, wildlife plant and animal species or a diversity of these natural attributes. NHAs are designated under the Wildlife (Amendment) Act 2000. Proposed NHAs (pNHA) were published on a non-statutory basis in 1995, but have not since been statutorily proposed or designated.

There are no NHAs or pNHAs occurring inside the Plan boundary. NHAs and pNHAs in the vicinity of the Plan area are listed on Table 3.2 and mapped on Figure 3.2. The closest of these sites is the Ballymoon Esker pNHA, located less than 1km to the east of the Plan area.

Table 3.2 NHAs and pNHAs in the vicinity of the Plan area

Natural Heritage Areas		
Designation	Code	Site Name
NHA	02382	Coan Bogs NHA
Proposed Natural Heritage Areas		
Designation	Code	Site Name
pNHA	408	Mothel Church, Coolcullen
	770	Blackstairs Mountains
	788	Ardristan Fen
	797	Ballymoon Esker
	806	Cloghristick Wood
	830	Clohastia
	846	Red Bog, Dungarvan
855	Whitehall Quarries	

Ecological Networks and Connectivity

Ecological networks are important in connecting areas of local biodiversity with each other and with nearby designated sites so as to prevent islands of habitat from being isolated entities. They are composed of linear features, such as treelines, hedgerows and rivers/streams, which provide corridors or stepping-stones for wildlife species moving within their normal range. They are important for the migration, dispersal and genetic exchange of species of flora and fauna particularly for mammals, especially for bats and small birds and facilitate linkages both between and within designated ecological sites, the non-designated surrounding countryside and the town.

Important ecological networks comprise a variety of features including the Barrow River and associated Canal that flow through the Plan area, various agricultural lands, stands of trees and hedgerows.

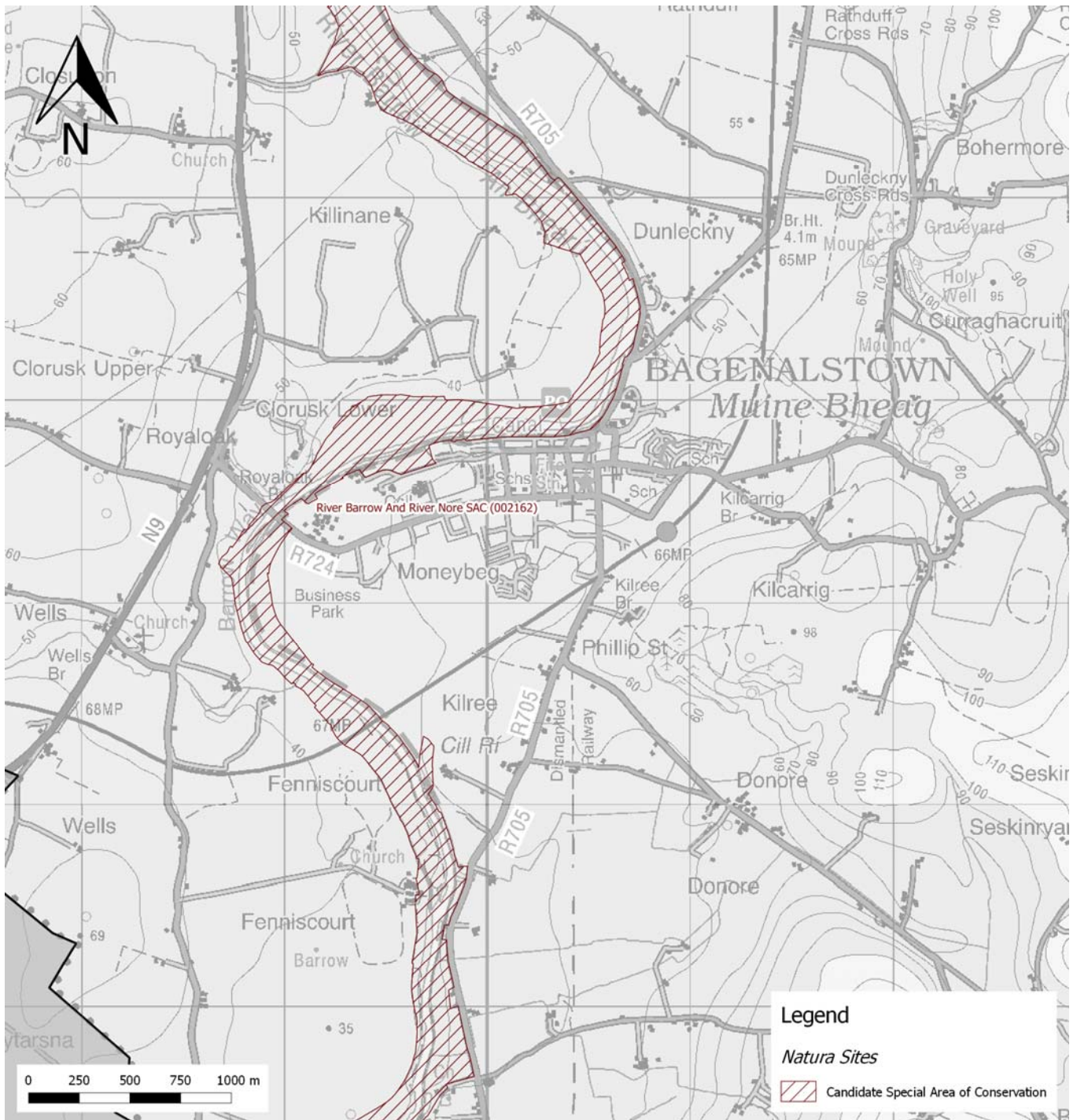


Figure 3.1 River Barrow and River Nore cSAC

Source: NPWS (datasets downloaded February 2016)

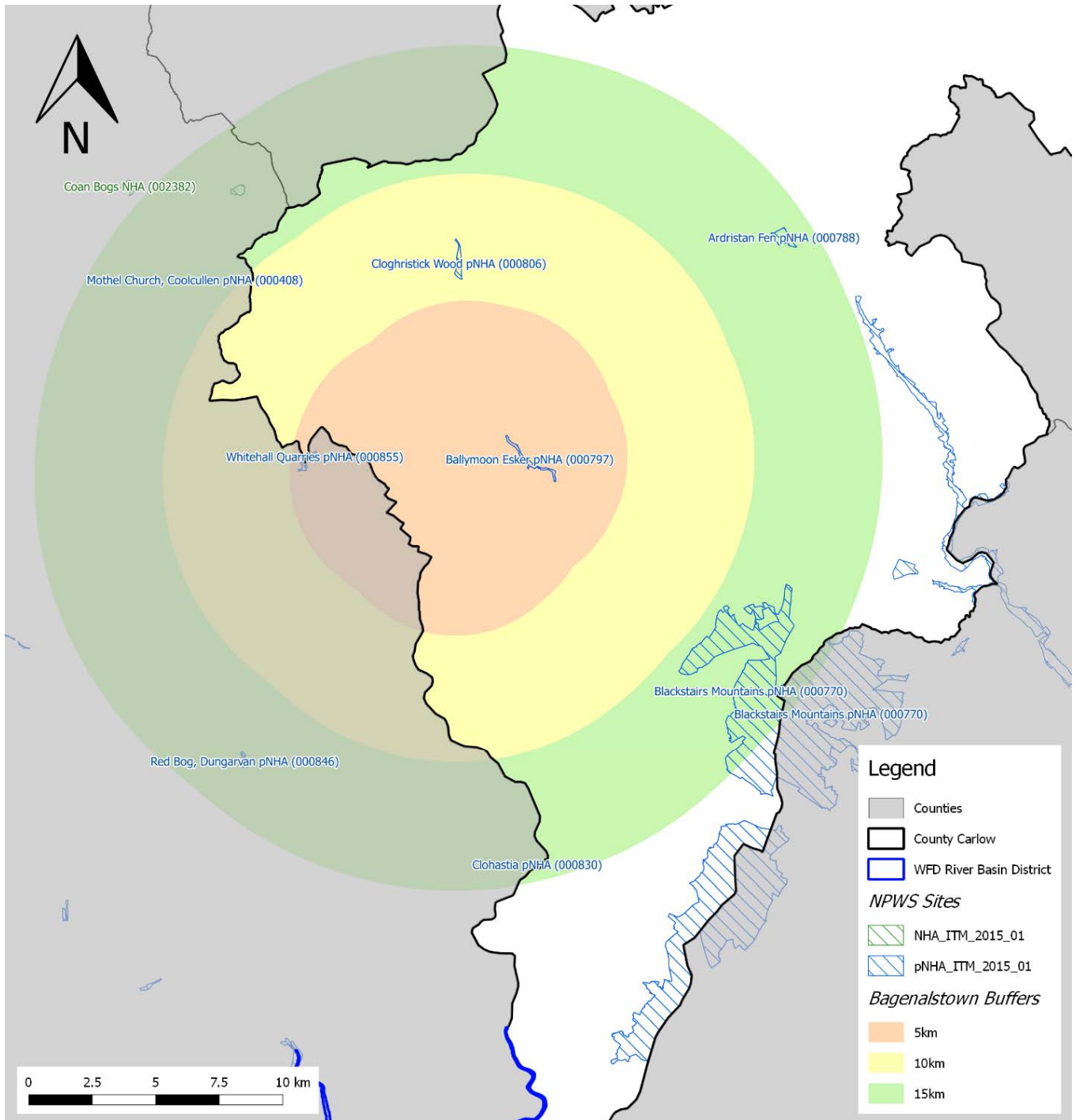


Figure 3.2 NHAs and pNHAs in the vicinity of the Plan area

Source: NPWS (datasets downloaded February 2016)

3.4 Population and Human Health

Population

The population of Muine Bheag/ Royal Oak was recorded as being 2,950 in 2011.

Human Health

Human health has the potential to be impacted upon by environmental vectors (i.e. environmental components such as air, water or soil through which contaminants or pollutants, which have the potential to cause harm, can be transported so that they come into contact with human beings). Hazards or nuisances to human health can arise as a result of exposure to these vectors arising from incompatible adjacent land uses for example. These factors have been considered with regard to: the description of the baseline of each environmental component; and the identification and evaluation of the likely significant environmental effects of implementing the Plan.

3.5 Soil

Soil can be considered as a non-renewable natural resource because it develops over very long timescales. It is an extremely complex, variable and living medium and performs many vital functions including: food and other biomass production, storage, filtration and transformation of many substances including water, carbon, and nitrogen. Soil has a role as a habitat and gene pool, serves as a platform for human activities, landscape and heritage and acts as a provider of raw materials. Such functions of soil are worthy of protection because of their socio-economic as well as environmental importance. Soils in any area are the result of the interaction of various factors, such as parent material, climate, vegetation and human action.

The geology¹ of County Carlow has influenced the landscapes, soils, habitats, economic activities such as quarrying and features of local cultural interest such as stonewalls, limekilns etc. The Geological Survey of Ireland, in partnership with Carlow County Council, has developed a list of County Geological Sites, as part of the Irish Geological Heritage Programme. These are sites of local geological and geomorphological interest, or sites which contain a feature of local geological and geomorphological interest. Some of these sites, which are of national significance, may in the future, be proposed by the Geological Survey of Ireland and the National Parks and Wildlife Service, as geological Natural Heritage Areas (NHAs). One of these County Geological Sites – the Ballymoon Esker – is located to the East of the Plan area.

The programme of County Geological Site documentation is an on-going, dynamic process as additional sites may be added through new exposures such as quarrying and road cuttings and through notifications from local community knowledge.

3.6 Water

Potential Pressures on Water Quality and the Water Framework Directive

Human activities, if not properly managed, can cause deterioration in water quality. Pressures exerted by human activities include the following: sewage and other effluents discharged to waters from point sources, e.g. pipes from treatment plants; discharges arising from diffuse or dispersed activities on land; abstractions from waters; and structural alterations to water bodies. Since 2000, Water Management in the EU has been directed by the Water Framework Directive 2000/60/EC (WFD). The WFD requires that all Member States implement the necessary measures to prevent deterioration of the status of all waters - surface, ground, estuarine and coastal - and protect, enhance and restore all waters with the aim of achieving "good status". All public bodies are required to coordinate their policies and operations so as to maintain the good status of water bodies that are currently

¹ Geodiversity (and Geological Heritage) refers to the variety of rocks, minerals, natural processes, landforms, fossils and soils that underlie and determine the character of our landscape and environment. Geology is the science that comprises the study of the Earth, the rocks of which it is composed and the processes by which it evolves.

unpolluted and improve polluted water bodies to a good status. Ireland has been divided into eight river basin districts or areas of land that are drained by a large river or number of rivers and the adjacent estuarine / coastal areas. The management of water resources is on these River Basin Districts (RBDs). Muine Bheag/ Royal Oak falls within the South Eastern RBD.

Surface Water

The WFD defines 'surface water status' as the general expression of the status of a body of surface water, determined by the poorer of its ecological status and its chemical status. Ecological status is an expression of the structure and functioning of aquatic ecosystems associated with surface waters. Such waters are classified as of "good ecological status" when they meet Directive requirements. Good surface water chemical status means that concentrations of pollutants in the water body do not exceed the environmental limit values specified in the Directive.

Stretches of water bodies upstream, to the north of Royaloak Bridge are currently identified by the EPA as having a Good status with while Poor status is attributed to stretches of water bodies downstream, to the south of Royal Oak Bridge.

Groundwater

For groundwater bodies, the approach to classification is different from that for surface water. For each body of groundwater, both the chemical status and the quantitative must be determined. Both have to be classed as either good or poor. The WFD sets out a series of criteria that must be met for a body to be classed as good chemical and quantitative status.

The status of the groundwater underlying the area of Muine Bheag / Royal Oak is identified as being of good status.

The Geological Survey of Ireland (GSI) rates aquifers according to both their productivity and vulnerability to pollution. Much of the Plan area is underlain by two overlapping aquifers – A regionally important aquifer and a Gravel Aquifer (Barrow Gravels). Locally important aquifers occur to the southeast, east and west of the Plan area.

Aquifer vulnerability refers to the ease with which pollutants of various kinds can enter underground water. Figure 3.3 maps aquifer vulnerability for the Plan and surrounding area – much of the area is identified as being of high vulnerability with parts to the south-east of the town shown as being of extreme vulnerability or 'rock at or near surface or Karst'. Medium to low vulnerability exists to the west and northwest of the town.

Flooding

Flooding is an environmental phenomenon that, as well have causing economic and social impacts, could in certain circumstances pose a risk to human health.

European Directive 2007/60/EC on the assessment and management of flood risks requires Member States to carry out a preliminary assessment by 2011 in order to identify the river basins and associated coastal areas at risk of flooding. For such zones, flood risk maps have been made available. Flood risk management plans focused on prevention, protection and preparedness are currently being finalised. The Office of Public Works has prepared Preliminary Flood Risk Assessment (PFRA) maps that identify areas where the risks associated with flooding might be significant. These areas, Areas for Further Assessment (AFAs), are where more detailed assessment is required to more accurately assess the extent and degree of flood risk. Flood hazard and flood risk maps for AFAs were made available in 2015 and Flood Risk Management Plans are currently being finalised. Muine Bheag / Royal Oak is not indicated as an AFA.

In 2009 the DEHLG published The Planning System and Flood Risk Management Guidelines for Planning Authorities. These are aimed at ensuring a more consistent, rigorous and systematic approach which will fully incorporate flood risk assessment and management into the planning system. Planning authorities are required to undertake flood risk identification, assessment and

management processes as appropriate when preparing land use plans and in the consideration of applications for planning permission.

A Strategic Flood Risk Assessment (SFRA) has been undertaken alongside the preparation of the Plan. The requirement for SFRA is provided under 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (DEHLG and OPW, 2009).

The main source of historic and potential flood risk to development in Muine Bheag and Royal Oak is the River Barrow that extends across a relatively expansive floodplain. In addition to this, there are four small and steeply sloping tributaries that drain into the Barrow and exert some flood risk to surrounding lands. The SFRA examined flood risk at locations including the following in order identify areas that are at elevated levels of flood risk:

- Lands Upstream of Railway Line;
- Bagenalstown House and Dunleckney Maltings Area;
- Town Centre and Adjacent Lands;
- Industrial Lands adjacent to River Barrow; and
- Royal Oak Residential Lands.

Areas having elevated levels of flood risk are mapped on Figure 4.4 and were used to inform the land use planning provided for by the Plan.

The preparation of the Plan, SEA and SFRA has taken place concurrently and the findings of the SFRA have informed both the Plan and the SEA. The SFRA has facilitated the integration of flood risk management considerations into the Plan. Further detail on lands that are at elevated levels of flood risk within the Plan area can be found within the SFRA that accompanies the Plan.

Certain lands within the Plan boundary were rezoned to water compatible uses (including 4.7ha of lands from residential to open space and amenity uses). An assessment of flood risk is required in support of any planning application where flood risk may be an issue and this may include sites where a small watercourse or field drain exists nearby. The level of detail will vary depending on the risks identified and the proposed land use. As a minimum, all proposed development must consider the impact of surface water flood risks on drainage design. In addition, flood risk from sources other than fluvial and tidal should be reviewed. In the case of development at appropriate lands, which may be liable to flooding, a site-specific assessment will be carried out at each location. This assessment will include; a) measures to eliminate risk of flooding at the particular development and b) which will not increase the risk of flooding at other locations. Each application will be considered on its particular merits. The LAP also sets out general policy requirements contained in the guidelines to inform strategic land-use decisions with the purpose of ensuring that flood risk management is fully integrated into the Plan.

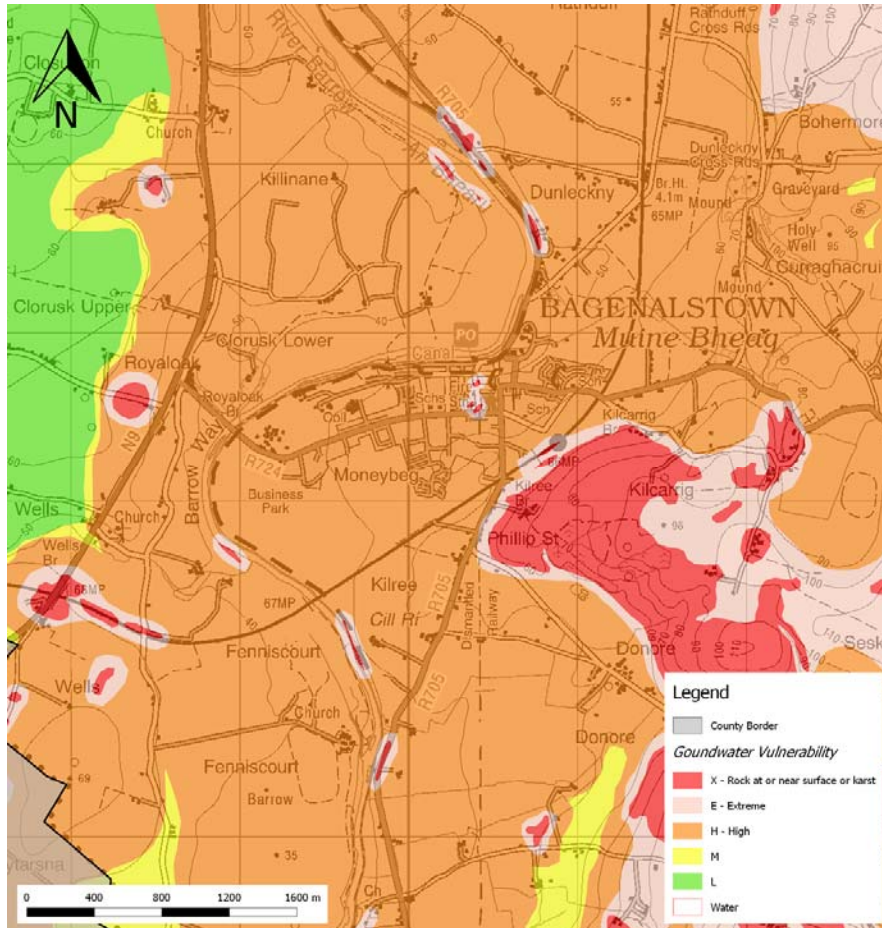


Figure 3.3 Aquifer Vulnerability

Source: GSI (2006)

3.7 Air and Climatic Factors

Ambient Air Quality

In order to protect human health, vegetation and ecosystems, EU Directives set down air quality standards in Ireland and the other Member States for a wide variety of pollutants. These pollutants are generated through fuel combustion, in space heating, traffic, electricity generation and industry and, in sufficient amounts, could affect the well-being of the areas inhabitants. The EU Directives include details regarding how ambient air quality should be monitored, assessed and managed.

In order to comply with air quality standards directives, the EPA measures the levels of a number of atmospheric pollutants. For the purposes of monitoring in Ireland, four zones are defined in the Air Quality Standards Regulations 2002 (SI No. 271 of 2002).

Muine Bheag/ Royal Oak is located within Zone D where air quality is currently identified as being “good”. The EPA’s (EPA, 2015) Air Quality in Ireland 2014 identifies that air quality in Ireland continues to be good, with no exceedances for the pollutants measured.

Noise - The Environmental Noise Directive

Noise is unwanted sound. The Environmental Noise Regulations (SI No. 140 of 2006) transpose into Irish law the EU Directive 2002/49/EC relating to the assessment and management of environmental noise, which is commonly referred to as the Environmental Noise Directive or END. The END defines a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise. The END does not set any limit value, nor does it prescribe the measures to be used in the action plans, which remain at the discretion of

the competent authorities. Limit values are left to each member state. At this point in time, Ireland does not have any statutory limit values.

Climatic Factors

The key issue involving the assessment of the effects of implementing the plan on climatic factors relates to greenhouse gas emissions arising from transport. It is noted that the Plan contains a number of actions that respond to potential threats to environmental components arising from a changing climate.

Flooding (see Section 3.6) is influenced by climatic factors and the implications of climate change with regard to flood risk in relevant locations have been considered by the SFRA that has been undertaken for the Plan. There are emerging objectives relating to climate adaptation and that there is likely to be future Guidance for climate change proofing of land use plan provisions as is flagged in the National Climate Change Adaptation Framework (DECLG, 2012).

In 2009, Ireland's greenhouse gas emissions decreased across all sectors due to the effects of the economic downturn with a decline in total emissions of 7.9 per cent. In 2010, Ireland's emissions fell by a further 0.7 per cent. Ireland's emissions profile has changed considerably since 1990, with the contribution from transport more than doubling and the share from agriculture reducing since 1998.

Travel is a source of:

1. Noise;
2. Air emissions; and
3. Energy use (41.7% of Total Final Energy Consumption in Ireland in 2014 was taken up by transport, the largest take up of any sector)².

Land-use planning contributes to what number and what extent of journeys occur. By addressing journey time through land use planning and providing more sustainable modes and levels of mobility, noise and other emissions to air and energy use can be minimised. Furthermore, by concentrating populations, greenfield development - and its associated impacts - can be minimised and the cost of service provision can be reduced.

Maximising sustainable mobility will also help Ireland meet its emission target for greenhouse gases under the 2020 EU Effort Sharing target that commits Ireland to reducing emissions from those sectors that are not covered by the Emissions Trading Scheme (e.g. transport, agriculture, residential) to 20% below 2005 levels.

3.8 Material Assets

Waste Water

The EPA's most recent report on waste water treatment performance 'Urban Waste Water Treatment in 2015, EPA 2016, identifies that the Muine Bheag and Leighlinbridge Waste Water Treatment Plant (WWTP) passed the water quality standards set down under requirements of the Urban Waste Water Treatment Directive. This same standard was met in 2013 and 2014 by the WWTP. The current WWTP has capacity for approximately 4,000 Population Equivalent (P.E.). The Wastewater treatment is currently at capacity and is included in the Irish Water Investment Plan for upgrade. The current Urban Area (P.E.) using the WWTP is 8,363.

Drinking Water

The Bagenalstown Urban Water Supply Scheme is not listed on the EPA's most recent (Q3 2016) Remedial Action List (a list of public water supplies where remedial action is required to ensure compliance with drinking water standards). The current water supply is considered to have adequate (headroom) capacity available and would cater for any future development growth during the lifetime of this plan. A mains replacement scheme has been approved for Muine Bheag.

² Sustainable Energy Ireland (2014) *Energy in Ireland 1990 – 2014*

3.9 Cultural Heritage

Archaeological Heritage

Muine Bheag/ Royal Oak's archaeological heritage is protected under the National Monuments Acts (1930-2004), Natural Cultural Institutions Act 1997 and the Planning Acts. The Record of Monuments and Places (RMP) is an inventory, established under Section 12 of the National Monuments (Amendment) Act 1994, of sites and areas of archaeological significance, numbered and mapped. The RMP includes all known monuments and sites of archaeological importance dating to before 1700 AD, and some sites that date from after 1700 AD. Figure 3.5 shows the spatial distribution of entries to the RMP in Muine Bheag/ Royal Oak.

Architectural Heritage

The term architectural heritage is defined in the Architectural Heritage (National Inventory) and Historic Monuments Act 1999 as meaning: all structures and buildings together with their settings and attendant grounds, fixtures and fittings; groups of structures and buildings; and, sites which are of technical, historical, archaeological, artistic, cultural, scientific, social, or technical interest.

The Record of Protected Structures (RPS) included in the Plan is legislated for under Section 12 and Section 51 of the Planning and Development Act 2000 as amended. Protected Structures are defined as structures, or parts of structures that are of special interest from an architectural, historical, archaeological, artistic, cultural, scientific, social or technical point of view. Current entries to the RPS in Muine Bheag/ Royal Oak are mapped on Figure 3.6. Examples include the Courthouse building, St. Andrew's Church, St. Mary's Church of Ireland, the Railway Station, the Garda Station on Kilree Street and the Post Office on Main Street.

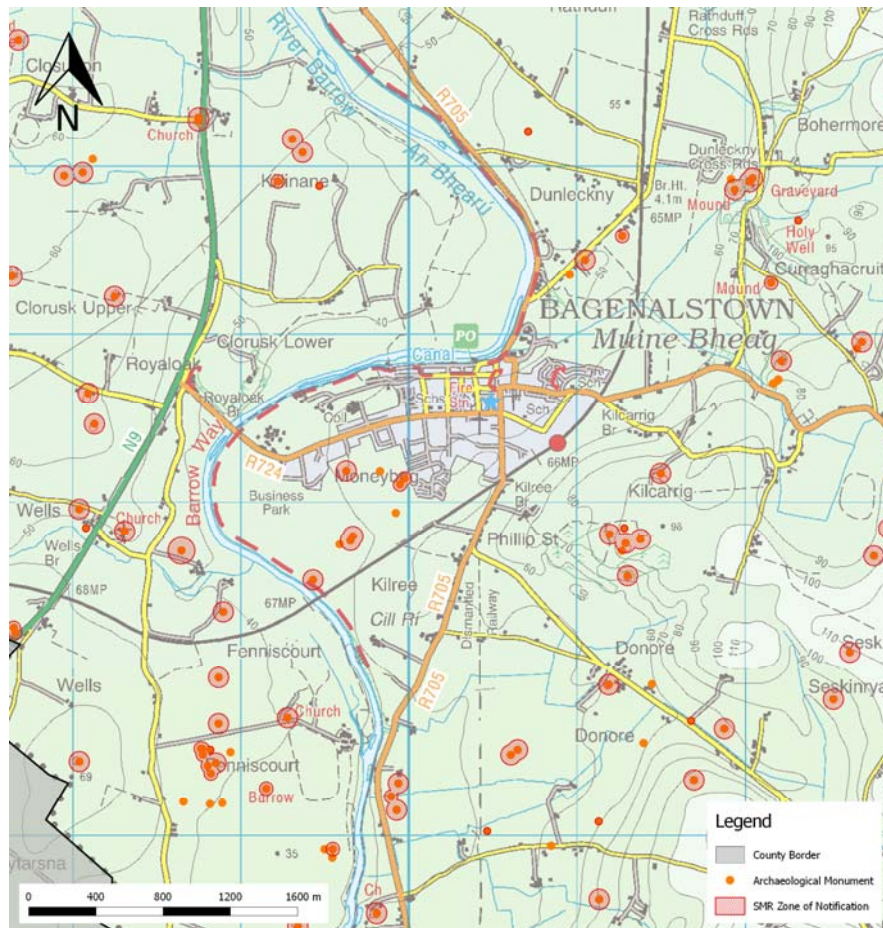


Figure 3.5 Archaeological Heritage

Source: Carlow County Council (2016)

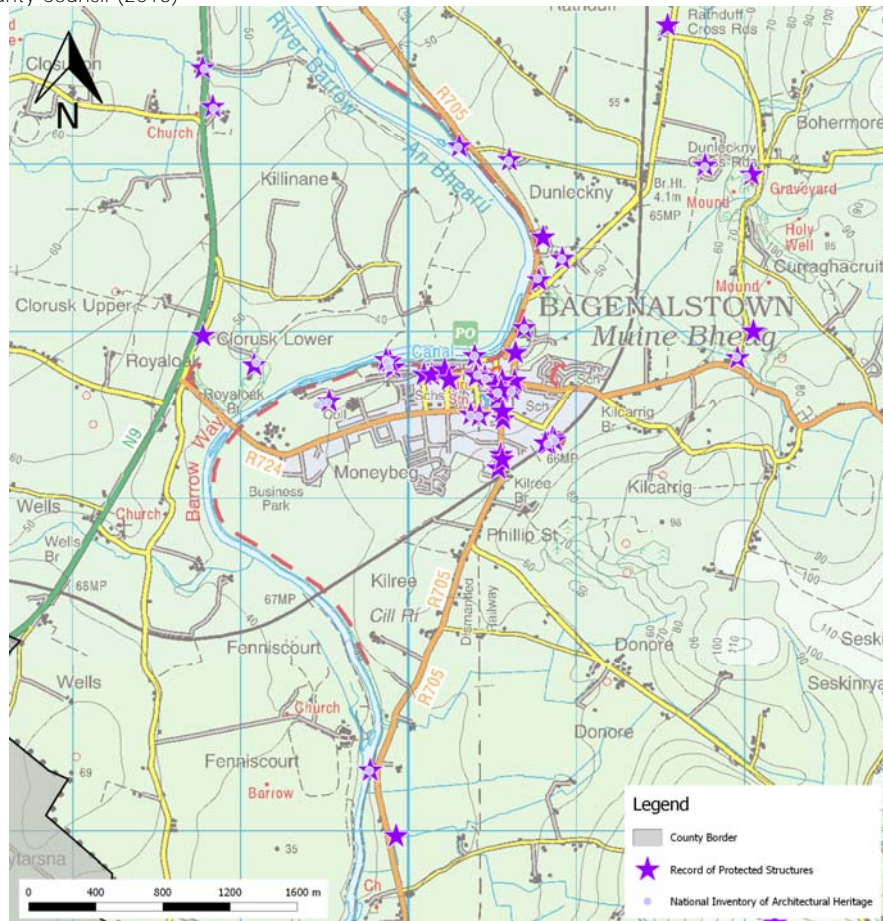


Figure 3.6 Architectural Heritage

Source: Carlow County Council (2016)

3.10 Landscape

A Landscape Character Assessment (LCA) is a study of a given landscape to determine its 'character'. Landscape character is the combination of physical, as well as, perceived aspects of the landscape.

The Carlow LCA was produced as part of the Carlow County Development Plan 2015-2021. The LCA divides the County into Landscape Character Areas i.e. unique, geographically specific areas of a particular landscape type.

The aim of the County Carlow LCA is to provide a tool for decision making regarding development control and to influence landscape policy at local level. In considering landscape character in the area, the Council acknowledges the importance of taking into account adjoining landscape character, landscape features and designations, including those in adjoining counties.

There are five Principal Landscape Character Areas. Muine Bheag / Royal Oak falls within the Central Lowlands Landscape Character Area.

Components of the landscape within and adjacent to Muine Bheag / Royal Oak which contribute towards landscape character include the River Barrow, hedgerows and lines of trees.

Landscape sensitivity mapping was prepared for the Carlow LCA by according sensitivity rating to the existing adopted Principal Landscape Character Areas. These boundaries were based on extensive LCA fieldwork augmented by ensuring conformity with a number of 'mappable' and natural factors such as landcover, soils, geology and slope. A large portion of the built area in Muine Bheag is identified as having the least sensitivity rating, a rating of '1'. However, areas to the north and south of the Plan area adjacent to the River Barrow, have been attributed with a higher rating, a rating of '4'. Other lands to the east and west of the town are attributed with a sensitivity rating of '2'.

The Plan area itself does not contain protected scenic views or routes. However, there is a protected viewpoint to the north of the Plan area, which provides a view of the town from a point to the north of an entrance along the River Barrow.

3.11 Overlay of Environmental Sensitivities

In order to identify where most sensitivities within Muine Bheag/ Royal Oak occur, a number of the environmental sensitivities described above were weighted and mapped overlapping each other. Figure 3.7 provides an overlay of environmental sensitivities for the town.

It is emphasised that the occurrence of environmental sensitivities does not preclude development; rather it flags at a strategic level that the mitigation measures - which have already been integrated into the Plan - will need to be complied with in order to ensure that the implementation of the Plan contributes towards environmental protection.

Environmental sensitivities are indicated by colours which range from acute vulnerability (brown) extreme vulnerability (red) to high vulnerability (dark orange) to elevated vulnerability (light orange) to moderate vulnerability (yellow) to low vulnerability (green). Only low, moderate and elevated levels of vulnerability occur within and adjacent to the Plan area. Where the mapping shows a concentration of environmental sensitivities there is an increased likelihood that development will conflict with these sensitivities and cause environmental deterioration.

A weighting system applied through Geographical Information System (GIS) software was used in order to calculate the vulnerability of all areas in the town. Environmental considerations are given equal weight as follows, with a slight differentiation is made in certain layers:

- Ecological designations (candidate Special Areas of Conservation - 10 points - and proposed Natural Heritage Areas - 5 points);

- Cultural heritage (Entries to the Record of Protected Structures and entries to the Record Monuments and Places - 10 points);
- Landscape character areas of very high (10 points) and high value (5 points);
- Scenic routes and views (10 points);
- Sensitive landcover categories (Inland marshes and water bodies - 10 points);
- Surface and groundwaters with bad and poor (10 points) and moderate, good and high (5 points) status;
- Aquifers which are highly (5 points) or extremely (10 points) vulnerable to pollution; and
- Indicative flood zones A (10 points) and B (5 points) from the Strategic Flood Risk Assessment.

The most sensitive areas within Muine Bheag / Royal Oak are located along the watercourses through the Plan area (on account of the sensitivity of the River Barrow, fluvial flood risk and Natura 2000 site designations). Sensitivity ratings vary along the watercourse from medium to extreme.

Other sensitive areas are also identified within the town (these largely relate to cultural heritage designations), however, these are of a comparatively lower rating in comparison to the sensitivities along the river.

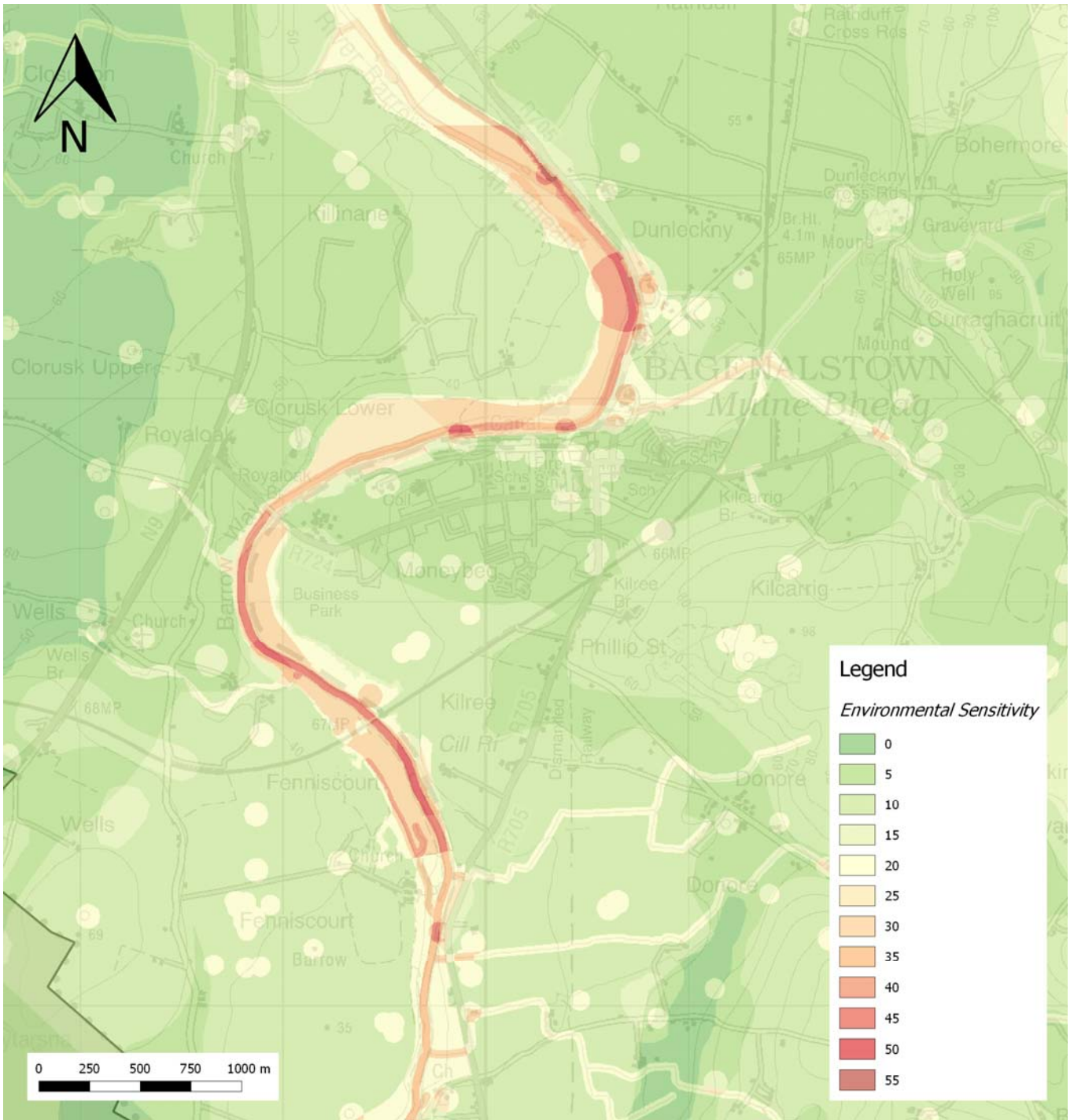


Figure 3.8 Overlay of Environmental Sensitivities

Source: CAAS (2016)

3.12 Appropriate Assessment and Strategic Flood Risk Assessment

A Stage 2 Appropriate Assessment (AA) and a Strategic Flood Risk Assessment (SFRA) have both been undertaken alongside the preparation of the Plan.

The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC). The requirement for SFRA is provided under 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (DEHLG and OPW, 2009).

The AA concluded that the Plan will not affect the integrity of the Natura 2000 network³ and the SFRA has facilitated the integration of flood risk management considerations into the Plan.

The preparation of the Plan, SEA, AA and SFRA has taken place concurrently and the findings of the AA and SFRA have informed both the Plan and the SEA. All recommendations made by the AA and SEA were integrated into the Plan.

3.13 Strategic Environmental Objectives

Strategic Environmental Objectives (SEOs) are methodological measures against which the environmental effects of the Plan can be tested. If complied with in full, SEOs would result in an environmentally neutral impact from implementation of the Plan. The SEOs are set out under a range of topics and are used as standards against which the provisions of the Plan can be evaluated in order to help identify areas in which potential adverse impacts may occur. SEOs are distinct from the objectives of the Plan and are developed from international and national policies that generally govern environmental protection objectives. Such policies include those of various European Directives which have been transposed into Irish law and which are intended to be implemented within the Plan area.

³ Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:

- (a) no alternative solution available;
- (b) imperative reasons of overriding public interest for the plan to proceed; and
- (c) adequate compensatory measures in place.

Table 3.3 Strategic Environmental Objectives

SEO Code	SEO
B1	To ensure compliance with the Habitats and Birds Directives with regard to the protection of Natura 2000 Sites and Annexed habitats and species ⁴
B2	To ensure compliance with Article 10 of the Habitats Directive with regard to the management of features of the landscape which - by virtue of their linear and continuous structure or their function act as stepping stones - are of significant importance for wild fauna and flora and/or essential for the migration, dispersal and genetic exchange of wild species
B3	To avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites and to ensure compliance with the Wildlife Acts 1976-2010 with regard to the protection of species listed on Schedule 5 of the principal Act
PHH1	To protect populations and human health from exposure to incompatible landuses
S1	To avoid damage to the hydrogeological and ecological function of the soil resource
W1	To maintain and improve, where possible, the quality and status of surface waters
W2	To prevent pollution and contamination of ground water
W3	To comply as appropriate with the provisions of the Flood Risk Management Guidelines
M1	To serve new development with adequate and appropriate waste water treatment
M2	To serve new development with adequate drinking water that is both wholesome and clean
M3	To reduce waste volumes, minimise waste to landfill and increase recycling and reuse
C1	To reduce travel related emissions to air and to encourage modal change from car to more sustainable forms of transport
CH1	To protect archaeological heritage including entries to the Record of Monuments and Places and/or their context
CH2	To protect architectural heritage including entries to the Record of Protected Structures and their context
L1	To avoid significant adverse impacts on the landscape

⁴ 'Annexed habitats and species' refer to those listed under Annex I, II & IV of the EU Habitats Directive and Annex I of the EU Birds Directive.

Section 4 Alternatives

4.1 Introduction

The SEA Directive requires that reasonable alternatives (taking into account the objectives and the geographical scope of the plan or programme) are identified, described and evaluated for their likely significant effects on the environment.

The description of the environmental baseline (both maps and text) and Strategic Environmental Objectives (SEOs) are used in the evaluation of alternative development strategies.

4.2 Description of Alternatives

Carlow County Council in preparing the Local Area Plan 2017-2023 developed three Development Strategy Options for Muine Bheag/ Royal Oak. These are detailed on Table 4.1 below and mapped on Figure 4.1, Figure 4.2 and Figure 4.3.

Table 4.1 Description of Alternative Development Strategies

	Alternative Development Strategy 1	Alternative Development Strategy 2	Alternative Development Strategy 3
Summary	Development Scenario 1: A general continuation in accordance with the development objectives of the current 2010 – 2016 Plan.	Development Scenario 2: To provide high density residential, retail and employment development on vacant and key opportunity sites in the town only.	Development Scenario 3: To consolidate and strengthen the town centre and provide for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner.

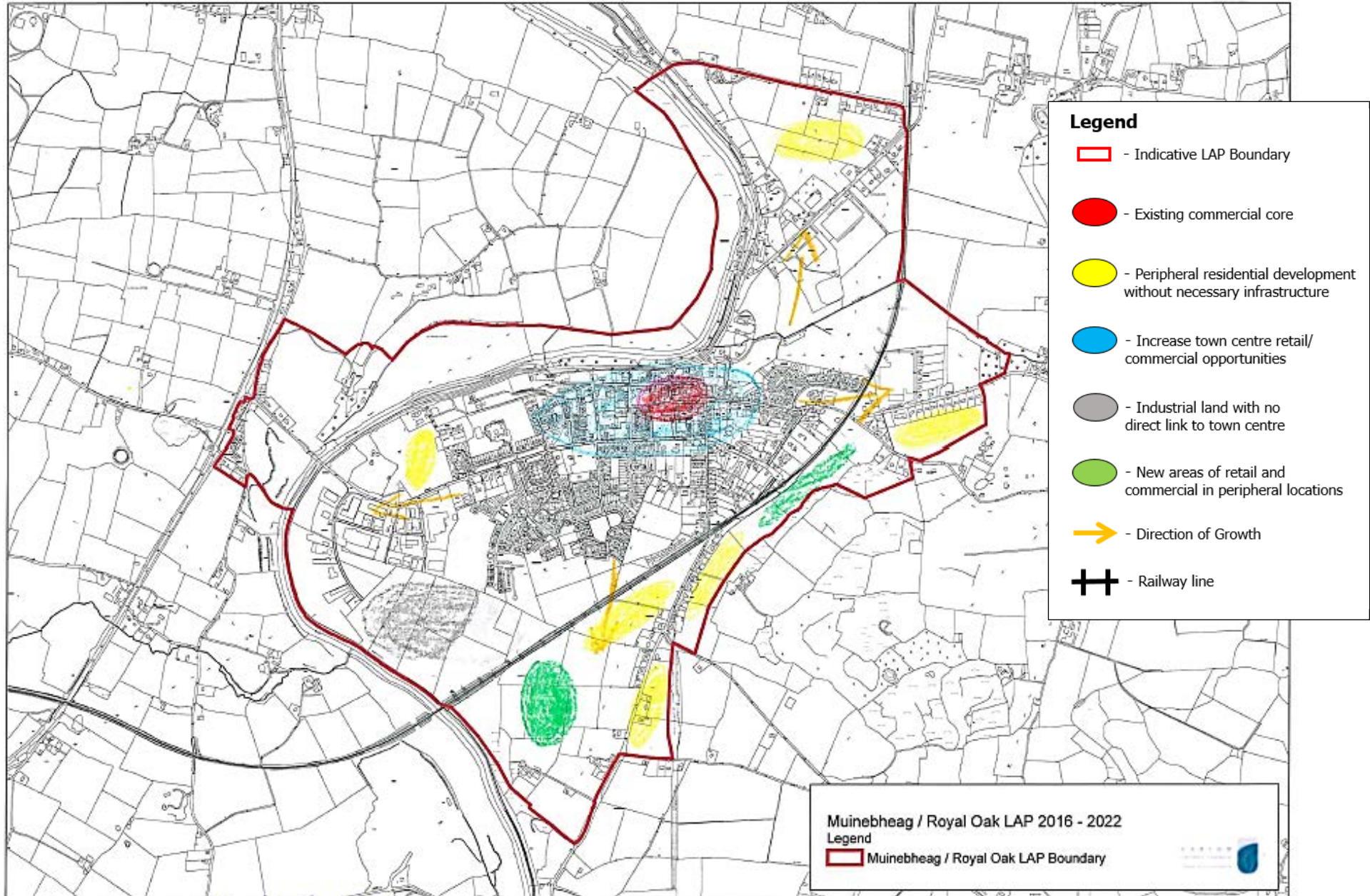


Figure 4.1 Alternative Development Strategy 1

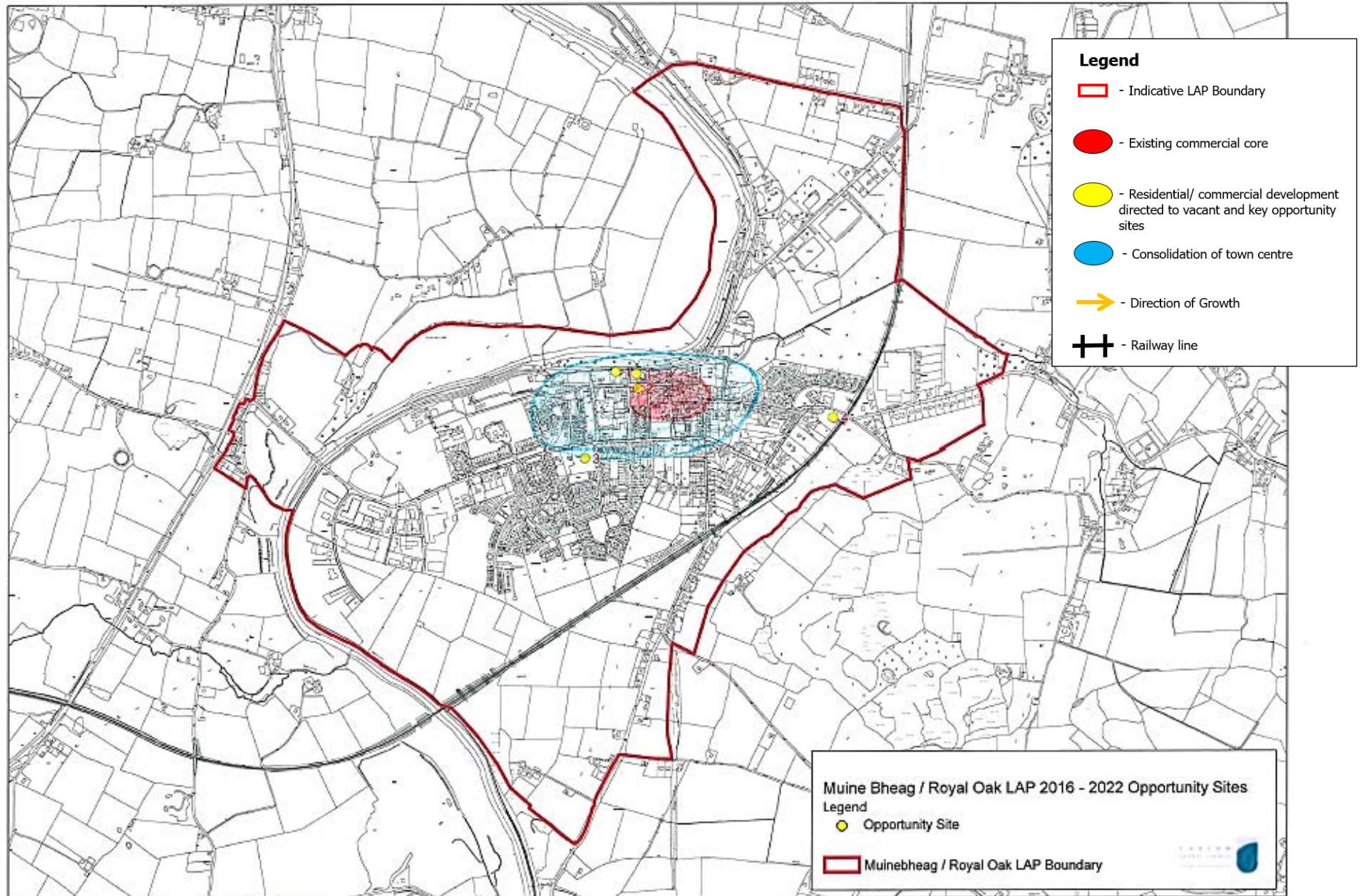


Figure 4.2 Alternative Development Strategy 2

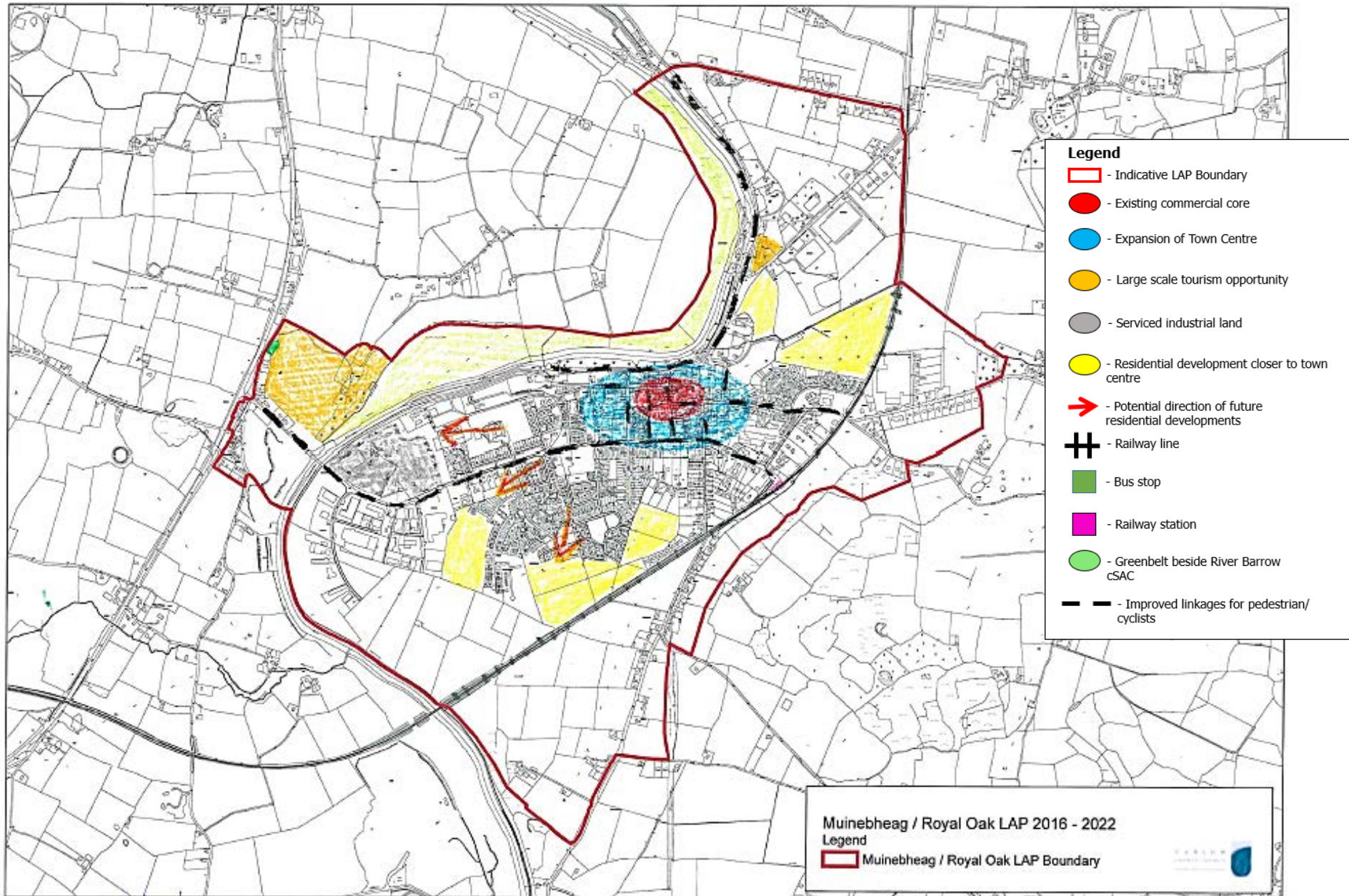


Figure 4.3 Alternative Development Strategy 3

4.3 Evaluation of Alternatives

A number of potentially significant adverse environmental effects that are common to all alternatives and are described on the Table below.

Environmental Component	Likely Significant Effect, if unmitigated
Biodiversity and Flora and Fauna	<ul style="list-style-type: none"> o Loss of biodiversity with regard to designated biodiversity and flora and fauna (including Natura 2000 Sites, proposed Natural Heritage Areas and Annexed habitats and species), ecological connectivity and stepping stones and non-designated biodiversity and flora and fauna (see baseline Section 4.2)
Population and Human Health	<ul style="list-style-type: none"> o Spatially concentrated deterioration in human health
Soil (especially soil on greenfield lands)	<ul style="list-style-type: none"> o Adverse impacts on the hydrogeological and ecological function of the soil resource
Water (including the River Barrow and its tributaries and underlying groundwater)	<ul style="list-style-type: none"> o Adverse impacts upon the status of water bodies arising from changes in quality, flow and/or morphology o Increase in flood risk
Material Assets (it is the function of Irish Water to provide for water services needs)	<ul style="list-style-type: none"> o Failure to provide adequate and appropriate waste water treatment o Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean o Increases in waste levels
Air and Climatic Factors	<ul style="list-style-type: none"> o Failure to contribute towards sustainable transport and associated impacts (energy usage and emissions to air including noise and greenhouse gases)
Cultural Heritage	<ul style="list-style-type: none"> o Effects on entries to the Record of Monuments and Places and other archaeological heritage o Effects on entries to the Records of Protected Structures and other architectural heritage
Landscape	<ul style="list-style-type: none"> o Occurrence of adverse visual impacts

Table 4.2 Potentially Significant Adverse Environmental Effects common to all alternatives

Alternative Development Strategy 1 would contribute towards efforts to improve sustainable mobility (and associated effects on energy, air, noise and human health) by improving existing pedestrian access, however: such a contribution would be outweighed by the overall direction of the Strategy which prefers an expansion of peripheral areas for residential, mixed use, industrial and commercial uses, some of which have no direct link to the town centre.

The extent of development provided for would have to be served by infrastructure and could affect flood risk.

By providing significant expansion of suburbs of the town and peripheral areas, this alternative would be likely to result in the greatest number and extent of residual adverse effects across the widest area. Such effects include loss of ecology (including non-designated ecology and ecological corridors and stepping-stones), the sealing of greenfield soils and threats to the status of waters. This Scenario would provide for various uses on greenfield lands in the peripheries of the plan area, adversely impacting upon the consolidation of the town and sustainable mobility. The visual appearance of peripheral greenfield areas within the LAP area would be most likely to change under this scenario.

By encouraging new retail/commercial development on vacant and brownfield sites, this alternative would somewhat contribute towards the protection and management of the environment elsewhere.

Alternative Development Strategy 2 directs new development to vacant and infill opportunities only. By consolidating the existing town centre and improving pedestrian links, this alternative would

contribute towards efforts to both improve sustainable mobility (and associated effects on energy, air, noise and human health), protect cultural heritage and improve the residential fabric within the town centre.

However, by restricting new development to high density to vacant and a number of key opportunity sites, this alternative would be likely to result in an increase of applications for development outside the LAP area thereby weakening the town centre. It would be a challenge to serve peripheral areas with the necessary infrastructure.

The increase in applications for development within the periphery to the LAP area would provide for the greatest number and extent of residual adverse effects beyond the LAP area as a result of greenfield development. Such effects include loss of ecology (including non-designated ecology and ecological corridors and stepping-stones), the sealing of greenfield soils and threats to the status of waters and changes to the visual appearance of lands

By encouraging an extent of development within the town centre, this alternative would somewhat contribute towards the protection and management of the environment elsewhere, however the higher densities of development would have the potential to adversely impact upon the character of the town including cultural heritage and its context.

Alternative Development Strategy 3 consolidates and strengthens the town centre and provides for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner.

Consolidation of the town centre, phasing of residential development, improvement of pedestrian links and public spaces are all provided for.

By providing for development in this manner, this alternative would maximise sustainable mobility (and associated effects on energy, air, noise and human health) and protect cultural heritage within the town centre. Overall, new development would be best served by existing and planned infrastructure under this scenario. By limiting development within the Plan area and on the periphery of the development envelope, this alternative would benefit the protection of various environmental components (e.g. ecology, water, visual sensitivities etc.) beyond the LAP area that could otherwise be threatened.

Potential conflicts with all environmental components (detailed under Table 4.2) would still have to be mitigated to ensure that significant adverse residual environmental effects do not occur.

This scenario provides for a greenbelt along the River Barrow that would contribute towards the protection of the status of the river including associated biodiversity.

Development of the strategic employment lands at Royal Oak in the west of the town would have the potential to adversely impact upon architectural and natural heritage.

Table 4.3 below provides a comparative evaluation of the environmental effects of alternative development strategies against Strategic Environmental Objectives. This is supported by the narrative above and by effects that are common to all alternatives detailed on Table 4.2.

Table 4.3 Comparative Evaluation of Alternative Development Strategies

Alternative Development Strategy	<u>Likely to Improve</u> status of SEOs <u>to a greater degree</u>	<u>Likely to Improve</u> status of SEOs <u>to a lesser degree</u>	<u>Least Potential Conflict</u> with status of SEOs - <u>likely to be mitigated to greater degree.</u> significant adverse effects less likely	<u>More Potential Conflict</u> with status of SEOs - <u>likely to be mitigated to an intermediate degree.</u> significant adverse effects more likely	Probable <u>Conflict</u> with status of SEOs- unlikely to be mitigated	<u>No significant interaction</u> with status of SEOs
Alternative Development Strategy 1		✓		✓		
Alternative Development Strategy 2		✓		✓		
Alternative Development Strategy 3	✓		✓			

4.3.1 The Selected Alternative Development Strategy for the Plan

The Alternative Development Strategy that was selected and developed for the Plan was Strategy 3 - to consolidate and strengthen the town centre and provide for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner. The Plan includes Phase 1 Residential and Enterprise and Employment development adjacent and to the east of the train line. Potential adverse effects will be mitigated by various provisions that have been integrated into the Draft Plan (see Section 9).

The Plan has been developed by the Planning Team and adopted by the Council having regard to both:

1. The environmental effects which were identified by the SEA and are detailed above; and
2. Planning - including social and economic - effects that also were considered by the Council.

The Land Use Zoning map from the Plan that evolved from and which is consistent with Alternative Development Strategy 3 is shown on Figure 4.4 overleaf.

Also shown on this map is the constrained land use zoning objective (Policy HR 12B) for the River Barrow and River Nore cSAC. This Policy has been integrated into the Plan as there are a number of overlaps between the area which is designated as cSAC and existing uses. Policy HR 12B requires applications for development within the constrained land use zoning objective for the Natura 2000 site (Map 13 – as shown on Figure 4.4 overleaf) to undergo Appropriate Assessment and demonstrate that the proposal will not give rise to any effect on the Natura 2000 site in view of its qualification features and conservation objectives.

Figure 4.5 provides a version of the Land Use Zoning Map with flood information overlain. Please refer to Section 3.6 of this report for information on Strategic Flood Risk Assessment that was undertaken for the Plan.

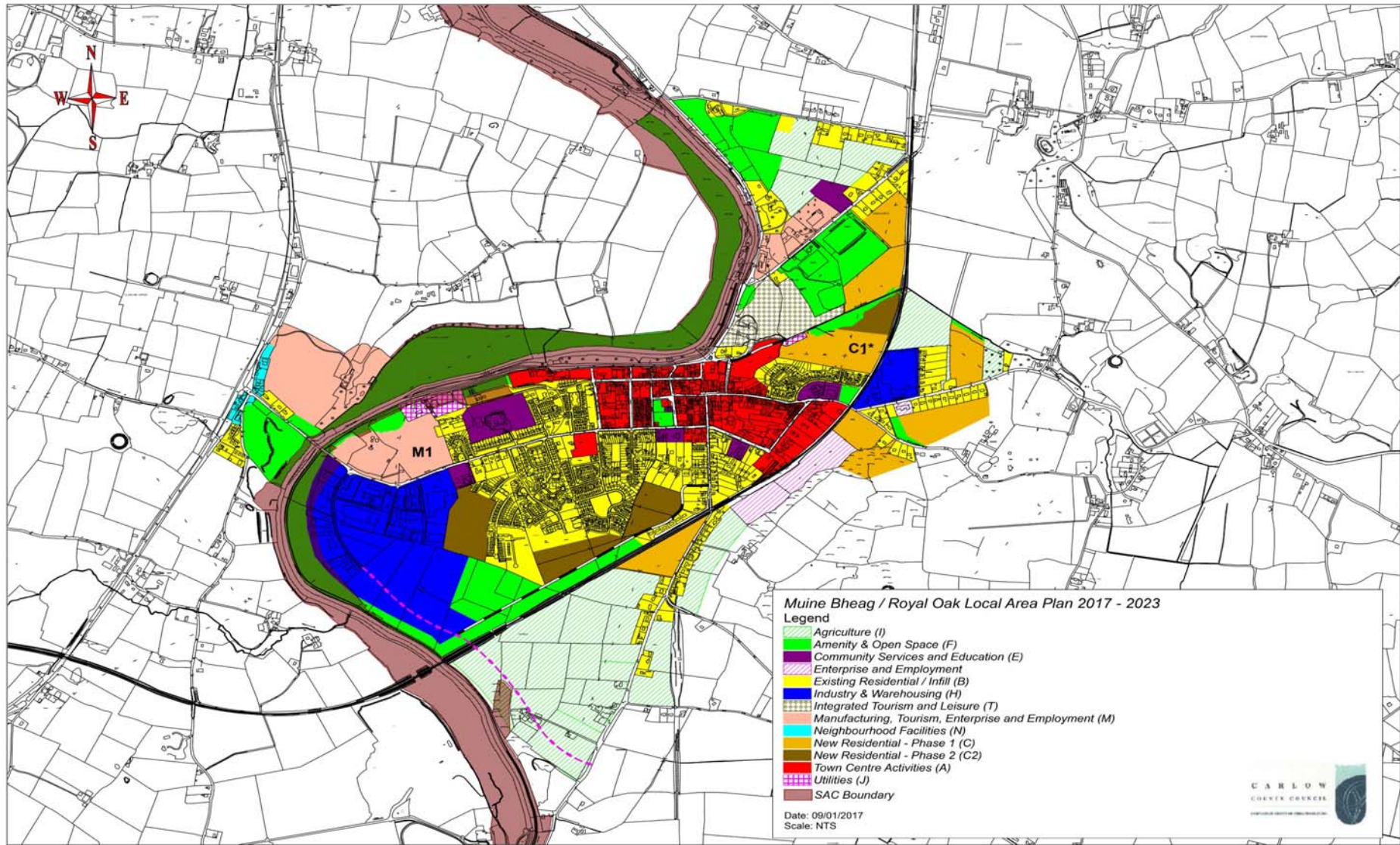


Figure 4.4 The Plan Land Use Zoning Map

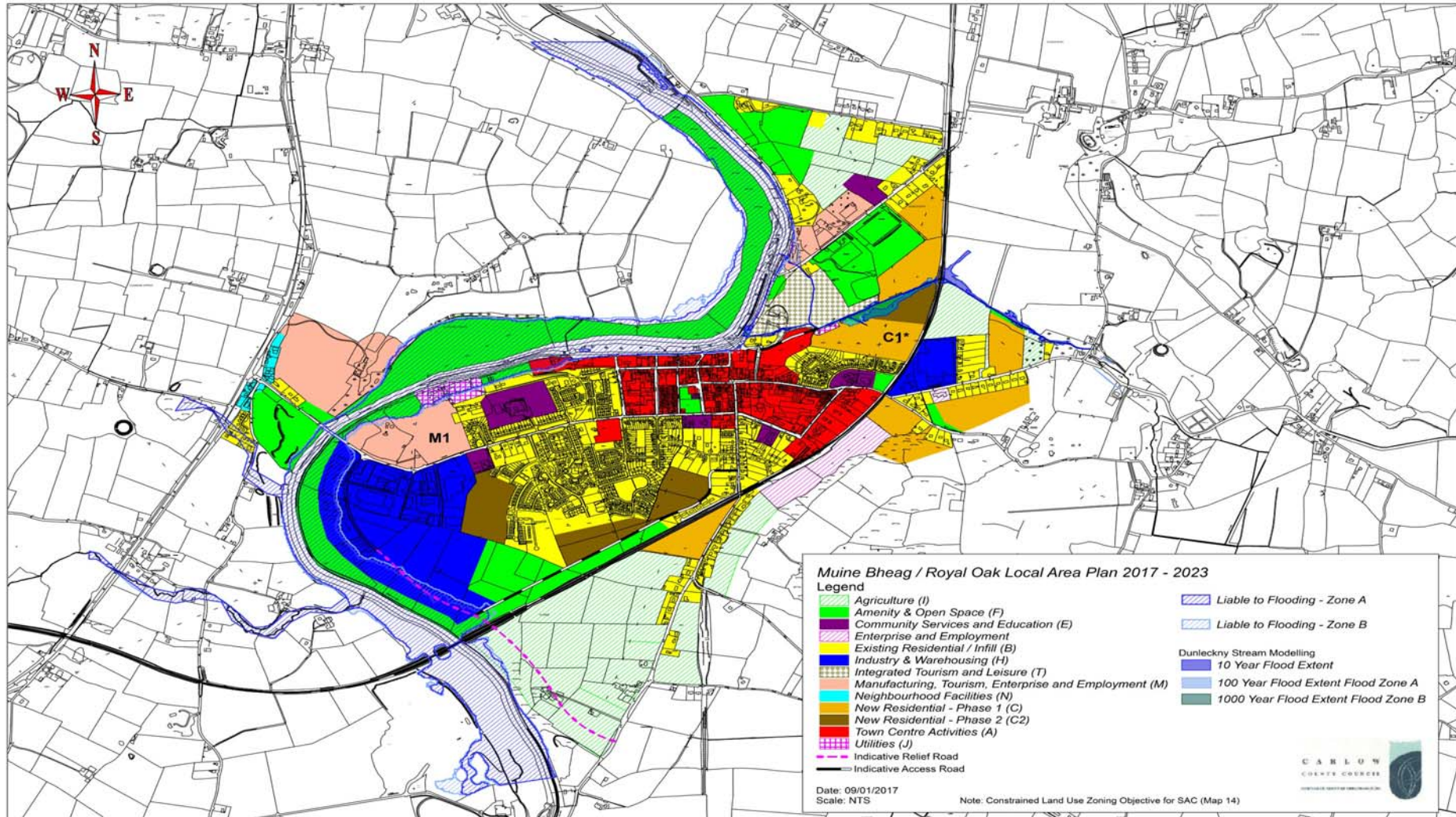


Figure 4.5 Local Area Plan Land Use Zoning Map (with flooding information)

Section 5 Evaluation of Plan Provisions

5.1 Overall Findings

The overall findings are that:

- The Council have integrated recommendations arising from the SEA, Appropriate Assessment (AA) and Strategic Flood Risk Assessment (SFRA) processes into the Plan, facilitating compliance of the Plan with various European and National legislation and Guidelines relating to the environment and sustainable development;
- Plan provisions would be likely to result in significant positive effects upon the protection and management of the environment (including all environmental components; biodiversity, fauna, flora, population, human health, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape); and
- Some Plan provisions would have the potential to result in significant negative environmental effects (these will be described in the reports) however these effects will be mitigated by the mitigation measures that have been integrated into the Plan (see Section 6).

5.2 Potential Adverse Effects and their Determination

Environmental impacts which occur, if any, will be determined by the nature and extent of multiple or individual projects and site-specific environmental factors. The potentially significant adverse environmental effects arising from implementation of the Plan are detailed on Table 4.2.

5.3 Residual Adverse Effects

Residual adverse effects likely to occur - considering the extent of detail provided by the Plan and assuming that all mitigation measures are complied with by development - are identified for each of the environmental components on Table 5.1 below.

Table 5.1 Residual Adverse Effects

Environmental Component	Residual Adverse Effects
Biodiversity and Flora and Fauna	Loss of an extent of non-protected habitats arising from the replacement of semi-natural land covers with artificial surfaces
Population and Human Health	Flood related risks remain due to uncertainty with regard to extreme weather events
Soil	Loss of an extent of soil function arising from the replacement of semi-natural land covers with artificial surfaces
Water	Flood related risks remain due to uncertainty with regard to extreme weather events
Air and Climatic Factors	None
Material Assets	Residual wastes to be disposed of
Architectural Heritage	Potential alteration to the context and setting of architectural heritage (Protected Structures) however these will occur in compliance with legislation
Archaeological Heritage	Potential alteration to the context and setting of archaeological heritage (Recorded Monuments) however this will occur in compliance with legislation Potential loss of unknown archaeology however this loss will be mitigated by measures integrated into the Plan
Landscape Designations	The landscapes within and surrounding the town will change overtime as a result of natural changes in vegetation cover combined with new developments. The Plan contributes towards the protection of landscape designations.

Section 6 Mitigation and Monitoring Measures

6.1 Mitigation

Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the Plan.

Various environmental sensitivities and issues have been communicated to the Council through the SEA, AA and SFRA processes. By integrating related recommendations into the Plan, the Council have ensured that both the beneficial environmental effects of implementing the Plan have been and will be maximised and that potential adverse effects have been and will be avoided, reduced or offset.

Recommendations made by the SEA, AA and SFRA processes have been integrated into the Plan.

Table 6.1 provides a summary table outlining how likely significant effects (if unmitigated) are linked to relevant mitigation measure(s) - which have been integrated into the Plan - and indicator(s) which will be used for monitoring.

6.2 Monitoring

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored. This section details the measures that will be used in order to monitor the likely significant effects of implementing the Plan.

Monitoring can enable, at an early stage, the identification of unforeseen adverse effects and the undertaking of appropriate remedial action.

Monitoring is based around indicators that allow quantitative measures of trends and progress over time relating to the Strategic Environmental Objectives (see Section 3.13).

Table 6.1 provides a summary table outlining how likely significant effects (if unmitigated) are linked to relevant mitigation measure(s) - which have been integrated into the Plan - and indicator(s) which will be used for monitoring.

Table 6.1 SEA Summary Table: Likely Significant Effects, Mitigation Measures and Indicators for Monitoring

Likely Significant Effect, if unmitigated	Mitigation Measure Reference(s)	Primary Indicator(s) for Monitoring
Loss of biodiversity with regard to designated biodiversity and flora and fauna, ecological connectivity and stepping stones and non-designated biodiversity and flora and fauna	Incorporated into Plan through policies HR9 and HR10, HR11, HR12, HR17, HP 21, HR23, HR14, FLO4, HR12B, TP7, LU8, SM4 and RC 2 and Objective SMO3	B1: Conservation status of habitats and species as assessed under Article 17 of the Habitats Directive B2: Percentage loss of functional connectivity without remediation resulting from development provided for by the Plan B3i: Number of significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Plan B3ii: Number of significant impacts on the protection of species listed on Schedule 5 of the Wildlife Act 1976
Spatially concentrated deterioration in human health	Objective PO1 and PO2.	PHH1: Occurrence (any) of a spatially concentrated deterioration in human health arising from environmental factors resulting from development provided for by the Plan, as identified by the Health Service Executive and Environmental Protection Agency
Adverse impacts on the hydrogeological and ecological function of the soil resource	Policies P5	S1: Soil extent and hydraulic connectivity
Adverse impacts upon the status and quality of water bodies	Policy WSP1 and WSP2.	W1: Classification of Overall Status (comprised of ecological and chemical status) under the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009) W2: Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC
Increase in flood risk	Policies FL1, FL2, FL4 and Objective FLO2.	W3: Number of incompatible developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk
The need to provide adequate and appropriate water services (it is the function of Irish Water to provide for such needs)	Policies WSP3, WW1, WSP6, WW2 and Objectives WSO1, WWO1, WSO1, WSO4, WSO5.	M1: Number of new developments granted permission which can be adequately and appropriately served with waste water treatment over the lifetime of the Plan M2: Number of non-compliances with the 48 parameters identified in the European Communities (Drinking Water) Regulations (No. 2) 2007 which present a potential danger to human health as a result of implementing the Plan
Failure to contribute towards sustainable transport and associated impacts (energy usage and emissions to air including noise and greenhouse gases)	Overall development approach for the Plan, consolidating the town and providing for growth within and adjacent to the town centre. Also Policy P1, Policy CCP1 and Objective CCO1	C1: To reduce travel related emissions to air and to encourage modal change from car to more sustainable forms of transport
Increases in waste levels	Policy WMP1, WMP2, WMP5.	M3i: Total collected and brought household waste M3ii: Packaging recovered (t) by self-complying packagers
Potential effects on protected and unknown archaeology and protected architecture	Policy HR1, HR2, HR3 and HR5.	CH1: Percentage of entries to the Record of Monuments and Places - and the context these entries within the surrounding landscape where relevant - protected from adverse effects resulting from development which is granted permission under the Plan CH2: Percentage of entries to the Record of Protected Structures and their context protected from adverse effects resulting from development which is granted permission under the Plan
Occurrence of adverse visual impacts	Policy L1	L1: Number of complaints received from statutory consultees regarding avoidable impacts on the landscape resulting from development which is granted permission under the Plan

SEA ENVIRONMENTAL REPORT

FOR THE

MUINE BHEAG / ROYAL OAK LOCAL AREA PLAN 2017-2023

for: Carlow County Council

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Carlow
County Carlow



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JANUARY 2017

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List of Abbreviations

AA	Appropriate Assessment
CSO	Central Statistics Office
DAHG	Department of Arts, Heritage and the Gaeltacht
DCENR	Department of Communications, Energy and Natural Resources
DEHLG	Department of the Environment, Heritage and Local Government
DECLG	Department of the Environment, Community and Local Government
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
EU	European Union
GSI	Geological Survey of Ireland
NHA	Natural Heritage Area
NIAH	National Inventory of Architectural Heritage
RBD	River Basin District
RMP	Record of Monuments and Places
RPS	Record of Protected Structures
RPGs	Regional Planning Guidelines
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SEO	Strategic Environmental Objective
SI No.	Statutory Instrument Number
SPA	Special Protection Area
WFD	Water Framework Directive

Glossary

Appropriate Assessment

The obligation to undertake Appropriate Assessment derives from Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC. AA is a focused and detailed impact assessment of the implications of a strategic action or project, alone and in combination with other strategic actions and projects, on the integrity of a Natura 2000 site in view of its conservation objectives.

Biodiversity and Flora and Fauna

Biodiversity is the variability among living organisms from all sources including inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems' (United Nations Convention on Biological Diversity 1992).

Flora is all of the plants found in a given area.

Fauna is all of the animals found in a given area.

Biotic Index Values (Q Values)

The Biotic Index Values, or Q values, are assigned to rivers in accordance with biological monitoring of surface waters - low Q ratings, as low as Q1, are indicative of low biodiversity and polluted waters, and high Q ratings, as high as Q5, are indicative of high biodiversity and unpolluted waters. Good status as defined by the Water Framework Directive equates to approximately Q4 in the national scheme of biological classification of rivers as set out by the Environmental Protection Agency.

Environmental Problems

Annex I of Directive 2001/42/EC of the European Parliament and of the Council of Ministers, of 27th June 2001, on the assessment of the effects of certain Plans and programmes on the environment (the Strategic Environmental Assessment Directive) requires that information is provided on 'any existing environmental problems which are relevant to the plan or programme', thus, helping to ensure that the proposed strategic action does not make existing environmental problems worse.

Environmental problems arise where there is a conflict between current environmental conditions and ideal targets. If environmental problems are identified at the outset they can help focus attention on important issues and geographical areas where environmental effects of the plan or programme may be likely.

Environmental Vectors

Environmental vectors are environmental components, such as air, water or soil, through which contaminants or pollutants, which have the potential to cause harm, can be transported so that they come into contact with human beings.

Mitigate

To make or become less severe or harsh.

Mitigation Measures

Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing a human action, be it a plan, programme or project. Mitigation involves ameliorating significant negative effects. Where there are significant negative effects, consideration should be given in the first instance to preventing such effects or, where this is not possible, to lessening or offsetting those effects. Mitigation measures can be roughly divided into those that: avoid effects; reduce the magnitude or extent, probability and/or severity of effects; repair effects after they have occurred; and compensate for effects, balancing out negative impacts with other positive ones.

Protected Structure

Protected Structure is the term used in the Planning and Development Act 2000 as amended to define a structure included by a planning authority in its Record of Protected Structures. Such a structure shall not be altered or demolished in whole or part without obtaining planning permission or confirmation from the planning authority that the part of the structure to be altered is not protected.

Recorded Monument

A monument included in the list and marked on the map that comprises the Record of Monuments and Places that is set out County by County under Section 12 of the National Monuments (Amendment) Act, 1994 by the Archaeological Survey of Ireland. The definition includes Zones of Archaeological Potential in towns and all other monuments of archaeological interest, which have so far been identified. Any works at or in relation to a recorded monument requires two months' notice to the former Department of the Environment, Heritage and Local Government (now Department of Arts, Heritage and the Gaeltacht) under section 12 of the National Monuments (Amendment) Act, 1994.

Scoping

Scoping is the process of determining what issues are to be addressed, and setting out a methodology in which to address them in a structured manner appropriate to the plan or programme. Scoping is carried out in consultation with appropriate environmental authorities.

Strategic Actions

Strategic actions include: Policies/Strategies, which may be considered as inspiration and guidance for action and which set the framework for Plans and programmes; Plans, sets of co-ordinated and timed objectives for the implementation of the policy; and Programmes, sets of projects in a particular area.

Strategic Environmental Assessment (SEA)

Strategic Environmental Assessment (SEA) is the formal, systematic evaluation of the likely significant environmental effects of implementing a plan or programme before a decision is made to adopt it.

Strategic Environmental Objective (SEO)

Strategic Environmental Objectives (SEOs) are methodological measures developed from policies which generally govern environmental protection objectives established at international, Community or Member State level and are used as standards against which the provisions of the Plan and the alternatives can be evaluated in order to help identify which provisions would be likely to result in significant environmental effects and where such effects would be likely to occur, if - in the case of adverse effects - unmitigated.

Section 1 SEA Introduction and Background

1.1 Introduction and Terms of Reference

This is the Strategic Environmental Assessment (SEA) Environmental Report for the Muine Bheag / Royal Oak Local Area Plan 2017-2023. It has been undertaken by CAAS Ltd. on behalf of Carlow County Council.

The purpose of this report is to provide a clear understanding of the likely environmental consequences of decisions regarding the adoption and implementation of the Plan. The SEA is carried out in order to comply with the provisions of the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No. 436 of 2004) as amended. This report should be read in conjunction with the Local Area Plan.

1.2 SEA Definition

Environmental assessment is a procedure that ensures that the environmental implications of decisions are taken into account before such decisions are made. Environmental Impact Assessment, or EIA, is generally used for describing the process of environmental assessment for individual projects, while Strategic Environmental Assessment, or SEA, is the term that has been given to the environmental assessment of plans and programmes, which help determine the nature and location of individual projects taking place. SEA is a systematic process of predicting and evaluating the likely significant environmental effects of implementing a proposed plan or programme in order to ensure that these effects are adequately addressed at the earliest appropriate stages of decision-making in tandem with economic, social and other considerations.

1.3 SEA Directive and its transposition into Irish Law

Directive 2001/42/EC of the European Parliament and of the Council of Ministers, of 27th June 2001, on the Assessment of the Effects of Certain Plans and Programmes on the

Environment, referred to hereafter as the SEA Directive, introduced the requirement that SEA be carried out on plans and programmes which are prepared for a number of sectors, including land use planning.

The SEA Directive was transposed into Irish Law through the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (Statutory Instrument Number (SI No. 435 of 2004) and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No. 436 of 2004). Both sets of Regulations became operational on 21st July 2004. The Regulations have been amended by the European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011 (SI No. 200 of 2011) and the Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations 2011 (SI No. 201 of 2011).

1.4 Implications for the Local Area Plan and the Planning Authority

Having considered the review and preparation of the Muine Bheag /Royal Oak Local Area Plan under Article 8 (14A) of the Planning and Development (SEA) Regulations (as amended), Carlow County Council, based on available information on both the expected content of the Plan and the existing environment, determined that the Plan would be likely, if unmitigated, to have significant effects on the environment¹.

Furthermore, a Stage 2 Appropriate Assessment (AA) under the Habitats Directive has been undertaken on the LAP. The SEA Directive requires that SEA is undertaken where Stage 2 AA is being undertaken on plans, programmes or variations to these.

It therefore was determined that SEA was required to be undertaken on the Plan.

The findings of the SEA are expressed in the Environmental Report. This report has been altered to take account of both: recommendations contained in submissions; and changes that may be made to the Plan on foot of submissions. Elected Members of Carlow County Council have taken into account the findings of this report and other related SEA output during their consideration of the Draft Plan and before its adoption.

An SEA Statement summarising how environmental considerations have been integrated into the Plan is prepared at the end of the process.

¹ It was identified that mitigation needed to be integrated into the LAP in order to ensure the protection of the River Barrow and River Nore Valley candidate Special Area of Conservation (Site Code 002162). This cSAC is designated for a number of species, including freshwater pearl mussel, which are highly protected and sensitive. A submission was

made by the Department of Arts, Heritage and the Gaeltacht as part of the Plan preparation process that highlights the need to consider the protection of ecological sensitivities - including cSACs and protected species. Other issues for the Plan include those relating to wastewater treatment capacity and performance, water quality and flood risk.

Section 2 The Local Area Plan

2.1 Plan Format

The Local Area Plan (LAP) for Muine Bheag / Royal Oak consists of a Written Statement and a land use-zoning map. It comprises of 11 Chapters:

- Chapters 1-3 outline the context of the LAP and provide information on the historical development of Muine Bheag / Royal Oak, the existing profile of the town together with the vision and strategic objectives for the future development of the area.
- Chapters 4-11 address key development objectives including economic development, housing, infrastructure, community facilities, natural and built heritage, tourism, town centre and public realm principles.

Chapter 12 address development standards and zoning objectives.

2.2 Statutory Context

The LAP has been prepared in accordance with Sections 18 to 20 of the Planning and Development Act 2000, as amended. The Plan replaces the Muine Bheag / Royal Oak LAP 2010-2016.

LAPs are required to be consistent with the policies and objectives of the County Development Plan and its Core Strategy, as well as the Regional Planning Guidelines that apply to the area of the Plan.

The LAP should be read in conjunction with the Carlow County Development Plan 2015-2021, which sets out the overarching development strategy for the County.

Whereby any provisions of the LAP conflict with the provisions of the County Development Plan, the provisions of the LAP shall cease to have effect.

2.3 Vision for Muine Bheag / Royal Oak

Carlow County Council's Vision for the town is as follows:

To build on Muine Bheag / Royal Oaks unique strengths including its distinct character of built and natural heritage and to provide a focused approach to planning for future growth in a coherent, sustainable, spatial fashion. The Plan aims to achieve a more consolidated urban form that facilitates a sustainable economic base and creates sustainable and integrated communities while balancing future development with the conservation and enhancement of the town's natural and built environment.

2.4 Strategic Objectives for Muine Bheag / Royal Oak

The main Strategic Objectives for the town are as follows:

1. To create an attractive town with a compact urban form which contributes to the natural and built heritage amenities of the town and provides a vibrant and vital mixed-use environment.
2. To facilitate the creation of a sustainable vibrant and vital economy which maximises the unique attributes of the town.
3. To create a town of well-connected sustainable neighbourhoods and socially inclusive communities.

The Council is committed to delivering this vision of the town through working in partnership with the local community and local organisations, and through promoting the policies and objectives contained in the LAP, and future LAPs.

2.5 Relationship with other relevant Plans and Programmes

2.5.1 Introduction

The Plan sits within a hierarchy of strategic actions such as plans and programmes and is subject to a number of high-level environmental protection policies and objectives with which it must comply (including those detailed below and in Appendix 1, Section 4, Section 5 and Section 9 of this report).

The Plan may, in turn, guide lower level strategic actions. In this regard, Appendix 1 includes statutory provisions, plans, policies and strategies that set the context within which the Plan is framed and which have influenced the strategies and objectives of the Plan.

2.5.2 Regional Planning Guidelines for the South-East Region 2010-2022

Ireland was divided into eight regional forward planning regions, Dublin, Midlands, Mid East, Mid-West, South East, South West, West and Border, each with its own regional planning authority composed of Elected Members selected by the constituent local government councils. Regional planning authorities were required, under the Planning and Development (Regional Planning Guidelines) Regulations 2003 (SI No. 175 of 2003), to draw up Regional Planning Guidelines (RPGs), long term strategic planning frameworks, for their relevant region. Since 2015, three new regional assemblies (the Northern and Western, Southern and Eastern and Midland Regional Assemblies) undertake the work previously undertaken by the Regional Authorities, including the implementation of the Regional Planning Guidelines. Carlow County Council was part of the South-East Regional Authority and is now part of the Southern Regional Assembly.

County Carlow, including Muine Bheag / Royal Oak, is subject to the Regional Planning Guidelines for the South Eastern Region 2010-2022 that provide a framework for the long-term strategic development of the South-Eastern Region. The Guidelines do this through setting out goals, policies and objectives in relation to population targets, housing, infrastructure, economic development,

environment, amenities, social infrastructure and community development, ensuring the successful implementation of the NSS at regional, county and local level.

The RPGs have allocated a population target of 63,536 for County Carlow by 2022. This represents a population increase of 4,085 from the 2016 population target of 59,451. Applying an average allocation per annum, this amounts to a population of 680 per annum between 2016 and 2022. The allocation for Muine Bheag to 2022 is therefore calculated as 10.6% of the population target (72 pop / average household size (2.7) = 27 units with 75% over zoning = 47 additional units). Adding this to the 2021 housing target (275) gives a revised target of 322 housing units for Muine Bheag / Royal Oak for the plan period.

2.5.3 Carlow County Development Plan 2015-2021

The Carlow County Development Plan 2015-2021 sets out the strategic planning and sustainable development of County Carlow over its lifetime and is consistent with the Regional Planning Guidelines.

2.5.4 River Basin Management Plans

Local Authorities, including Carlow County Council, have prepared the South East River Basin Management Plan that is implemented in order to help protect and improve waters in the town and wider River Basin District. The Plan and associated Programme of Measures includes provisions to help ensure that water bodies in the districts meet the objectives of the Water Framework Directive.

2.5.5 Catchment Flood Risk Assessment and Management Studies

Catchment Flood Risk Assessment and Management (CFRAM) Studies are being undertaken for the South Eastern River Basin District by the Office of Public Works.

The study is focusing on areas known to have experienced flooding in the past and areas that may be subject to flooding in the future either due to development pressures or climate

change. The final output from the study will be a CFRAM Plan that is being finalised. The Plan will define the current and future flood risk in the River Basin District and set out how this risk can be managed.

Section 3 SEA Methodology

3.1 Introduction to the Iterative Approach

This section details how the SEA has been undertaken alongside the preparation of the Plan. Figure 3.1 lays out the main stages in the Plan/SEA preparation process.

The Plan and associated SEA, Appropriate Assessment (AA) and Strategic Flood Risk Assessment (SFRA) documents were prepared in an iterative manner whereby multiple revisions of each document were prepared, each informing subsequent iterations of the others.

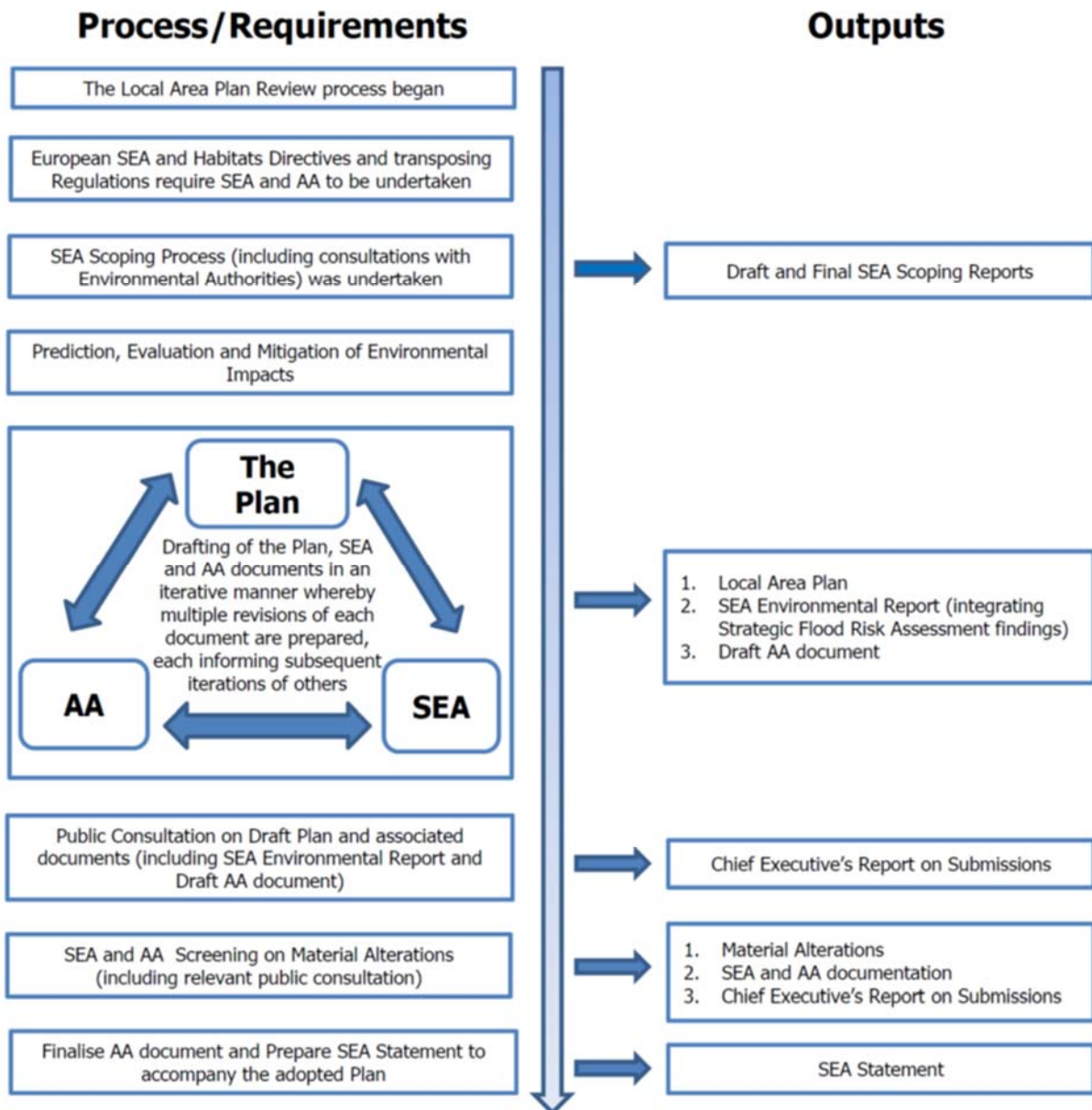


Figure 3.1 Muine Bheag / Royal Oak Local Area Plan and SEA, AA and SFRA Stages

3.2 Appropriate Assessment and Integrated Biodiversity Impact Assessment

3.2.1 Appropriate Assessment

A Stage 2 Appropriate Assessment (AA) has been undertaken alongside the preparation of the Plan.

The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC).

The AA concluded that the Plan will not affect the integrity of the Natura 2000 network².

The preparation of the Plan, SEA and AA has taken place concurrently and the findings of the AA have informed both the Plan and the SEA. All recommendations made by the AA were integrated into the Plan.

3.3 Strategic Flood Risk Assessment

A Strategic Flood Risk Assessment (SFRA) has been undertaken alongside the preparation of the Plan.

The requirement for SFRA is provided under 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (DEHLG and OPW, 2009).

The preparation of the Plan, SEA and SFRA has taken place concurrently and the findings of the SFRA have informed both the Plan and the SEA.

² Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:

- (a) no alternative solution available;
- (b) imperative reasons of overriding public interest for the plan to proceed; and
- (c) adequate compensatory measures in place.

³ It was identified that mitigation needed to be integrated into the LAP in order to ensure the protection of the River Barrow and River Nore Valley candidate Special Area of Conservation (Site Code 002162). This cSAC is designated for a number of species, including freshwater pearl mussel, which are highly protected and sensitive. A submission was

The SFRA has facilitated the integration of flood risk management considerations into the Plan.

3.4 Requirement for SEA

Having considered the review and preparation of the Muine Bheag /Royal Oak Local Area Plan under Article 8 (14A) of the Planning and Development (SEA) Regulations (as amended), Carlow County Council, based on available information on both the expected content of the draft Plan and the existing environment, determined that the Plan would be likely, if unmitigated, to have significant effects on the environment³.

Furthermore, a Stage 2 Appropriate Assessment (AA) under the Habitats Directive has been undertaken on the LAP. The SEA Directive requires that SEA is undertaken where Stage 2 AA is being undertaken on plans, programmes or variations to these.

It therefore was determined that SEA was required to be undertaken on the Draft Plan.

3.5 Scoping

3.5.1 Introduction

In consultation with the environmental authorities, the scope of environmental issues to be dealt with by the SEA together with the level of detail to which they are addressed was broadly decided upon taking into account the collection of environmental baseline data and input from environmental authorities. Scoping allowed the SEA to become focused upon key issues relevant to the environmental components that are specified under the SEA Directive⁴.

As the Plan is not likely to have significant effects on the environment in another Member

made by the Department of Arts, Heritage and the Gaeltacht as part of the Plan preparation process that highlights the need to consider the protection of ecological sensitivities - including cSACs and protected species. Other issues for the Plan include those relating to wastewater treatment capacity and performance, water quality and flood risk.

⁴ These components comprise biodiversity, fauna, flora, population, human health, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.

State, transboundary consultations as provided for by Article 7 of the SEA Directive were not undertaken.

3.5.2 Scoping Notices

All relevant environmental authorities⁵ identified under the SEA Regulations as amended, were sent SEA scoping notices by the Council indicating that submissions or observations in relation to the scope and level of detail of the information to be included in the environmental report could be made to the Council. Environmental authorities were informed that submissions, or parts of submissions, made on the AA or SFRA would also be taken into account.

3.5.3 Scoping Responses

Submissions were made by the Environmental Protection Agency and the Department of Arts, Heritage and the Gaeltacht. These submissions influenced the scope of the assessments and have been taken into account during the undertaking of the SEA, SFRA and AA.

3.6 Environmental Baseline Data

The SEA process is informed by the environmental baseline (i.e. the current state of the environment) to facilitate the identification and evaluation of the likely significant environmental effects of implementing the provisions of the Plan and the alternatives and the subsequent monitoring of the effects of implementing the provisions of the Plan.

3.7 Alternatives

The SEA Directive requires that reasonable alternatives (taking into account the objectives and the geographical scope of the plan or programme) are identified, described and

evaluated for their likely significant effects on the environment. In accordance with this requirement, alternatives are considered in Section 6 and Section 7.

3.8 The SEA Environmental Report

In this Environmental Report, an earlier version of which was placed on public display alongside the Draft Plan, the likely environmental effects of the Draft Plan and the alternatives are predicted and their significance evaluated.

The Environmental Report provides the Council, stakeholders and the public with a clear understanding of the likely environmental consequences of implementing the Plan.

Mitigation measures to prevent or reduce significant adverse effects posed by the Plan are identified in Section 9 - these have been integrated into the Plan.

The Environmental Report has been updated in order to take account of recommendations contained in submissions and in order to take account of changes that were made to the original, Draft Plan that was placed on public display.

The Environmental Report is required to contain the information specified in Schedule 2 of the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No. 436 of 2004) as amended (see Table 3.1).

⁵ The following authorities were notified: Environmental Protection Agency; Department of Communications, Energy and Natural Resources; Department of Agriculture, Fisheries and Food; Department of the Environment, Community and Local Government; Department of Arts, Heritage and the Gaeltacht; and adjoining planning authorities whose areas are contiguous to the administrative area of Carlow County Council.

3.9 The SEA Statement

On the making of the Plan by the Council, an SEA Statement is prepared which will include information on:

- How environmental considerations have been integrated into the Plan, highlighting the main changes to the Plan which resulted from the SEA process;
- How the SEA Environmental Report and consultations have been taken into account, summarising the key issues raised in consultations and in the Environmental Report indicating what action was taken in response;
- The reasons for choosing the Plan in the light of the other alternatives, identifying the other alternatives considered, commenting on their potential effects and explaining why the Plan as adopted was selected; and
- The measures decided upon to monitor the significant environmental effects of implementing of the Plan.

3.10 Difficulties Encountered

The lack of a centralised data source that could make all environmental baseline data for the County both readily available and in a consistent format posed a challenge to the SEA process. This difficulty is one which has been encountered while undertaking SEAs at local authorities across the country and was overcome by investing time in the collection of data from various sources and through the use of Geographical Information Systems.

Table 3.1 Checklist of Information included in this Environmental Report

Information Required to be included in the Environmental Report	Corresponding Section of this Report
(A) Outline of the contents and main objectives of the plan or programme, and of its relationship with other relevant plans and programmes	Sections 2, 5 and 7
(B) Description of relevant aspects of the current state of the environment and the evolution of that environment without implementation of the plan or programme	Section 4
(C) Description of the environmental characteristics of areas likely to be significantly affected	Sections 4, 6 and 7
(D) Identification of any existing environmental problems which are relevant to the plan or programme, particularly those relating to European protected sites	Section 4
(E) List environmental protection objectives, established at international, EU or national level, which are relevant to the plan or programme and describe how those objectives and any environmental considerations have been taken into account when preparing the Plan	Sections 5, 6, 7 and 8
(F) Describe the likely significant effects on the environment	Sections 6 and 7
(G) Describe any measures envisaged to prevent, reduce and as fully as possible offset any significant adverse environmental effects of implementing the plan or programme	Section 8
(H) Give an outline of the reasons for selecting the alternatives considered, and a description of how the assessment was undertaken (including any difficulties)	Sections 3, 6 and 7
(I) A description of proposed monitoring measures	Section 9
(J) A non-technical summary of the above information	Non-Technical Summary (Appendix II)
(K) Interrelationships between each environmental topic	Addressed as it arises within each Section

Section 4 Environmental Baseline

4.1 Introduction

The SEA Directive requires that the information on the baseline environment is focused upon the relevant aspects of the environmental characteristics of areas likely to be significantly affected and the likely evolution of the current environment in the absence of the Plan. Being consistent with the strategic provisions of the Plan, this section provides a strategic description of aspects of environmental components that have the greatest potential to be affected by implementation of the Plan, if unmitigated.

Article 5 of the SEA Directive states that the report shall include the information that may *reasonably* be required taking into account:

- Current knowledge and methods of assessment;
- The contents and level of detail in the plan or programme and its stage in the decision-making process; and
- The extent to which certain matters are more appropriately assessed at different levels in that process in order to avoid duplication of the assessment.

What this means in practice is, inter alia, that SEA involves collating currently available, relevant environmental data; it does not require major new research. Where data deficiencies or gaps exist, this should be acknowledged in the report.

With respect to the likely evolution of the environment in the absence of the Plan, the current Muine Bheag /Royal Oak Local Area Plan 2010-2016 contains provisions that contribute towards environmental protection and sustainable development within Muine Bheag / Royal Oak.

If the previous Plan was to have expired and not replaced by the new Plan, this would have resulted in a deterioration of the town's planning and environmental protection framework. Although higher-level environmental protection objectives – such as those of the new 2015-2021 County Development Plan and various EU Directives and transposing Irish Regulations – would still apply, the deterioration of this framework

would mean that new development would be less coordinated and controlled. Such development would have the potential to result in an increase in the occurrence of adverse effects on all environmental components, especially those arising cumulatively. Cumulative effects occur as a result of the addition of many small impacts to create one larger, more significant, impact.

Such adverse effects could include:

- Loss of biodiversity with regard to Natura 2000 Sites and Annexed habitats and species;
- Loss of biodiversity with regard to ecological connectivity and stepping stones;
- Loss of biodiversity with regard to designated sites including Wildlife Sites and species listed on Schedule 5 of the Wildlife Act 1976;
- Spatially concentrated deterioration in human health;
- Adverse impacts on the hydrogeological and ecological function of the soil resource;
- Adverse impacts upon the status of water bodies arising from changes in quality, flow and/or morphology;
- Increase in the risk of flooding;
- Failure to provide adequate and appropriate waste water treatment;
- Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean;
- Increases in waste levels;
- Failure to contribute towards sustainable transport and associated impacts;
- Effects on entries to the Record of Monuments and Places and other archaeological heritage;
- Effects on entries to the Records of Protected Structures and other architectural heritage; and
- Occurrence of adverse visual impacts.

4.2 Biodiversity and Flora and Fauna

4.2.1 Natura 2000

Candidate Special Areas of Conservation (cSACs) have been selected for protection under the European Council Directive on the conservation of natural habitats and of wild fauna and flora (92/43/EEC) by the (former) Department of the Environment, Heritage and Local Government due to their conservation value for habitats and species of importance in the European Union.

Special Protection Areas (SPAs) have been selected for protection under the 1979 European Council Directive on the Conservation of Wild Birds (79/409/EEC) due to their conservation value for birds of importance in the European Union. SPAs, along with SACs, comprise Ireland's Natura 2000 network – part of an EU-wide network of protected areas established under the Habitats Directive.

There is one Natura 2000 site occurring inside the Plan boundary, which is the River Barrow and River Nore cSAC. This site has been designated due to the presence of a number of habitats and species including petrifying spring, old oak woodlands, alluvial forests, Desmoulin's whorl snail, freshwater pearl mussel, white-clawed crayfish, sea lamprey brook lamprey, river lamprey, twaite shad, Atlantic salmon, otter, Killarney fern and Nore freshwater pearl mussel.

cSACs within 5, 10 and 15km buffers of the Plan area are shown on Figure 4.1. The River Barrow and River Nore cSAC transects the Plan area and is shown on Figure 4.2. These are also listed on Table 4.1. There are currently no SPAs within 15km of the Plan area.

Table 4.1 Natura 2000 sites within 15km of the Plan area

Natura 2000 Sites		
Designation	Code	Site Name
SAC	02162	River Barrow and River Nore SAC
	0770	Blackstairs Mountains SAC

Additional information on Natura 2000 sites is provided in the Stage 2 Appropriate Assessment Natura Impact Report that accompanies the Plan.

4.2.2 Proposed Natural Heritage Area

Natural Heritage Areas (NHAs) are designated due to their national conservation value for ecological and/or geological/geomorphological heritage. They cover nationally important semi-natural and natural habitats, landforms or geomorphological features, wildlife plant and animal species or a diversity of these natural attributes. NHAs are designated under the Wildlife (Amendment) Act 2000. Proposed NHAs (pNHA) were published on a non-statutory basis in 1995, but have not since been statutorily proposed or designated.

There are no NHAs or pNHAs occurring inside the Plan boundary. NHAs and pNHAs within 15km of the Plan area are listed on Table 4.2 and mapped on Figure 4.3. The closest of these sites is the Ballymoon Esker pNHA, located less than 1km to the east of the Plan area.

Table 4.2 NHAs and pNHAs within 15km of the Plan area

Natural Heritage Areas		
Designation	Code	Site Name
NHA	02382	Coan Bogs NHA
Proposed Natural Heritage Areas		
Designation	Code	Site Name
pNHA	408	Mothel Church, Coolcullen
	770	Blackstairs Mountains
	788	Ardristan Fen
	797	Ballymoon Esker
	806	Cloghrystick Wood
	830	Clohasia
	846	Red Bog, Dungarvan
	855	Whitehall Quarries

4.2.3 CORINE Land Cover Mapping

CORINE land cover mapping⁶ for Muine Bheag / Royal Oak and surrounding environs for the year 2012 is shown on Figure 4.4. Discontinuous Urban Fabric (indicative of the built area of the town) covers most of the Plan area with other areas within and surrounding the Plan area covered by Non-Irrigated lands and Pasture, indicative agricultural uses.

4.2.4 Ecological Networks and Connectivity

Ecological networks are important in connecting areas of local biodiversity with each other and with nearby designated sites so as to prevent islands of habitat from being isolated entities. They are composed of linear features, such as treelines, hedgerows and rivers/streams, which provide corridors or stepping stones for wildlife species moving within their normal range. They are important for the migration, dispersal and genetic exchange of species of flora and fauna particularly for mammals, especially for bats and small birds and facilitate linkages both between and within designated ecological sites, the non-designated surrounding countryside and the town.

Important ecological networks comprise a variety of features including the Barrow River and associated Canal that flow through the Plan area, various agricultural lands, stands of trees and hedgerows.

4.2.5 Registers of Protected Areas

In response to the requirements of the Water Framework Directive, a number of water bodies, or parts of water bodies, which must have extra controls on their quality by virtue of how their waters are used by people and by wildlife, have been listed on Registers of Protected Areas (RPAs).

⁶ CORINE Land Cover (CLC) is a map of the European environmental landscape based on interpretation of satellite images. Land cover is the observed physical cover, as seen from the ground or through remote sensing, including for example natural or planted vegetation, water and human constructions which cover the earth's surface. Because of the scale of the CORINE data and the method by which it was

Entries to RPAs for wildlife within or adjacent to the town all relate to cSAC designations and associated species.

Further information on entries to the RPA by virtue of their value to people is provided in Section 4.5.

4.2.6 Other Protected Species/Habitats

In addition to certain species and habitats already mentioned above, other species are protected under law wherever they occur, such as:

- 'Protected Species and natural habitats' as defined in the Environmental Liability Directive (2004/35/EC) and European Communities (Environmental Liability) Regulations 2008 including annexed habitats and species listed under Annexes I, II and IV of the EU Habitats Directive and Annex I of the EU Birds Directive;
- Species/Habitats legally protected under the Flora Protection Order in the Wildlife (Amendment) Act 2000;
- Other species of flora and fauna and their key habitats which are protected under the Wildlife Acts 1976-2000 including all native mammals; and
- Stepping stones and ecological corridors including nature conservation sites (other than Natura 2000 sites), habitats and species locations covered by Article 10 of the Habitats Directive.

4.2.7 Existing Problems

Previous developments such as residential, commercial and transportation have resulted in loss of biodiversity and flora and fauna however, legislative objectives governing biodiversity and fauna were not identified as being currently conflicted with.

collected there are likely to be a number of inaccuracies at the local level. It is noted, however, that the land cover shown on the maps is generally accurate at the County level. The European Environment Agency, in conjunction with the European Space Agency, the European Commission and member countries is currently updating the CORINE land cover database.

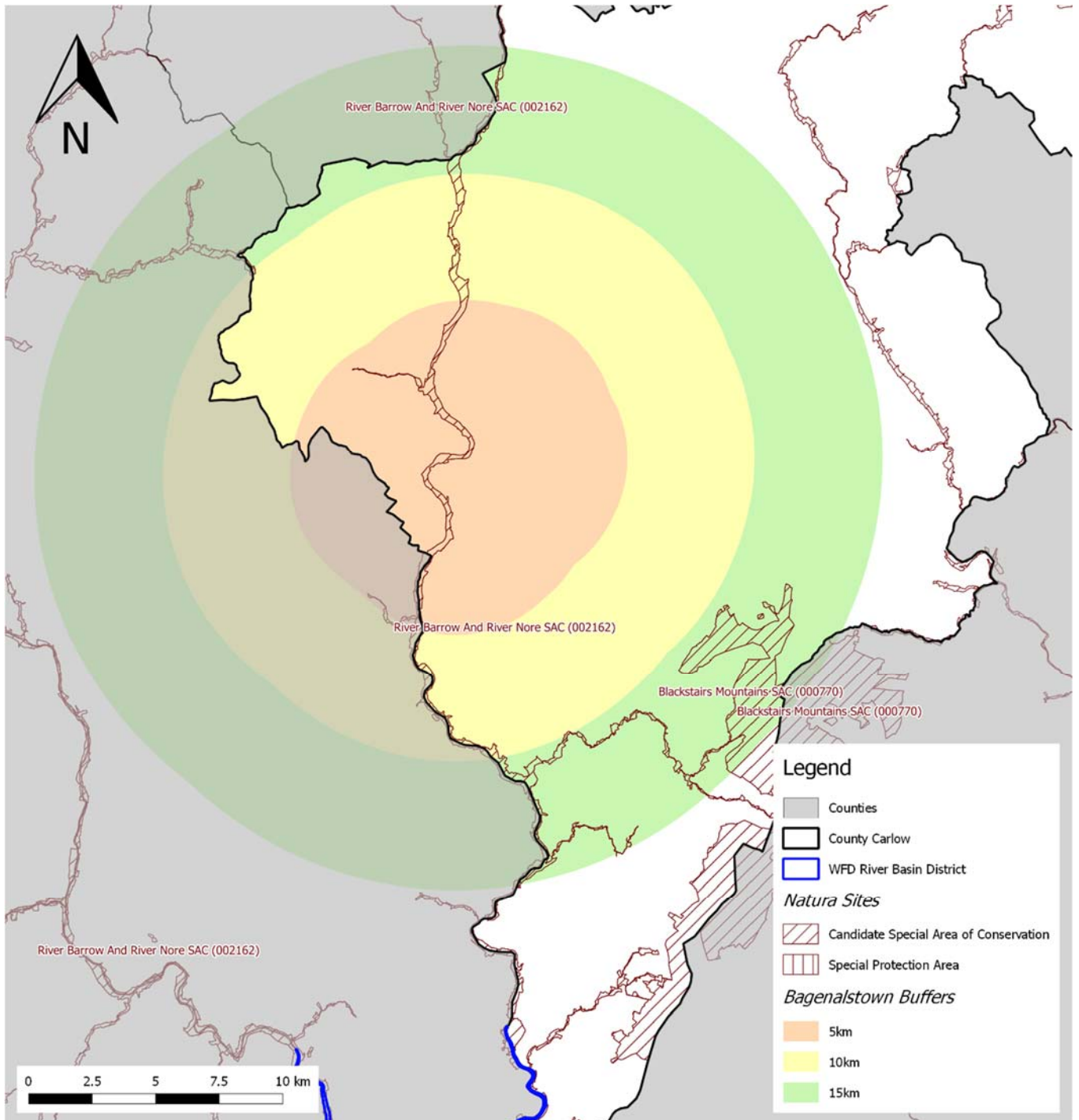


Figure 4.1 cSACs and SPAs in the vicinity of the Plan area

Source: NPWS (datasets downloaded February 2016)

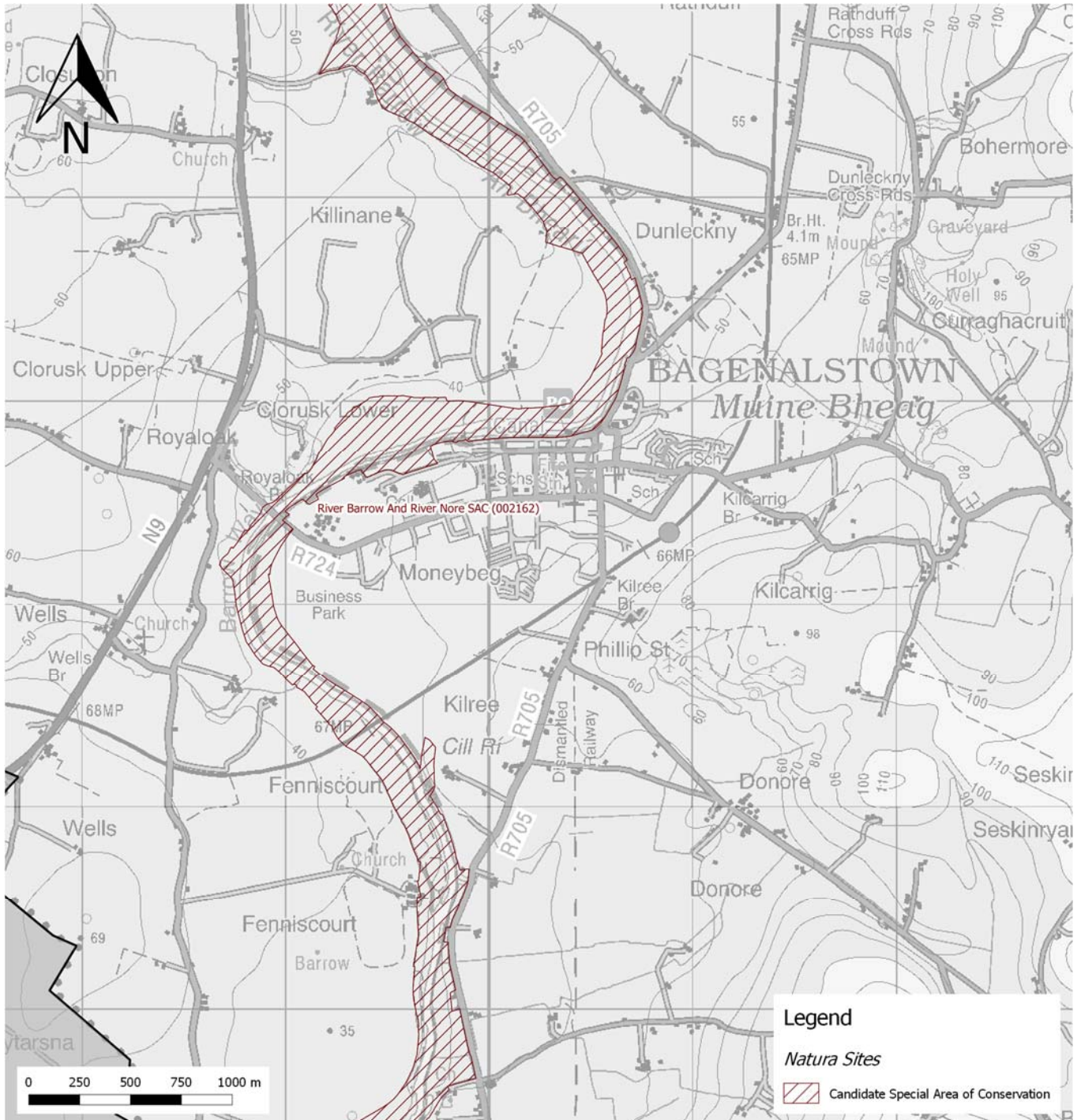


Figure 4.2 River Barrow and River Nore cSAC

Source: NPWS (datasets downloaded February 2016)

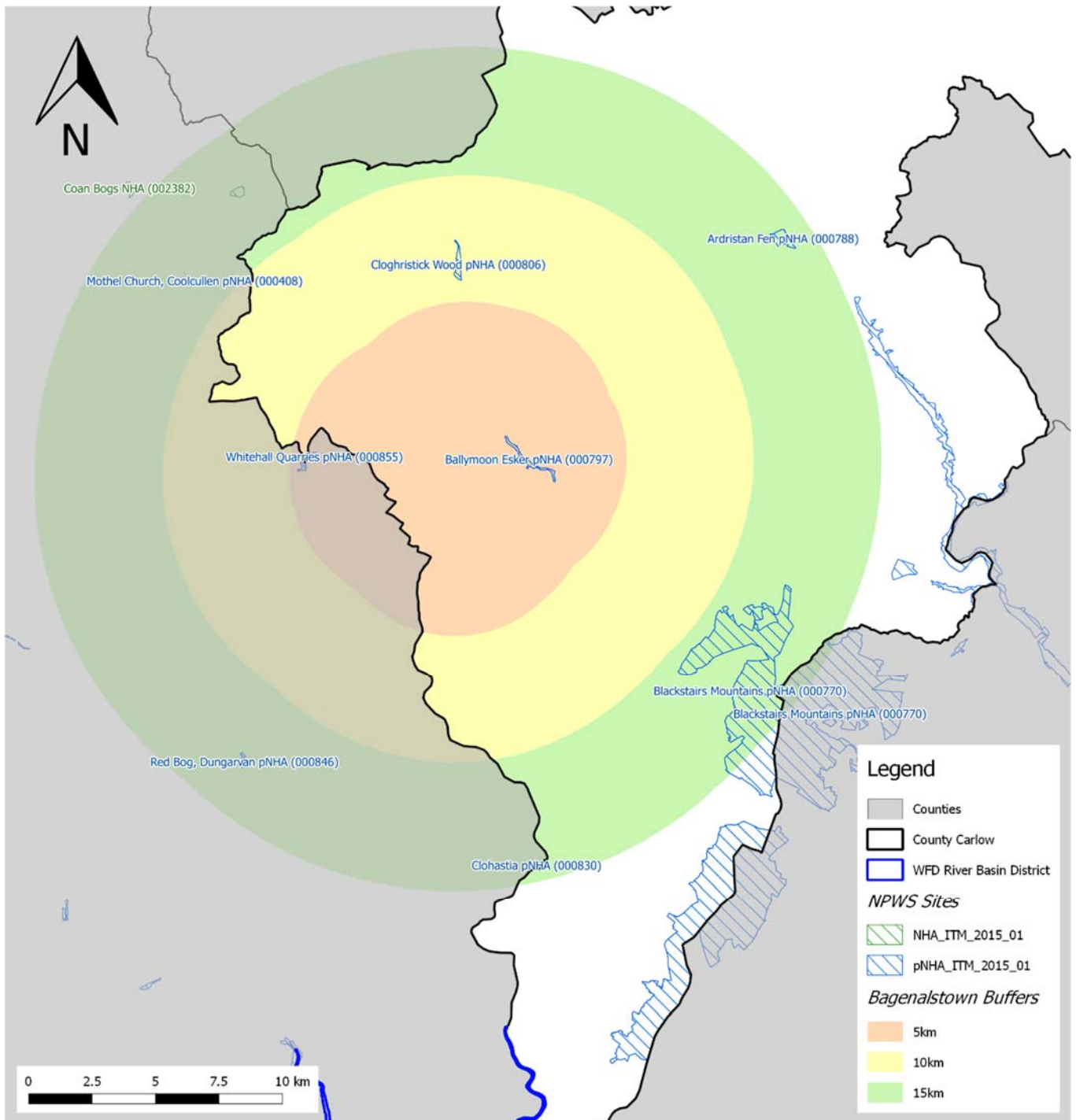


Figure 4.3 NHAs and pNHAs in the vicinity of the Plan area

Source: NPWS (datasets downloaded February 2016)

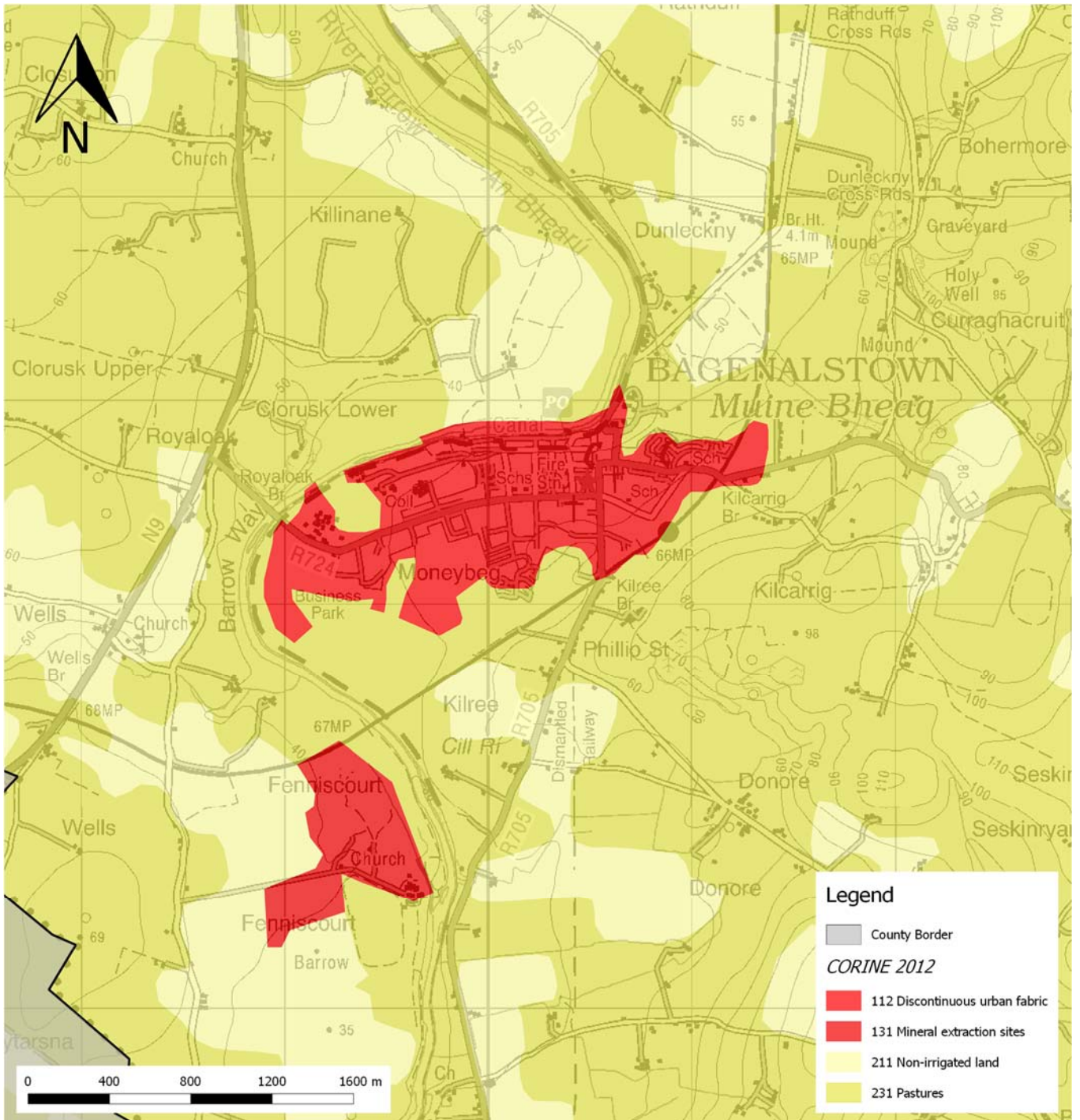


Figure 4.4 CORINE Land Cover Data 2012

Source: EPA (2015)

4.3 Population and Human Health

4.3.1 Population

The population of Muine Bheag / Royal Oak urban and rural environs was recorded as being 2,950 in 2011, representing a 7% increase on the 2006 population figure.

In recent years, there has been a tendency for development to locate on the fringe of Muine Bheag while large parts of the town centre, such as the canal front and backland areas remain underused or vacant. This trend is reinforced by the development of new single houses and suburban type housing estates on the fringe of the town.

4.3.2 Human Health

Human health has the potential to be impacted upon by environmental vectors (i.e. environmental components such as air, water or soil through which contaminants or pollutants, which have the potential to cause harm, can be transported so that they come into contact with human beings). Hazards or nuisances to human health can arise as a result of exposure to these vectors arising from incompatible adjacent land uses for example. These factors have been considered with regard to the description of: the baseline of each environmental component; and the identification and evaluation of the likely significant environmental effects of implementing the Plan.

4.3.3 Existing Problems

The Strategic Flood Risk Assessment (SFRA) undertaken alongside the preparation of the Plan has identified lands that are at elevated levels of flood risk within the Plan area. The SFRA has facilitated the integration of flood risk management considerations into the Plan.

4.4 Soil

4.4.1 Introduction

Soil can be considered as a non-renewable natural resource because it develops over very long timescales. It is an extremely complex,

variable and living medium and performs many vital functions including: food and other biomass production, storage, filtration and transformation of many substances including water, carbon, and nitrogen. Soil has a role as a habitat and gene pool, serves as a platform for human activities, landscape and heritage and acts as a provider of raw materials. Such functions of soil are worthy of protection because of their socio-economic as well as environmental importance. Soils in any area are the result of the interaction of various factors, such as parent material, climate, vegetation and human action.

To date, there is no Directive that is specific to the protection of soil resources. However, there is currently an EU Thematic Strategy on the protection of soil that includes a proposal for a Soil Framework Directive that proposes common principles for protecting soils across the EU.

4.4.2 Soil Types

Soil types, as classified by the EPA, are mapped on Figure 4.5. The primary underlying soil below the town of Muine Bheag is identifiable as Made soil type (coral blue colour). The surrounding areas largely consist of Renzinas / Lithosols soils (purple colour) along with Mineral alluvium soils located along the River Barrow. Areas of Lithosols / Regosols (Pink colour) and Acid Brown Earths / Brown Podzolics soils (red colour) are also distinguishable to the southeast of the town.

4.4.3 Geological Heritage

The geology of County Carlow has influenced the landscapes, soils, habitats, economic activities such as quarrying and features of local cultural interest such as stonewalls, limekilns etc. The Geological Survey of Ireland, in partnership with Carlow County Council, has developed a list of County Geological Sites, as part of the Irish Geological Heritage Programme. These are sites of local geological and geomorphological interest, or sites which contain a feature of local geological and geomorphological interest. Some of these sites, which are of national significance, may in the future, be proposed by the Geological Survey of Ireland and the National Parks and Wildlife Service, as geological Natural Heritage Areas (NHAs). One of these County Geological Sites – the Ballymoon Esker – is located to the East of the Plan area.

The programme of County Geological Site documentation is an on-going, dynamic process as additional sites may be added through new exposures such as quarrying and road cuttings and through notifications from local community knowledge.

4.4.4 Existing Problems

Legislative objectives governing soil were not identified as being conflicted with

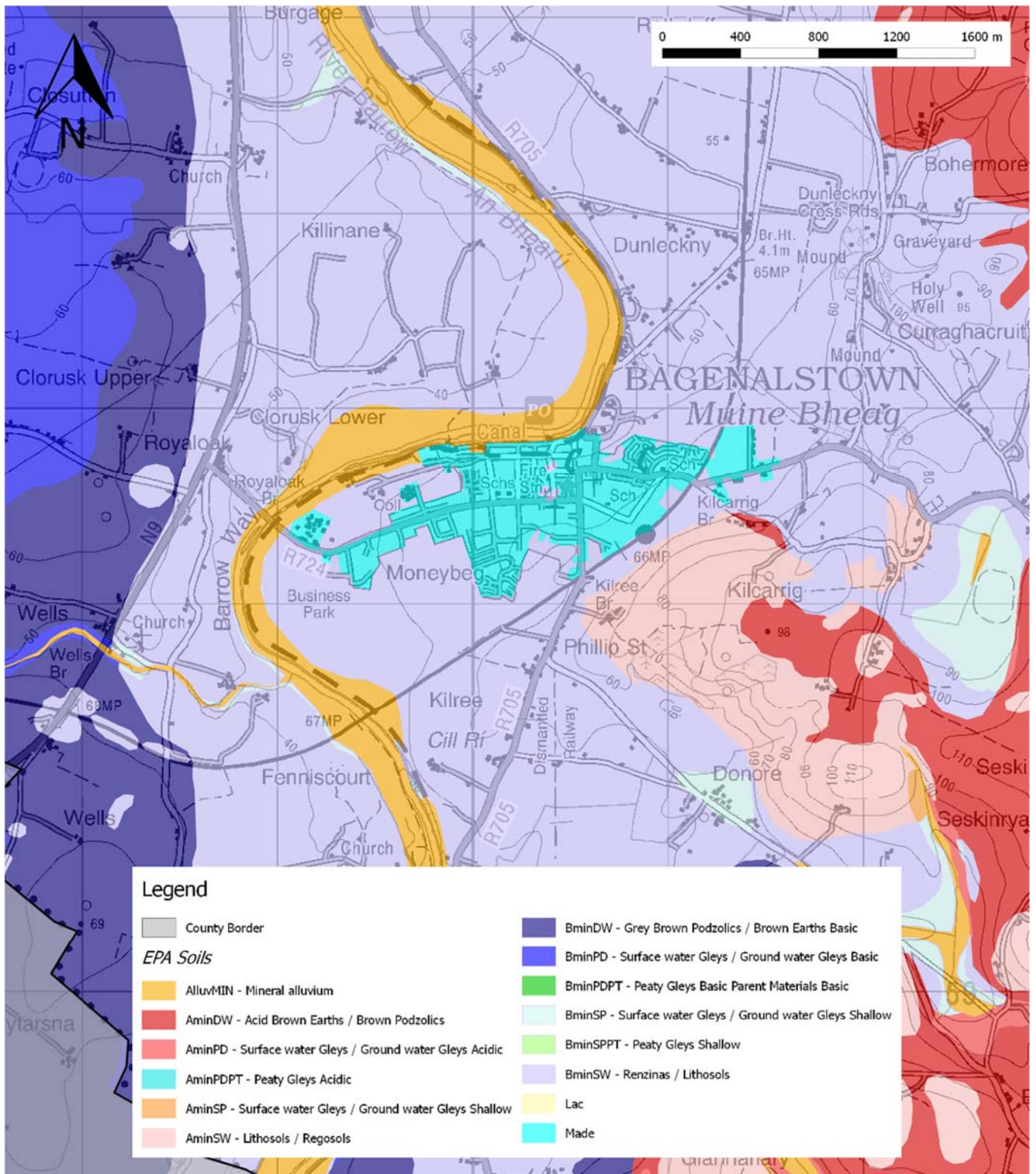


Figure 4.5 Soil Type

Source: Teagasc, GSI, Forest Service & EPA (2006) *Soils and Subsoils Class*

4.5 Water

4.5.1 Potential Pressures on Water Quality

Human activities, if not properly managed, can cause deterioration in water quality. Pressures exerted by human activities include the following:

- Sewage and other effluents discharged to waters from point sources, e.g. pipes from treatment plants;
- Discharges arising from diffuse or dispersed activities on land;
- Abstractions from waters; and
- Structural alterations to water bodies.

A point source pressure has a recognisable and specific location at which pollution may originate. Examples of significant point source pressures include direct discharges from wastewater treatment plants, licensed discharges from industrial activities, landfills, contaminated lands (e.g. disused gas works) and mines.

A diffuse source pressure unlike a point source is not restricted to an individual point or location. The source of a diffuse pressure can be quite extensive. Significant examples of diffuse pressures include runoff from forestry and agricultural lands.

Excessive abstractions from surface waters and groundwater for drinking and industrial purposes can create pressures on the ability of a water body to maintain both chemical and ecological status.

Structural alterations such as river straightening; construction of embankments, weirs, dams, port facilities and dredging can create conditions such that a water body is no longer able to support the natural ecology which would have existed prior to such modifications. These pressures are also referred to as morphological pressures.

4.5.2 The Water Framework Directive

4.5.2.1 Introduction and Requirements

Since 2000, Water Management in the EU has been directed by the Water Framework Directive 2000/60/EC (WFD). The WFD requires that all Member States implement the necessary measures to prevent deterioration of the status of all waters - surface, ground, estuarine and coastal - and protect, enhance and restore all waters with the aim of achieving "good status". All public bodies are required to coordinate their policies and operations so as to maintain the good status of water bodies that are currently unpolluted and improve polluted water bodies to good status.

Article 4 of the WFD sets out various exemptions for deterioration in status caused as a result of certain physical modifications to water bodies. This is provided: all practicable mitigation measures are taken; there are reasons of overriding public interest or the benefits to human health, safety or sustainable development outweigh the benefits in achieving the WFD objective; there are no better alternatives; and the reasons for the physical modification are explained in the relevant river basin management plan.

4.5.2.2 River Basin Districts and Water Bodies

For the purpose of implementing the WFD, Ireland has been divided into eight River Basin Districts (RBDs) or areas of land that are drained by a large river or number of rivers and the adjacent estuarine/coastal areas. The management of water resources is on these river basin districts. The Muine Bheag / Royal Oak area falls within the South Eastern RBD.

Within each river basin district - for the purpose of assessment, reporting and management - water has been divided into groundwater, rivers, lakes, estuarine waters and coastal waters that are in turn divided into specific, clearly defined water bodies.

4.5.2.3 River Basin Management Plans

Local Authorities, including Carlow County Council, have prepared the South East River Basin Management Plan that is implemented in order to help protect and improve the status of waters. The Management Plan provides specific policies for individual river basins in order to implement the requirements of the WFD.

4.5.3 Surface Water

4.5.3.1 WFD Surface Water Status

The WFD defines 'surface water status' as the general expression of the status of a body of surface water, determined by the poorer of its ecological status and its chemical status. Thus, to achieve 'good surface water status' both the ecological status and the chemical status of a surface water body need to be at least 'good'.

Ecological status is an expression of the structure and functioning of aquatic ecosystems associated with surface waters. Such waters are classified as of "good ecological status" when they meet Directive requirements.

Chemical Status is a pass/fail assignment with a failure defined by a face-value exceedance of an Environmental Quality Standards (EQS) for one or more Priority Action Substances (PAS) listed in Annex X of the Water Framework Directive (WFD). The EQS values for individual PAS substances are set at European level. Good surface water chemical status means that concentrations of pollutants in the water body do not exceed the environmental limit values specified in the Directive.

Figure 4.6 maps the status of the River Barrow and its tributaries as currently available from the EPA⁷. Stretches of water bodies upstream, to the north of Royaloak Bridge are currently identified by the EPA as having a Good status with while Poor status is attributed to stretches of water bodies downstream, to the south of Royal Oak Bridge.

4.5.3.2 Biological Quality of Rivers

Biological river water quality within the vicinity of the town is monitored by the EPA at a number of locations. The most recent data from the EPA for monitoring points for the River Barrow identify the river as being of Q3 - Q4 (moderate status) downstream of the town (Station name: Fenniscourt Lough) and Q4 (good status) at Royal Oak Bridge within the town.

4.5.4 Ground Water

4.5.4.1 Introduction

Groundwater is stored in the void spaces in underground layers of rock, or aquifers. These aquifers are permeable, allowing both the infiltration of water from the soils above them and the yielding of water to surface and coastal waters. Groundwater is the part of the subsurface water that is in the saturated zone - the zone below the water table, the uppermost level of saturation in an aquifer at which the pressure is atmospheric, in which all pores and fissures are full of water.

4.5.4.2 WFD Groundwater Status

For groundwater bodies, the approach to classification is different from that for surface water. For each body of groundwater, both the chemical status and the quantitative must be determined. Both have to be classed as either good or poor. The WFD sets out a series of criteria that must be met for a body to be classed as good chemical and quantitative status.

The status of the groundwater underlying the Muine Bheag / Royal Oak area is identified as being of good status (see Figure 4.9).

4.5.4.3 Aquifer Productivity, Vulnerability and Protection

The Geological Survey of Ireland (GSI) rates aquifers according to both their productivity and vulnerability to pollution.

Much of the Plan area is underlain by two overlapping aquifers – A regionally important aquifer and a Gravel Aquifer (Barrow Gravels). Locally important aquifers occur to the southeast, east and west of the Plan area.

Aquifer vulnerability refers to the ease with which pollutants of various kinds can enter underground water. Figure 4.10 maps aquifer vulnerability for the Plan and surrounding area – much of the area is identified as being of high vulnerability with parts to the south-east of the town shown as being of extreme vulnerability or 'rock at or near surface or Karst'. Medium to low vulnerability exists to the west and northwest of the town.

⁷ Dataset downloaded February 2016

4.5.5 Register of Protected Areas

In response to the requirements of the Water Framework Directive, a number of water bodies, or parts of water bodies, which must have extra controls on their quality by virtue of how their waters are used by people and by wildlife, have been listed on Registers of Protected Areas (RPAs).

Entries to RPAs relating to the use of waters by people within or adjacent to the town include:

- The groundwater underlying both the town and surrounding environs (this is listed on the RPA for Drinking Water from Groundwater sources).
- The River Barrow is designated as a nutrient sensitive river.

4.5.6 Flooding

4.5.6.1 Introduction

Flooding is an environmental phenomenon that, as well as having causing economic and social impacts, could in certain circumstances pose a risk to human health.

European Directive 2007/60/EC on the assessment and management of flood risks requires Member States to carry out a preliminary assessment by 2011 in order to identify the river basins and associated coastal areas at risk of flooding. For such zones, flood risk maps have been made available. Flood risk management plans focused on prevention, protection and preparedness are currently being finalised. The Office of Public Works has prepared Preliminary Flood Risk Assessment (PFRA) maps that identify areas where the risks associated with flooding might be significant. These areas, Areas for Further Assessment (AFAs), are where more detailed assessment is required to more accurately assess the extent and degree of flood risk. Flood hazard and flood risk maps for AFAs were made available in 2015 and Flood Risk Management Plans are currently being finalised. Muine Bheag / Royal Oak is not indicated as an AFA.

4.5.6.2 DEHLG Flood Risk Management Guidelines

In 2009 the DEHLG published The Planning System and Flood Risk Management Guidelines for Planning Authorities. These are aimed at ensuring a more consistent, rigorous and

systematic approach which will fully incorporate flood risk assessment and management into the planning system. Planning authorities are required to undertake flood risk identification, assessment and management processes as appropriate when preparing land use plans and in the consideration of applications for planning permission.

4.5.6.3 Strategic Flood Risk Assessment

A Strategic Flood Risk Assessment (SFRA) has been undertaken alongside the preparation of the Plan.

The requirement for SFRA is provided under 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (DEHLG and OPW, 2009).

The main source of historic and potential flood risk to development in Muine Bheag and Royal Oak is the River Barrow that extends across a relatively expansive floodplain. In addition to this, there are four small and steeply sloping tributaries that drain into the Barrow and exert some flood risk to surrounding lands.

The SFRA examined flood risk at locations including the following in order identify areas that are at elevated levels of flood risk:

- Lands Upstream of Railway Line;
- Bagenalstown House and Dunleckney Maltings Area;
- Town Centre and Adjacent Lands;
- Industrial Lands adjacent to River Barrow; and
- Royal Oak Residential Lands.

Areas having elevated levels of flood risk are mapped on Figure 7.1.

The preparation of the Plan, SEA and SFRA has taken place concurrently and the findings of the SFRA have informed both the Plan and the SEA. The SFRA has facilitated the integration of flood risk management considerations into the Plan.

Certain lands within the Plan boundary were rezoned to water compatible uses (including 4.7ha of lands from residential to open space and amenity uses). An assessment of flood risk is required in support of any planning application where flood risk may be an issue and this may include sites where a small watercourse or field drain exists nearby. The level of detail will vary depending on the risks identified and the proposed land use. As a

minimum, all proposed development must consider the impact of surface water flood risks on drainage design. In addition, flood risk from sources other than fluvial and tidal should be reviewed. In the case of development at appropriate lands, which may be liable to flooding, a site-specific assessment will be carried out at each location. This assessment will include; a) measures to eliminate risk of flooding at the particular development and b) which will not increase the risk of flooding at other locations. Each application will be considered on its particular merits. The LAP also sets out general policy requirements contained in the guidelines to inform strategic land-use decisions with the purpose of ensuring that flood risk management is fully integrated into the Plan.

4.5.7 Existing Problems

The SFRA has identified lands that are at elevated levels of flood risk within the Plan area and has facilitated the integration of flood risk management considerations into the Plan.

The Poor surface water status of the River Barrow downstream of the town is distinguished as an issue due to the objective of the Water Framework Directive to achieve 'good surface water status' for all surface water catchments within the EU.

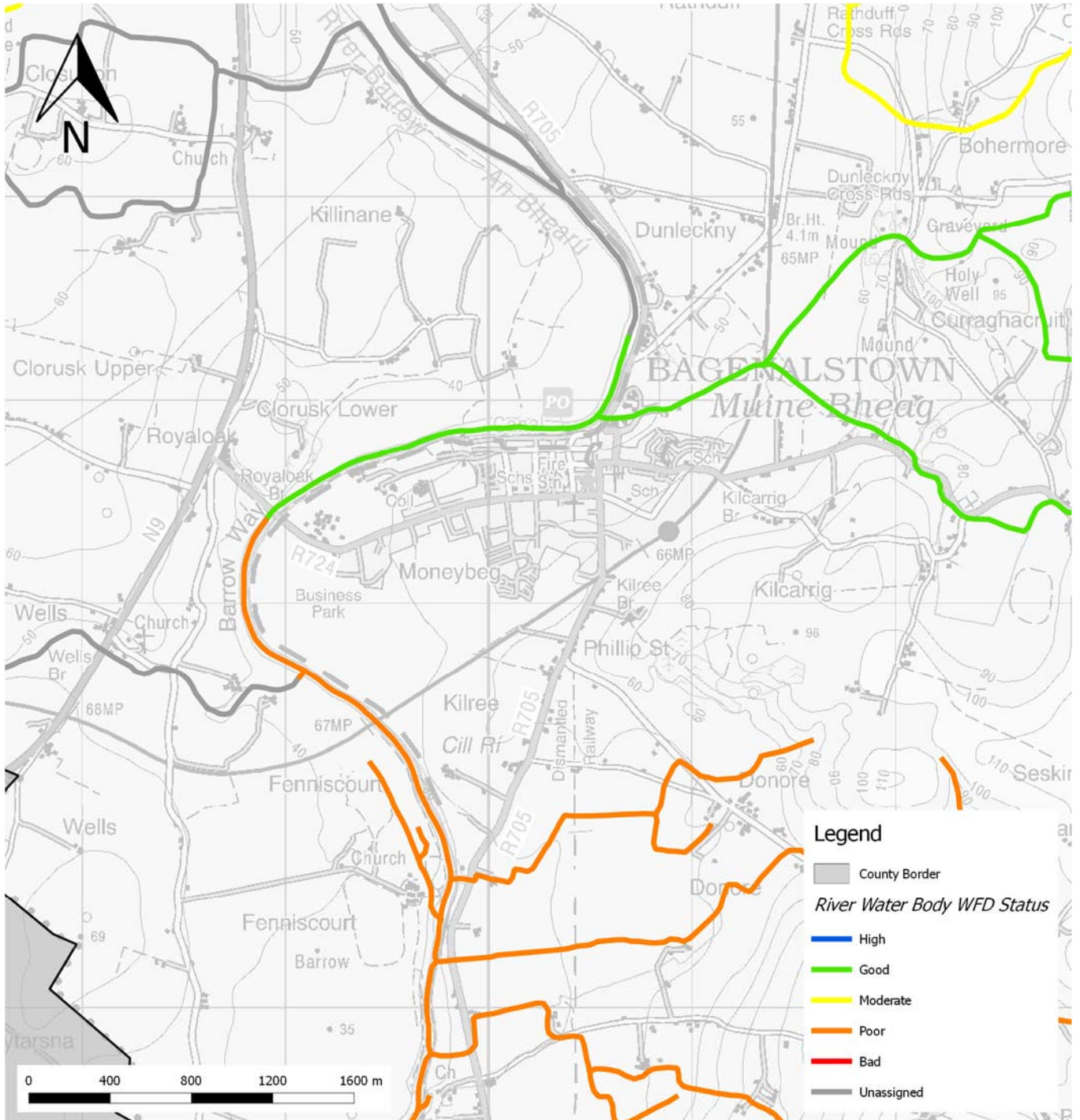


Figure 4.6 WFD Surface Water Status

Source: EPA (2011; datasets downloaded February, 2014)

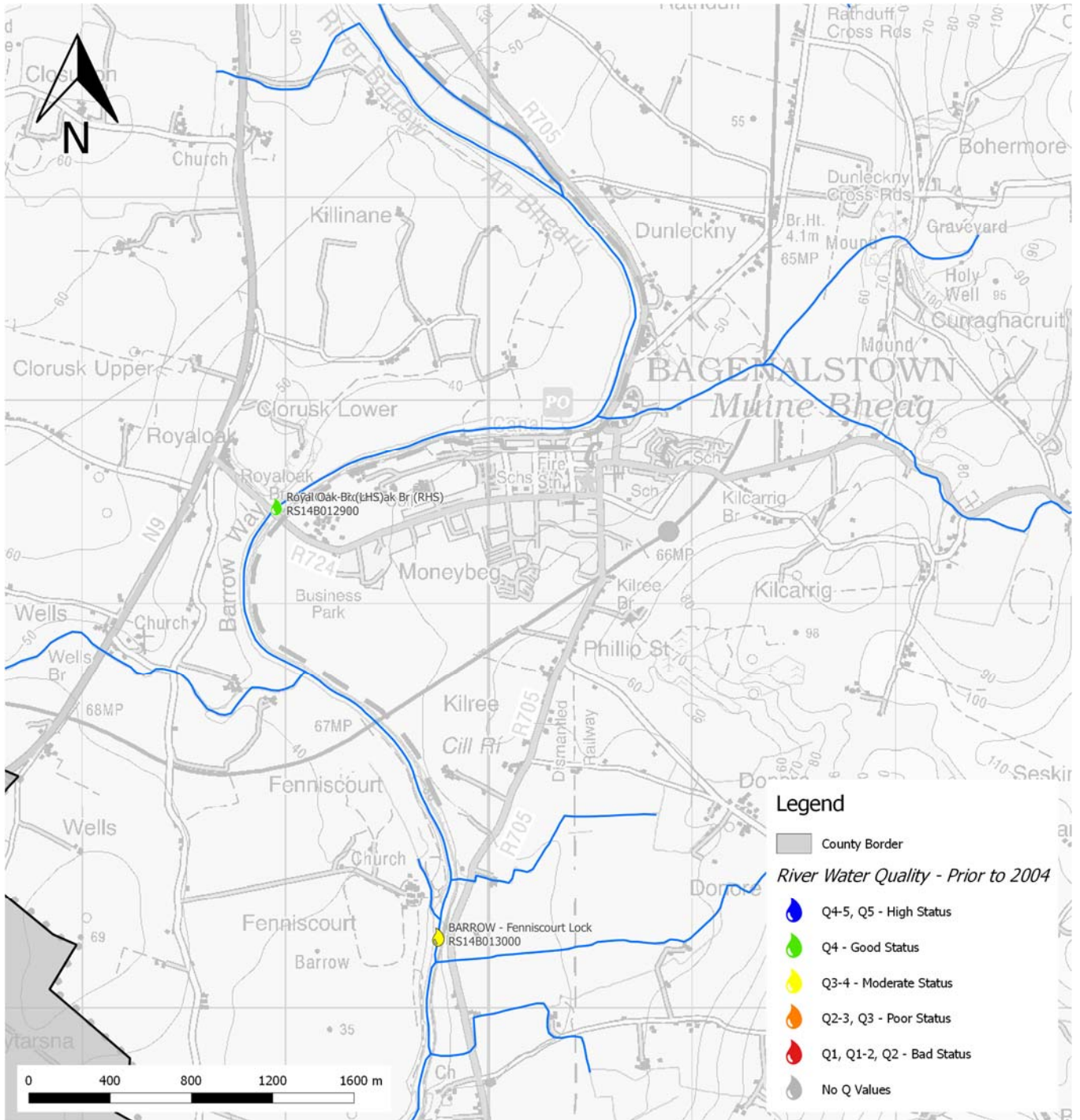


Figure 4.7 Q-Values at Points on Rivers post 2004
 Source: EPA (Various)

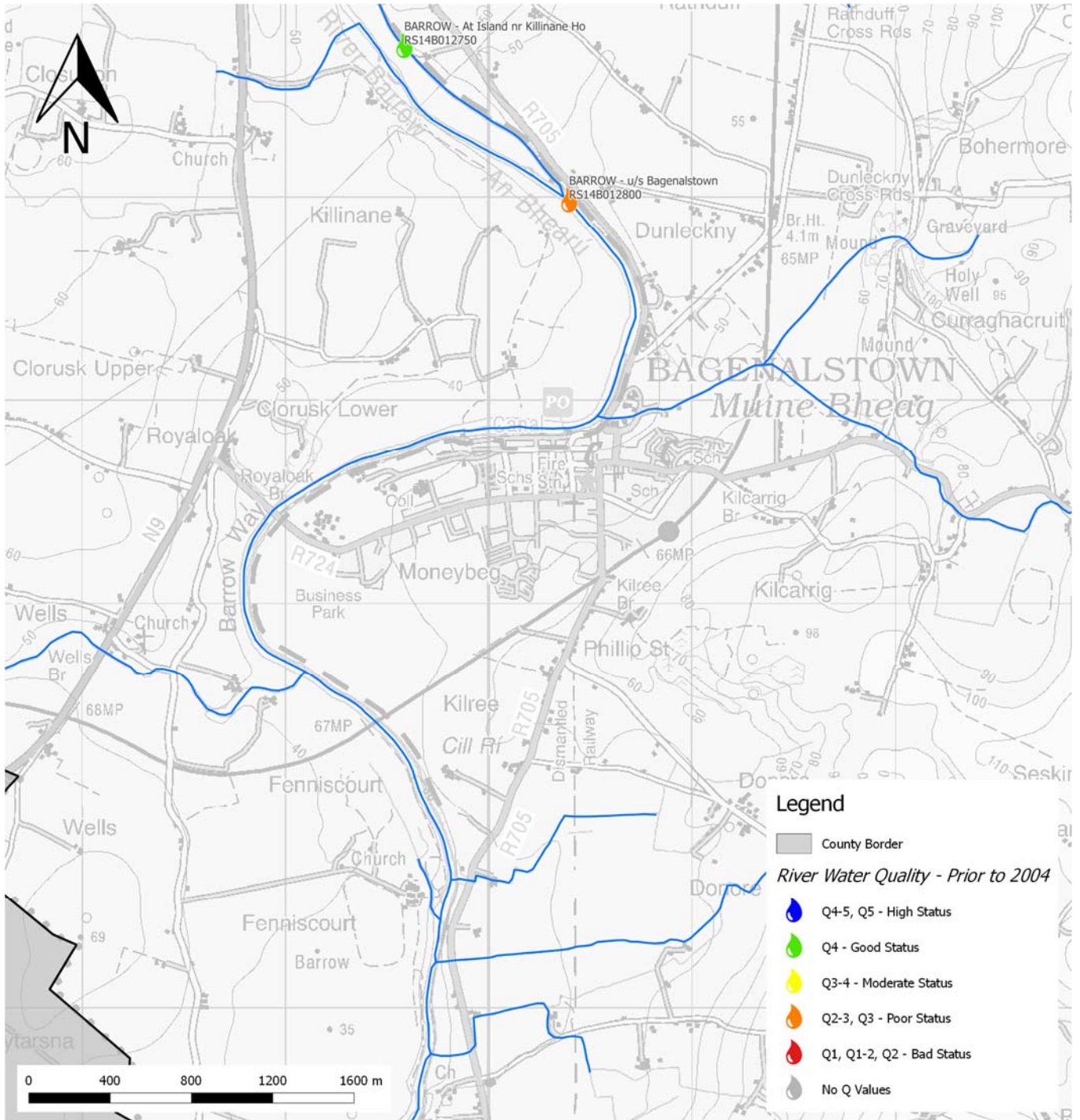


Figure 4.8 Q-Values on Points on Rivers pre 2004

Source: EPA (Various)



Figure 4.9 WFD Status of Groundwater
 Source: EPA (2011; datasets downloaded March 2015)

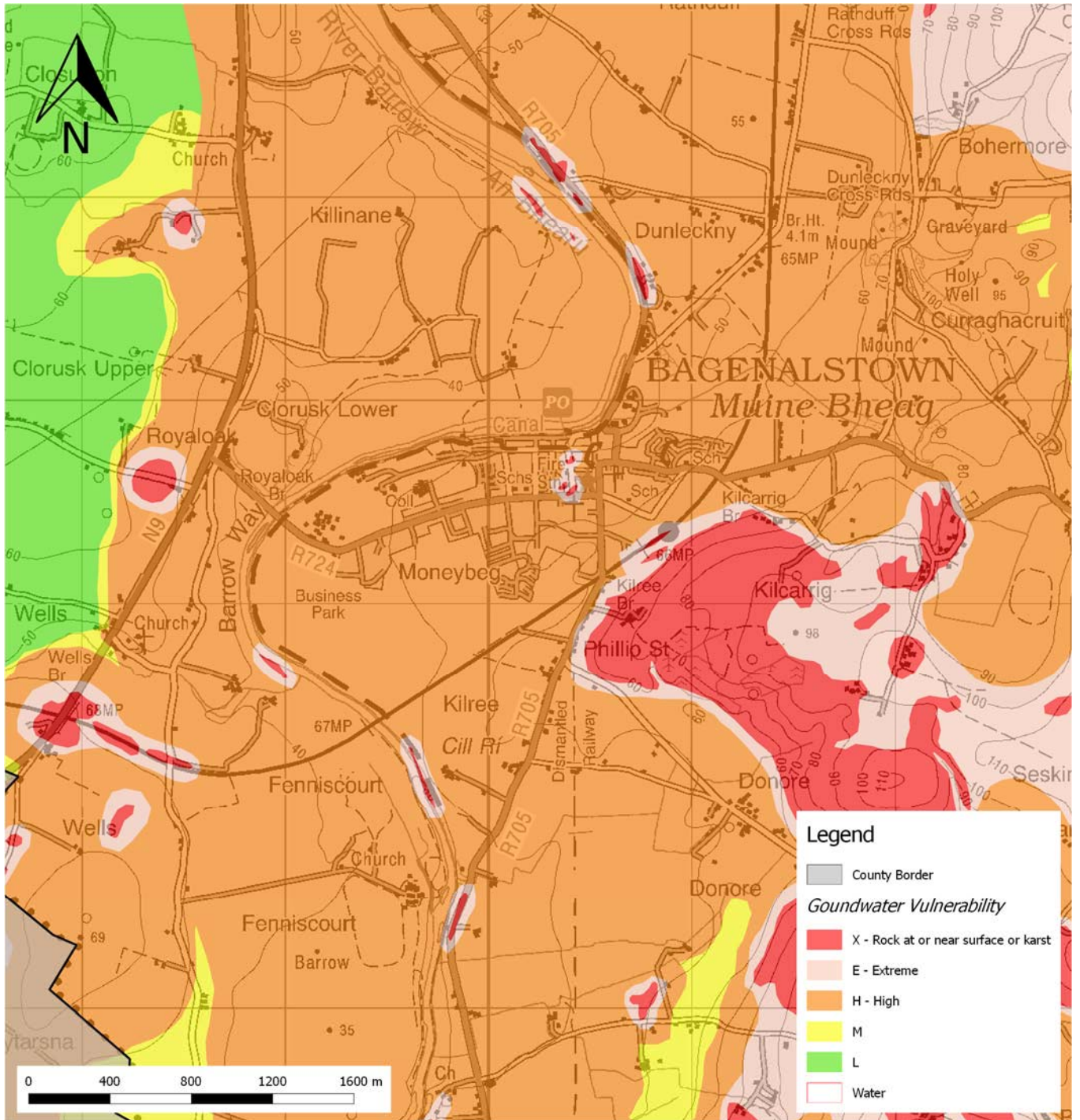


Figure 4.10 Aquifer Vulnerability

Source: GSI (2006)

of the country - excluding Zones A, B and C.

4.6 Air and Climatic Factors

4.6.1 Ambient Air Quality

4.6.1.1 Introduction and Legislation

In order to protect human health, vegetation and ecosystems, EU Directives set down air quality standards in Ireland and the other Member States for a wide variety of pollutants. These pollutants are generated through fuel combustion, in space heating, traffic, electricity generation and industry and, in sufficient amounts, could affect the well-being of the areas inhabitants. The EU Directives include details regarding how ambient air quality should be monitored, assessed and managed.

The principles to this European approach are set out under the Air Quality Framework Directive 1996 as transposed into Irish law under the Environmental Protection Agency Act 1992 (Ambient Air Quality Assessment and Management) Regulations 1999 (SI No. 33 of 1999).

Four daughter Directives lay down limits or thresholds for specific pollutants. The first two of these directives cover: sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead; and, carbon monoxide and benzene. Two more daughter directives deal with: ozone; and polycyclic aromatic hydrocarbons, arsenic, nickel, cadmium and mercury in ambient air.

4.6.1.2 Air Zones

In order to comply with the directives mentioned above, the EPA measures the levels of a number of atmospheric pollutants. For the purposes of monitoring in Ireland, four zones are defined in the Air Quality Standards Regulations 2002 (SI No. 271 of 2002). The main areas defined in each zone are:

- Zone A: Dublin Conurbation.
- Zone B: Cork Conurbation.
- Zone C: 21 Other cities and large towns including Galway, Limerick, Waterford, Clonmel, Kilkenny, Sligo, Drogheda, Wexford, Athlone, Ennis, Bray, Naas, Carlow, Tralee and Dundalk.
- Zone D: Rural Ireland, i.e. the remainder of the State - small towns and rural areas

The Muine Bheag / Royal Oak Plan area is located within Zone where air quality is currently identified as being "good". The EPA's (EPA, 2015) Air Quality in Ireland 2014 identifies that air quality in Ireland continues to be good, with no exceedances for the pollutants measured.

4.6.2 Noise

Noise is unwanted sound. The Environmental Noise Regulations (SI No. 140 of 2006) transpose into Irish law the EU Directive 2002/49/EC relating to the assessment and management of environmental noise, which is commonly referred to as the Environmental Noise Directive or END. The END defines a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise. The END does not set any limit value, nor does it prescribe the measures to be used in the action plans, which remain at the discretion of the competent authorities. Limit values are left to each member state. At this point in time, Ireland does not have any statutory limit values.

4.6.3 Climatic Factors

The key issue involving the assessment of the effects of implementing the plan on climatic factors relates to greenhouse gas emissions arising from transport. Climatic factors also interact with flooding (see Section 4.5).

In 2009, Ireland's greenhouse gas emissions decreased across all sectors due to the effects of the economic downturn with a decline in total emissions of 7.9 per cent. In 2010, Ireland's emissions fell by a further 0.7 per cent.

Ireland's emissions profile has changed considerably since 1990, with the contribution from transport more than doubling and the share from agriculture reducing since 1998. Travel is a source of:

1. Noise;
2. Air emissions; and
3. Energy use (41.7% of Total Final Energy Consumption in Ireland in 2014)

was taken up by transport, the largest take up of any sector)⁸.

Land-use planning contributes to what number and what extent of journeys occur. By addressing journey time through land use planning and providing more sustainable modes and levels of mobility, noise and other emissions to air and energy use can be minimised. Furthermore, by concentrating populations, greenfield development - and its associated impacts - can be minimised and the cost of service provision can be reduced.

Between 2008 and 2011, Ireland's greenhouse gas emissions decreased across all sectors due to the effects of the economic downturn with emissions falling by 15.2% between 2008 and 2011. However, 2012 saw emissions rise by 1.2% when compared with 2011⁹.

Between 1990 and 2013, the Transport sector shows the greatest overall increase of all sectors, at 115.5%. Emissions increased by 2.1% in 2013, the first increase in Transport emissions since 2007. However, Transport emissions have decreased by 23.1% below peak levels in 2007 primarily due to the economic downturn, improving vehicle standards due to the changes in vehicle registration tax and the increase use in biofuels. The increase up to 2007 can be attributed to general economic prosperity, increasing population with a high reliance on private car travel as well as rapidly increasing road freight transport.¹⁰

The EPA 2015 publication *Ireland's Greenhouse Gas Emission Projections 2014-2035*, identifies that:

- Under the 'worst case' scenario, Ireland is projected to cumulatively exceed its obligations by four Mtonnes of CO₂e over the period 2013-2020.
- Under the 'best case' scenario, Ireland is projected to cumulatively meet its compliance obligations over the 2013-2020 period and meet its 2020 target. This takes into account the overachievement of the annual limits in the period 2013- 2017 that is banked and used in the years 2018-2020. The report identifies that achieving the outlook under the 'best case' scenario

will require focus and effort which includes meeting renewable targets for transport and heat as well as energy efficiency targets.

- Transport emissions are projected to show strong growth over the period to 2020 with a 13%-19% increase on current levels depending on the level of policy implementation. Relative to 2005, transport emissions are projected to remain the same or, at best, decrease by 4% by 2020.

Maximising sustainable mobility will help Ireland meet its emission target for greenhouse gases under the 2020 EU Effort Sharing target that commits Ireland to reducing emissions from those sectors that are not covered by the Emissions Trading Scheme (e.g. transport, agriculture, residential) to 20% below 2005 levels.

Land-use planning contributes to the number and the extent of which journeys occur. By addressing journey time through land use planning and providing more sustainable modes and levels of mobility (as is provided for by the Plan), noise and other emissions to air and energy use can be minimised. Furthermore, by concentrating populations, greenfield development - and its associated impacts - can be minimised and the cost of service provision can be reduced.

Provisions in relation to green infrastructure have also been integrated into the Plan. Green Infrastructure has the potential to achieve objectives and synergies with regard to the following:

- Provision of open space amenities;
- Sustainable management of water;
- Protection and management of biodiversity;
- Protection of cultural heritage; and
- Protection of protected landscape sensitivities.

4.6.4 Existing Problems

Legislative objectives governing air and climatic factors in Carlow were not identified as being conflicted with.

⁸ Sustainable Energy Ireland (2014) Energy in Ireland 1990 – 2014

⁹ EPA (2014) Ireland's Greenhouse Gas Emissions in 2012

¹⁰ EPA (2014) Ireland's Provisional Greenhouse Gas Emissions in 2013

4.7 Material Assets

4.7.1 Water Services

4.7.1.1 Irish Water

Since January 2014 the delivery, integration and implementation of strategic water and wastewater projects and infrastructural improvements are now the responsibility of the newly established State body 'Irish Water'.

Carlow County Council no longer has a direct role in this area; however, the Local Authority will work with Irish Water to ensure that the Local Area Plan and any water services investment plan will align with both the National Spatial Strategy and the Regional Planning Guidelines and that the provision of water/waste water services will not be a limiting factor in terms of forecasted growth.

The function and role of Irish Water includes:

- Abstracting and treating water;
- Delivering water and waste water services to homes and businesses;
- Installing water meters and billing domestic and business customers;
- Raising finance to fund improvements and repairs in the water system; and
- Maintaining and operating the water system.

The upgrading of the infrastructure will contribute towards compliance with the Water Framework Directive, EU Urban Waste Water Treatment Directive and Drinking Water Regulations and will help to protect human health and maintain the quality of coastal waters.

The responsibility for the provision of these services now lies with Irish Water, supported by Carlow County Council, as appropriate.

4.7.1.2 Waste Water Performance

The EPA's most recent report on waste water treatment performance 'Urban Waste Water Treatment in 2015', EPA 2016, identifies that the Muine Bheag and Leighlinbridge Waste Water Treatment Plant (WWTP) passed the water quality standards set down under requirements of the Urban Waste Water Treatment Directive. This same standard was met in 2013 and 2014 by the WWTP.

4.7.1.3 Waste Water Capacity and Demand

The current WWTP has capacity for approximately 4,000 Population Equivalent (p.e.). The Wastewater treatment is currently at capacity and is included in the Irish Water Investment Plan for upgrade. The current Urban Area using the WWTP is 8,363 (P.E.) – see Table 4.3 below.

Table 4.3 Waste Water Capacity and Demand

WWTP	Muine Bheag & Leighlinbridge D0090-01
Urban Area Demand (p.e.)	8,363
WWTP Design Capacity (p.e.)	4,000
Treatment Level	Secondary and Phosphorus Removal
2014 Status	Pass

Irish Water have acknowledged that this plant is overloaded and have advised that this plant is a candidate site for inclusion in the Emerging Capital Investment Plan.

4.7.1.4 Drinking Water Performance

Drinking water must be clean and wholesome. That means it must meet the relevant water quality standards and must not contain any other substance or micro-organism in concentrations or numbers that constitute a potential danger to human health.

Compliance with the drinking water requirements is determined by comparing the results of analyses submitted by water suppliers to the standard for 48 parameters specified in the European Communities (Drinking Water) Regulations (No. 2), 2007. To ensure that these standards are met, each water supply must be monitored on a regular basis.

Under Section 58 of the Environmental Protection Agency Act 1992 the EPA is required to collect and verify monitoring results for all water supplies in Ireland covered by the European Communities (Drinking Water) Regulations, 2000. The EPA publishes their results in annual reports that are supported by Remedial Action Lists (RALs). The RAL identifies water supplies that do not comply with the Regulations mentioned above.

The Bagenalstown Urban Water Supply Scheme is not listed on the EPA's most recent (Q3 2016)

Remedial Action List (a list of public water supplies where remedial action is required to ensure compliance with drinking water standards).

4.7.1.5 Capacity and Demand

The mains water supply for Muine Bheag / Royal Oak is available from the Bagenalstown Water Supply Scheme. The Bagenalstown Water Supply Scheme supplies drinking water to the area and is supplied by two water treatment plants, namely Bagenalstown Water Treatment Plant (WTP) and Royal Oak WTP.

The Bagenalstown WTP is supplied by three boreholes, 2 boreholes at the Treatment Plant and 1 borehole located near McGrath Park. The Treatment Plant has the capacity to supply 1,800 cubic metres per day, but currently supplies the town with 1,500 cubic metres per day.

The Royal Oak Water Treatment Plant is located in the Royal Oak Business Park and is supplied by two wells located at the treatment plant. This treatment plant has the capacity to supply 1,800 cubic metres per day but currently supplies 600 cubic metres to the town.

The current water supply is considered to have adequate (headroom) capacity available and would cater for any future development growth during the lifetime of this plan. A mains replacement scheme has been approved for Muine Bheag.

4.7.2 Waste Management

In March 2011, the EC (Waste Directive) Regulations 2011 came into force. As well as including new re-use and recycling targets, these Regulations included a requirement to evaluate existing waste management plans by 31 December 2012 and make a recommendation to revise or replace the existing plans. An evaluation of the South East Plan was carried out and it was recommended that the Plan be replaced with a new plan. In 2015 a new plan was published; the Southern Region Waste Management Plan 2015 – 2021 with an objective to set out a framework for the prevention and management of waste on a regional scale.

With regard to domestic waste collection, the refuse collection service in County Carlow is privatised. A number of domestic waste collection companies collect waste in the Muine

Bheag / Royal Oak area. Collectors provide a segregated collection service, using waste collection permits issued by Carlow County Council. Waste collected in Muine Bheag is disposed of mainly at the council's central landfill and civic amenity site at Powerstown.

The Council has provided bring banks for the collection of glass, aluminium cans and textiles at McGrath Hall on Station Road. In addition, the Civic Amenity Centre in Powerstown provides for a wide range of household recycling materials. The Council will continue to encourage recycling and the minimisation of waste through its environmental education programme and the Green-Schools programme.

4.7.3 Transport

Muine Bheag / Royal Oak is located approximately 20km from Carlow town and approximately 23km from Kilkenny on the R705 Leighlinbridge / Carlow to Borris / New Ross regional road. The town is also located on the R724 regional road to Kildavin and Bunclody. It is also served by a railway station and is strategically located proximate to the R448 and the M9 Dublin to Waterford motorway.

4.7.4 Existing Problems

No existing conflicts with legislative objectives governing material assets have been identified.

4.8 Cultural Heritage

4.8.1 Introduction

Heritage, by definition, means inherited properties, inherited characteristics and anything transmitted by past ages and ancestors. It covers everything, from objects and buildings to the environment. Cultural heritage includes physical buildings, structures and objects, complete or in part, which have been left on the landscape by previous and indeed current generations.

4.8.2 Archaeological Heritage

4.8.2.1 Introduction

Archaeology is the study of past societies through the material remains left by those societies and the evidence of their environment. Archaeological heritage consists of such

material remains (whether in the form of sites and monuments or artefacts in the sense of moveable objects) and environmental evidence. As archaeological heritage can be used to gain knowledge and understanding of the past, it is of great cultural and scientific importance.

Archaeological sites and monuments vary greatly in form and date; examples include earthworks of different types and periods, (e.g. early historic ringforts and prehistoric burial mounds), megalithic tombs from the Prehistoric period, medieval buildings, urban archaeological deposits and underwater features.

Archaeological sites may have no visible surface features; the surface features of an archaeological site may have decayed completely or been deliberately removed but archaeological deposits and features may survive beneath the surface.

4.8.2.2 Record of Monuments and Places

Muine Bheag / Royal Oak's archaeological heritage is protected under the National Monuments Acts (1930-2004), Natural Cultural Institutions Act 1997 and the Planning Acts. The Record of Monuments and Places (RMP) is an inventory, established under Section 12 of the National Monuments (Amendment) Act 1994, of sites and areas of archaeological significance, numbered and mapped. The RMP includes all known monuments and sites of archaeological importance dating to before 1700 AD, and some sites that date from after 1700 AD.

There are five designated areas of archaeological potential within Muine Bheag's zoning boundary as follows:

- W016-039 in Moneybeg - an Enclosure site;
- CW016-040 in Kilree - an Enclosure site;
- CW016-104 in Kilree - a Trackway site;
- CW016-108 in Moneybeg - an Enclosure site; and
- CW016-109 in Moneybeg - an Enclosure site.

¹¹ Curtilage is normally taken to be the parcel of ground immediately associated with the Protected Structure, or in use for the purposes of the structure. Protection extends to the buildings and land lying within the curtilage. While the curtilage sometimes coincides with the present property boundary, it can originally have included lands, features or even

Figure 4.11 shows the spatial distribution of entries to the RMP in the Muine Bheag / Royal Oak area.

4.8.3 Architectural Heritage

4.8.3.1 Introduction

The term architectural heritage is defined in the Architectural Heritage (National Inventory) and Historic Monuments Act 1999 as meaning all: structures and buildings together with their settings and attendant grounds, fixtures and fittings; groups of structures and buildings; and, sites which are of technical, historical, archaeological, artistic, cultural, scientific, social, or technical interest.

4.8.3.2 Record of Protected Structures

The Record of Protected Structures (RPS) included in the Plan is legislated for under Section 12 and Section 51 of the Planning and Development Act 2000 as amended.

Protected Structures are defined in the Planning and Development Act 2000 as amended as structures, or parts of structures that are of special interest from an architectural, historical, archaeological, artistic, cultural, scientific, social or technical point of view.

In relation to a protected structure or proposed protected structure, the following are encompassed:

- (i) the interior of the structure;
- (ii) the land lying within the curtilage¹¹ of the structure;
- (iii) any other structures lying within that curtilage and their interiors; and,
- (iv) all fixtures and features which form part of the interior or exterior of any structure or structures referred to in subparagraph (i) or (iii).

Current entries to the RPS in Muine Bheag / Royal Oak are mapped on Figure 4.12. Examples include the Courthouse building, St. Andrew's Church, St. Mary's Church of Ireland,

buildings now in separate ownership, e.g. the lodge of a former country house, or the garden features located in land subsequently sold off. Such lands are described as being attendant grounds, and the protection extends to them just as if they were still within the curtilage of the Protected Structure.

the Railway Station, the Garda Station on Kilree Street and the Post Office on Main Street.

Muine Bheag was historically an affluent town with a tradition of milling, and having its own salt works and gasworks during the 19th Century and early 20th Century. Following the decline of canal-based transport, due to the rail line through the town, the milling industry was replaced by the growth of an agricultural based engineering industry.

In recent years, a revival of the maltings industry has occurred with both the current and ongoing reuse and redevelopment of the Dunleckney Maltings buildings by Carlow Brewing Company and Holloden House at Royal Oak by Walsh's Whiskey Distillery.

In addition to mapping entries to the RPS, Figure 4.12 maps entries to the National Inventory of Architectural Heritage (NIAH) (these provide the basis for the recommendations of the Minister for Arts, Heritage and the Gaeltacht for the inclusion of particular structures into the RPS).

4.8.4 Existing Problems

The context of archaeological and architectural heritage has changed over time within the Plan area however no existing conflicts with legislative objectives governing archaeological and architectural heritage have been identified.

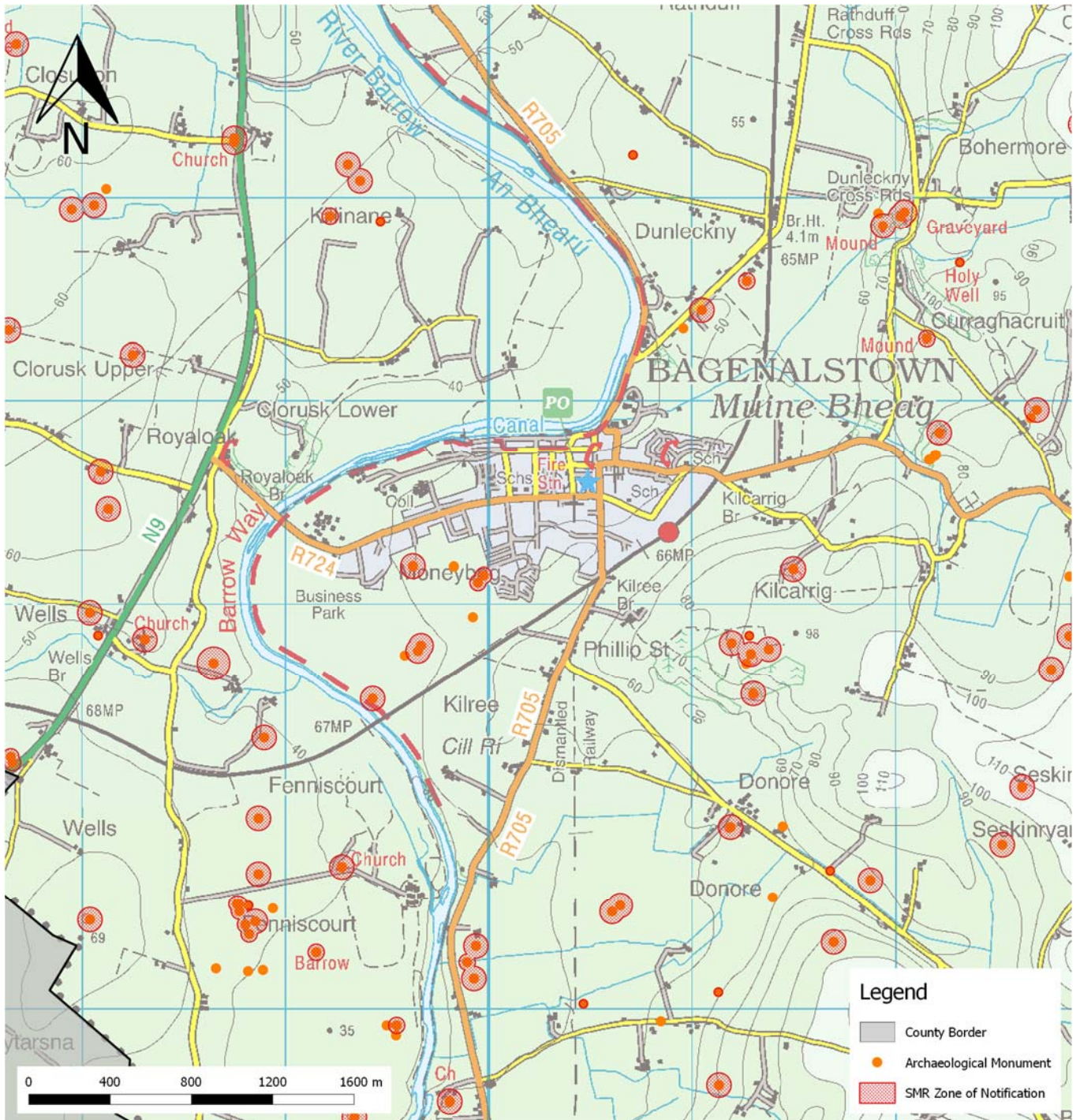


Figure 4.11 Archaeological Heritage - Entries to the Record of Monuments and Places and Zones of Notification

Source: Carlow County Council (2016)

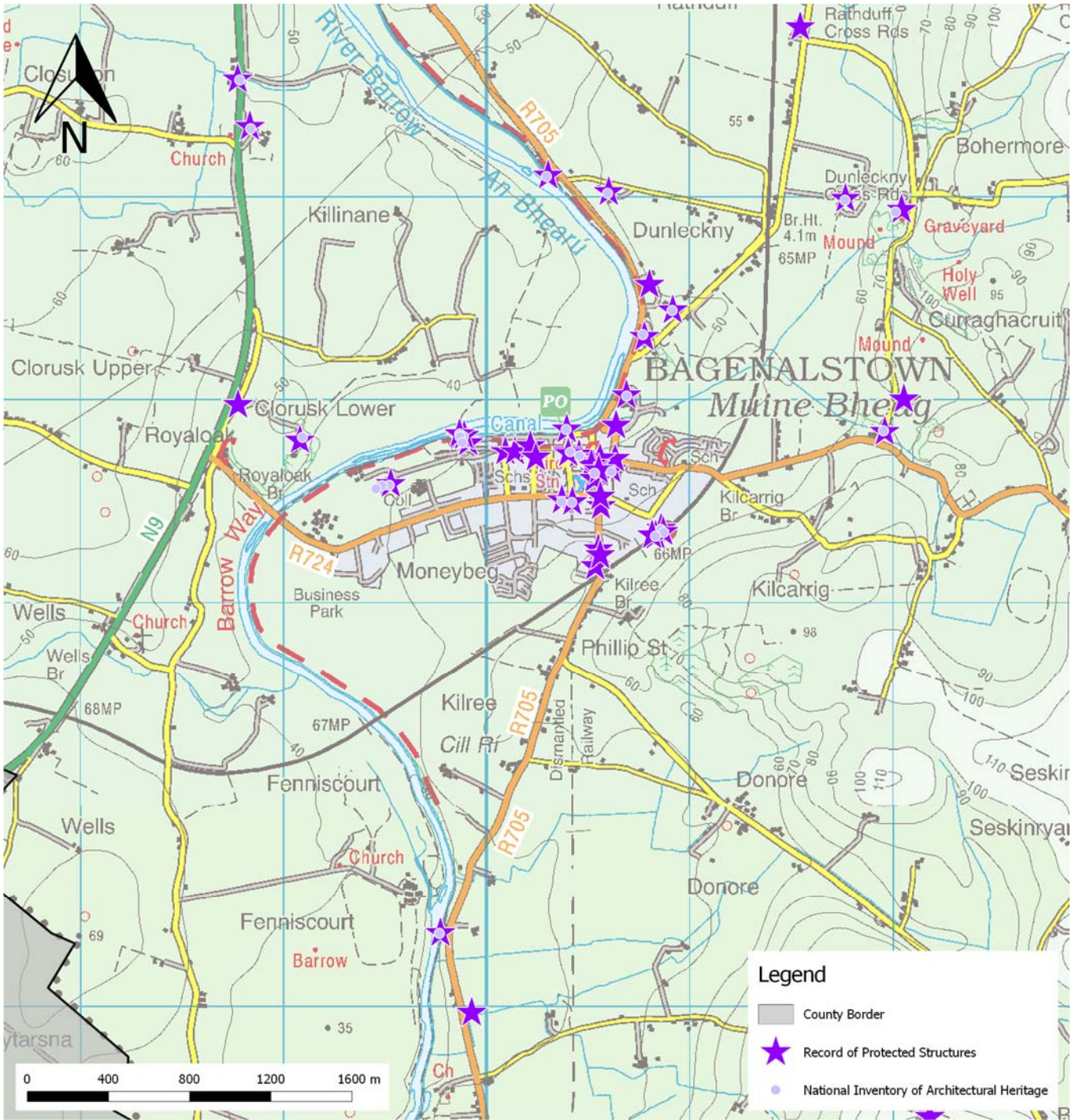


Figure 4.12 Architectural Heritage - Entries to the RPS and NIAH

Source: Carlow County Council (2016)

4.9 Landscape

4.9.1 Introduction

Landscapes are areas that are perceived by people and are made up of a number of layers: landform, which results from geological and geomorphological history; landcover, which includes vegetation, water, human settlements, and; human values that are a result of historical, cultural, religious and other understandings and interactions with landform and landcover.

4.9.2 Legislation

The importance of landscape and visual amenity and the role of its protection are recognised in the Planning and Development Act 2000 as amended, which requires that Plans include objectives for the preservation of the landscape, views and the amenities of places and features of natural beauty.

4.9.3 Landscape Character Assessment

4.9.3.1 Overview

A Landscape Character Assessment (LCA) is a study of a given landscape to determine its 'character'. Landscape character is the combination of physical, as well as, perceived aspects of the landscape.

The Carlow LCA was produced as part of the Carlow County Development Plan 2015-2021. The LCA divides the County into Landscape Character Areas i.e. unique, geographically specific areas of a particular landscape type.

The aim of the County Carlow LCA is to provide a tool for decision making regarding development control and to influence landscape policy at local level. In considering landscape character in the area, the Council acknowledges the importance of taking into account adjoining landscape character, landscape features and designations, including those in adjoining counties.

There are five Principal Landscape Character Areas. Muine Bheag / Royal Oak falls within the Central Lowlands Landscape Character Area.

Components of the landscape within and adjacent to Muine Bheag / Royal Oak which contribute towards landscape character include the River Barrow, hedgerows and lines of trees.

4.9.3.2 Key Characteristics of the Central Lowlands Character Area¹²

The central plain landscape character area occupies a substantial portion of the County. The landscape is primarily rural, with medium to quite large fields defined by well-maintained and generally low hedges and occasional to frequent hedgerow trees. Since the 1950s, field enlargement has been taken place to accommodate larger farm machinery, and has involved the removal of hedges and trees. The boundary of the area is based on soil types and topography. Its historically determined land uses derive from the high fertility of the soil and the gentle topography. The topography is underlain by limestone in the western portion of the area (flanking the Barrow River), and by granite in the east. A dense network of local roads traverses the area in addition to the N80 and the N9. There are also isolated gravel and quarry workings in the area. 60% of the County's population lives in the northern portion of the Character Area. The County's major settlements are also located in the Character Area. They include Carlow town, Tullow, Muine Bheag and Leighlinbridge. The majority of the County's designated habitats are also in the Character Area including the Barrow/ Nore River Valleys, the Slaney River Valley, Ardristan Fen, Oak Wood, and Borris Estate.

4.9.4 Landscape Sensitivity

Landscape sensitivity mapping was prepared for the Carlow LCA by according sensitivity rating to the existing adopted Principal Landscape Character Areas. These boundaries were based on extensive LCA fieldwork augmented by ensuring conformity with a number of 'mappable' and natural factors such as landcover, soils, geology and slope. A large portion of the built area in Muine Bheag is identified as having the least sensitivity rating, a rating of '1'. However, areas to the north and south of the Plan area adjacent to the River Barrow, have been attributed with a higher rating, a rating of '4'. Other lands to the east and west of the town are attributed with a sensitivity rating of '2'. Landscape sensitivity is mapped on Figure 4.13.

¹² Source: Carlow Landscape Character Assessment

4.9.5 Views and Prospects

It is the policy of the Council to protect scenic views and routes within the County. The Plan area itself does not contain protected scenic views or routes. However, there is a protected viewpoint to the north of the Plan area, which provides a view of town from a point to the north of an entrance along the River Barrow.

4.9.6 Existing Environmental Problems

Developments have resulted in changes to the visual appearance of the landscape within the Plan area however legislative objectives governing landscape and visual appearance were not identified as being conflicted with.

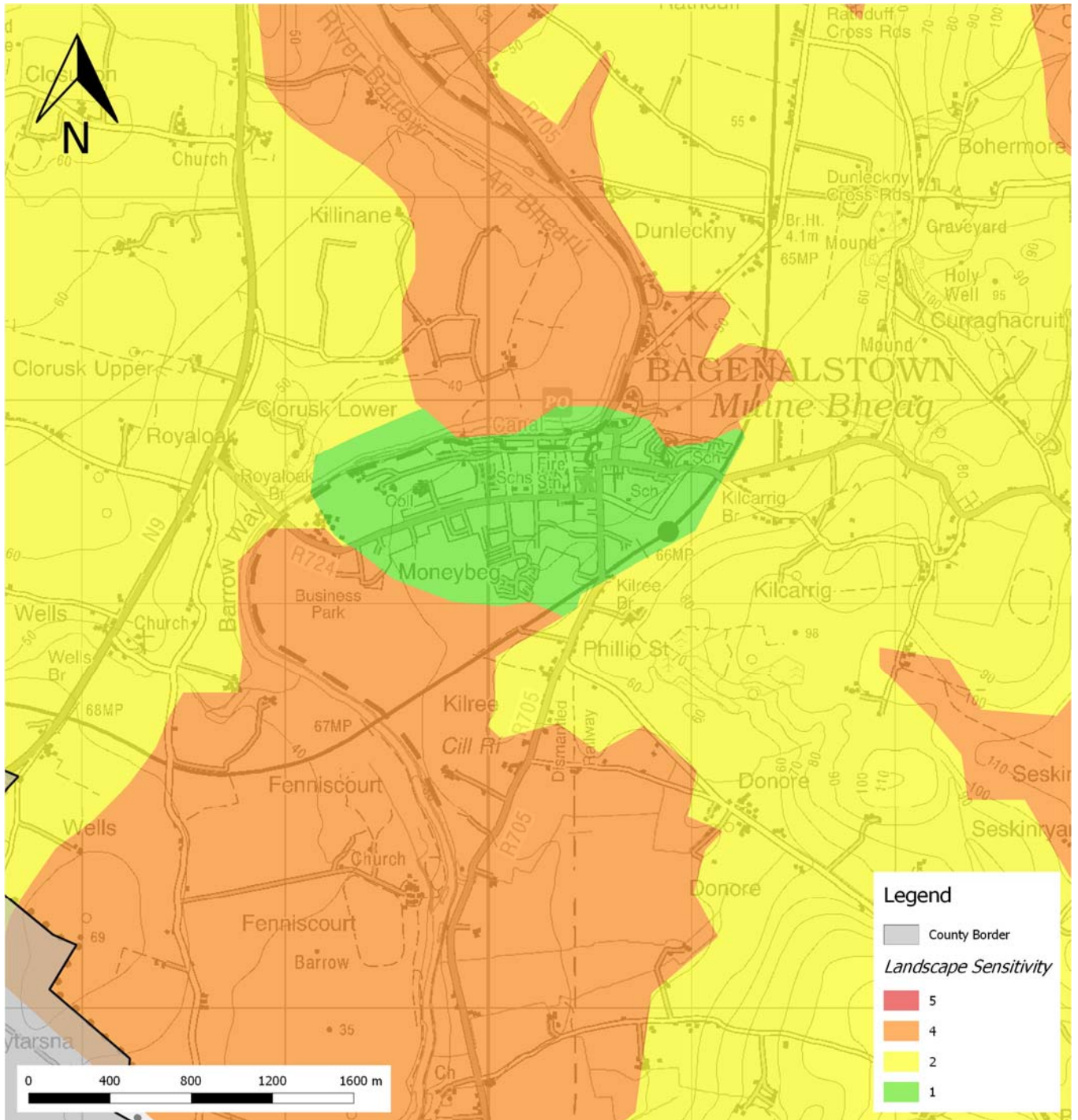


Figure 4.13 Landscape Sensitivity

Source: Carlow County Council (2015)

4.10 Overlay of Environmental Sensitivities

4.10.1 Introduction and Methodology

In order to identify where most sensitivities within Muine Bheag / Royal Oak occur, a number of the environmental sensitivities described above were weighted and mapped overlapping each other. Figure 4.14 provides an overlay of environmental sensitivities for the town.

It is emphasised that the occurrence of environmental sensitivities does not preclude development; rather it flags at a strategic level that the mitigation measures - which have already been integrated into the Plan - will need to be complied with in order to ensure that the implementation of the Plan contributes towards environmental protection.

Environmental sensitivities are indicated by colours which range from acute vulnerability (brown), extreme vulnerability (red) to high vulnerability (dark orange) to elevated vulnerability (light orange) to moderate vulnerability (yellow) to low vulnerability (green). Only low, moderate and elevated levels of vulnerability occur within and adjacent to the Plan area. Where the mapping shows a concentration of environmental sensitivities there is an increased likelihood that development will conflict with these sensitivities and cause environmental deterioration.

A weighting system applied through Geographical Information System (GIS) software was used in order to calculate the vulnerability of all areas in the town. Environmental considerations are given equal weight as follows, with a slight differentiation is made in certain layers:

- Ecological designations (candidate Special Areas of Conservation - 10 points - and proposed Natural Heritage Areas - 5 points);
- Cultural heritage (Entries to the Record of Protected Structures and entries to the Record Monuments and Places - 10 points);

- Landscape character areas of very high (10 points) and high value (5 points);
- Scenic routes and views (10 points);
- Sensitive landcover categories (Inland marshes and water bodies - 10 points);
- Surface and groundwaters with bad and poor (10 points) and moderate, good and high (5 points) status;
- Aquifers which are highly (5 points) or extremely (10 points) vulnerable to pollution; and

Indicative flood zones A (10 points) and B (5 points) from the Strategic Flood Risk Assessment.

The scores for each area are added together in order to determine overall vulnerability as shown on Table 4.4.

Score	Vulnerability Class
5-15	Low
20-25	Moderate
30-35	Elevated
40-45	High
50-60	Extreme
>60	Acute

Table 4.4 Overall Vulnerability Classes

4.10.2 Conclusions

The most sensitive areas within Muine Bheag / Royal Oak are located along the watercourses through the Plan area (on account of the sensitivity of the River Barrow, fluvial flood risk and Natura 2000 site designations). Sensitivity ratings vary along the watercourse from medium to extreme.

Other sensitive areas are also identified within the town (these largely relate to cultural heritage designations), however, these are of a comparatively lower rating in comparison to the sensitivities along the river.

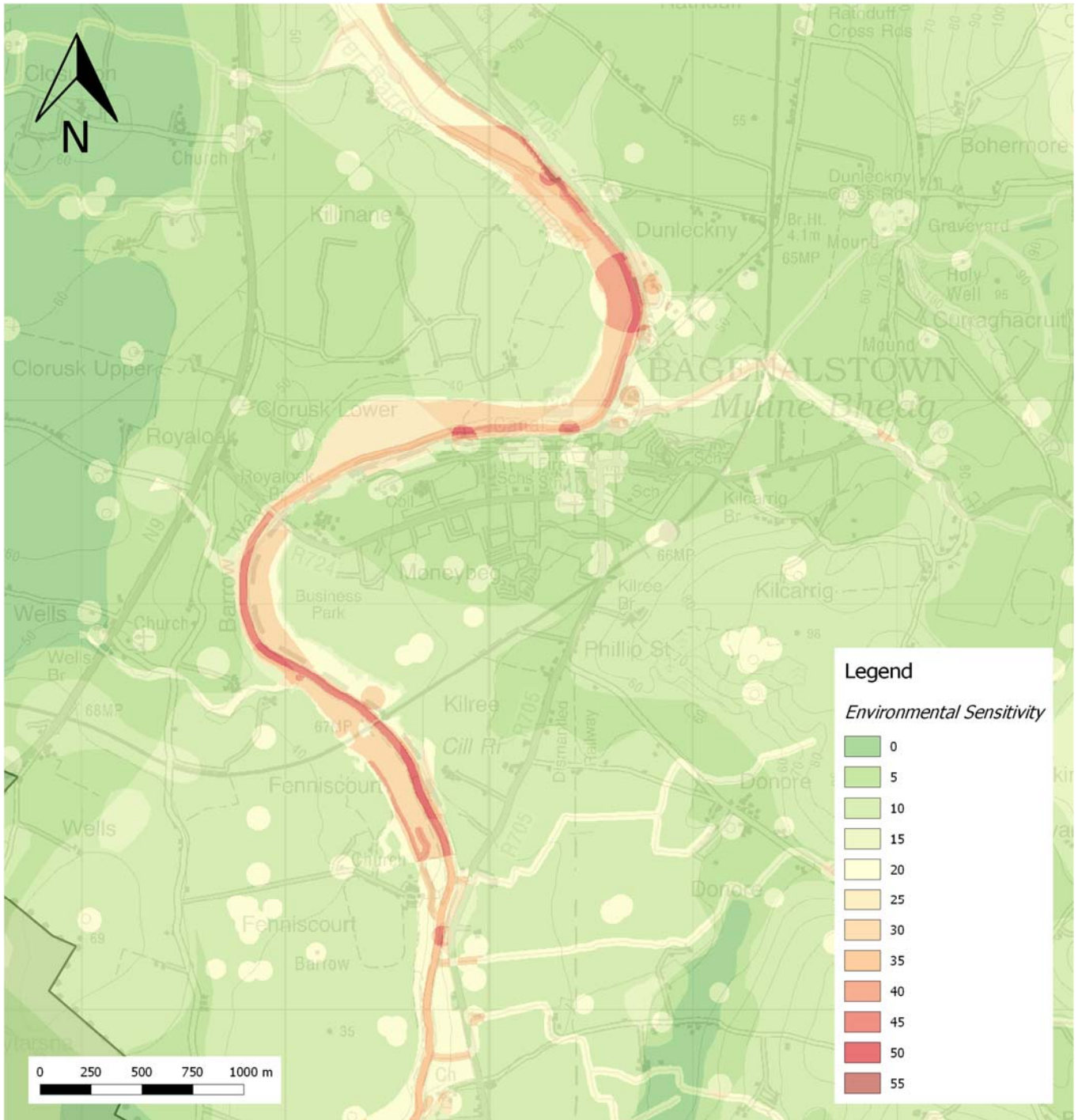


Figure 4.14 Overlay of Environmental Sensitivities

Source: CAAS (2016)

Section 5 Strategic Environmental Objectives

Strategic Environmental Objectives (SEOs) are methodological measures developed from policies that generally govern environmental protection objectives established at international, Community or Member State level e.g. the environmental protection objectives of various European Directives which have been transposed into Irish law and which are required to be implemented.

The SEOs are set out under a range of topics and are used as standards against which the provisions of the Plan and the alternatives are evaluated in order to help identify which provisions would be likely to result in significant environmental effects and where such effects would be likely to occur, if - in the case of adverse effects - unmitigated.

The SEOs are linked to indicators that can facilitate monitoring the environmental effects of the Plan as well identifying targets which the Plan can help work towards.

All SEOs, indicators and targets are provided on Table 5.1 overleaf. Further detail on legislation, plans and programmes are provided under Section 2 (and associated Appendix I "Relationship with Legislation and Other Plans and Programmes") and Section 4.

Table 5.1 Strategic Environmental Objectives, Indicators and Targets

Environmental Component	Strategic Environmental Objectives	Selected Indicator(s)	Selected Target(s)
Biodiversity, Flora and Fauna	B1: To ensure compliance with the Habitats and Birds Directives with regard to the protection of Natura 2000 Sites and Annexed habitats and species ¹³	B1: Conservation status of habitats and species as assessed under Article 17 of the Habitats Directive	Maintenance of favourable conservation status for all habitats and species protected under national and international legislation to be unaffected by implementation of the Plan ¹⁴
	B2: To ensure compliance with Article 10 of the Habitats Directive with regard to the management of features of the landscape which - by virtue of their linear and continuous structure or their function act as stepping stones (designated or not) - are of major importance for wild fauna and flora and essential for the migration, dispersal and genetic exchange of wild species	B2: Percentage loss of functional connectivity without remediation resulting from development provided for by the Plan	B2: No significant ecological networks or parts thereof which provide functional connectivity to be lost without remediation resulting from development provided for in the Plan
	B3: To avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites ¹⁵ and to ensure compliance with the Wildlife Acts 1976-2010 with regard to the protection of species listed on Schedule 5 of the principal Act	B3i: Number of significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Plan B3ii: Number of significant impacts on the protection of species listed on Schedule 5 of the Wildlife Act 1976	B3i: Avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Plan B3ii: No significant impacts on the protection of species listed on Schedule 5 of the Wildlife Act 1976
Population and Human Health	PHH1: To protect human health from exposure to incompatible landuses	PHH1: Occurrence (any) of a spatially concentrated deterioration in human health arising from environmental factors resulting from development provided for by the Plan, as identified by the Health Service Executive and Environmental Protection Agency	PHH1: No spatial concentrations of health problems arising from environmental factors as a result of implementing the Plan
Soil	S1: To avoid damage to the hydrogeological and ecological function of the soil resource	S1: Soil extent and hydraulic connectivity	S1: To minimise reductions in soil extent and hydraulic connectivity
Water	W1: To maintain and improve, where possible, the quality and status of surface waters	W1: Classification of Overall Status (comprised of ecological and chemical status) under the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009)	W1: Not to cause deterioration in the status of any surface water or affect the ability of any surface water to achieve 'good status' ¹⁶

¹³ 'Annexed habitats and species' refer to those listed under Annex I, II & IV of the EU Habitats Directive and Annex I of the EU Birds Directive.

¹⁴ Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:

- (a) no alternative solution available;
- (b) imperative reasons of overriding public interest for the plan to proceed; and
- (c) adequate compensatory measures in place.

¹⁵ The Planning and Development Act 2000 as amended defines a 'wildlife site' as including Natural Heritage Areas (NHAs) and proposed NHAs.

¹⁶ Good status as defined by the WFD equates to approximately Q4 in the current national scheme of biological classification of rivers and mesotrophic in the trophic classification of lakes, as set out by the EPA.

Environmental Component	Strategic Environmental Objectives	Selected Indicator(s)	Selected Target(s)
	W2: To prevent pollution and contamination of ground water	W2: Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC	W2: Not to affect the ability of groundwaters to comply with Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC
	W3: To comply as appropriate with the provisions of the Flood Risk Management Guidelines for Planning Authorities	W3: Number of incompatible developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk	W3: Minimise developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk in compliance with The Planning System and Flood Risk Management Guidelines for Planning Authorities
Material Assets	M1: To serve new development with adequate and appropriate waste water treatment	M1: Number of new developments granted permission which can be adequately and appropriately served with waste water treatment over the lifetime of the Plan	M1: All new developments granted permission to be connected to and adequately and appropriately served by waste water treatment over the lifetime of the Plan
	M2: To serve new development with adequate drinking water that is both wholesome and clean	M2: Number of non-compliances with the 48 parameters identified in the European Communities (Drinking Water) Regulations (No. 2) 2007 which present a potential danger to human health as a result of implementing the Plan	M2: No non-compliances with the 48 parameters identified in the European Communities (Drinking Water) Regulations (No. 2) 2007 which present a potential danger to human health as a result of implementing the Plan
	M3: To reduce waste volumes, minimise waste to landfill and increase recycling and reuse	M3i: Total collected and brought household waste M3ii: Packaging recovered (t) by self-complying packagers	M3i: Minimise increases in and, where possible, reduce household waste generation M3ii: Maximise increases in packaging recovered (t) by self-complying packagers
Air and Climatic Factors	C1: To reduce travel related emissions to air and to encourage modal change from car to more sustainable forms of transport	C1: Percentage of population travelling to work, school or college by public transport or non-mechanical means	C1: An increase in the percentage of the population travelling to work, school or college by public transport or non-mechanical means
Cultural Heritage	CH1: To protect archaeological heritage including entries to the Record of Monuments and Places and/or their context	CH1: Percentage of entries to the Record of Monuments and Places - and the context these entries within the surrounding landscape where relevant - protected from adverse effects resulting from development which is granted permission under the Plan	CH1: Protect entries to the Record of Monuments and Places - and the context of these entries within the surrounding landscape where relevant – protected from adverse effects resulting from development which is granted permission under the Plan
	CH2: To protect architectural heritage including entries to the Record of Protected Structures and their context	CH2: Percentage of entries to the Record of Protected Structures and their context protected from adverse effects resulting from development which is granted permission under the Plan	CH2: Protect entries to the Record of Protected Structures and their context from adverse effects resulting from development which is granted permission under the Plan
Landscape	L1: To avoid significant adverse impacts on the landscape	L1: Number of complaints received from statutory consultees regarding avoidable impacts on the landscape resulting from development which is granted permission under the Plan	L1: No developments permitted which result in avoidable impacts on the landscape resulting from development which is granted permission under the Plan

Section 6 Alternative Development Strategies

The SEA Directive requires that reasonable alternatives (taking into account the objectives and the geographical scope of the plan or programme) are identified, described and evaluated for their likely significant effects on the environment.

The description of the environmental baseline (both maps and text) and Strategic Environmental Objectives (SEOs) are used in the evaluation of alternatives.

Carlow County Council in preparing the Local Area Plan 2017-2023 developed three alternative development strategies for Muine Bheag / Royal Oak as follows:

- Development Scenario 1: A general continuation in accordance with the development objectives of the current 2010 – 2016 Plan;
- Development Scenario 2: To provide high density residential, retail and employment development on vacant and key opportunity sites in the town only; and
- Development Scenario 3: To consolidate and strengthen the town centre and provide for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner.

These alternatives are detailed on Table 6.1 below and mapped on Figure 6.1, Figure 6.2 and Figure 6.3.

Table 6.1 Description of Alternative Development Strategies

	Alternative Development Strategy 1	Alternative Development Strategy 2	Alternative Development Strategy 3
Summary	Development Scenario 1: A general continuation in accordance with the development objectives of the current 2010 – 2016 Plan.	Development Scenario 2: To provide high density residential, retail and employment development on vacant and key opportunity sites in the town only.	Development Scenario 3: To consolidate and strengthen the town centre and provide for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner.
Features	<ul style="list-style-type: none"> ○ Expansion on the suburbs of the town of residential, mixed use and industrial zoning with no direct link to the town centre. ○ Encourage new retail / commercial development, in a sequential manner, to existing vacant and brownfield sites. However where sequential tests have exhausted these development opportunities, facilitate retail / commercial development on other appropriate sites within the town. ○ Opportunities for new residential development provided to the north and south of the town. ○ New areas of residential and commercial on the periphery of the development envelope. ○ Improvement of existing pedestrian provision within the town and also to the town centre from peripheral areas, where pedestrian access is limited, from southern side of town across Kilree Bridge and from eastern side of town across Kilcarrig Bridge, both too narrow for pedestrian access. 	<ul style="list-style-type: none"> ○ Expansion of the town due to focus of new development on key vacant sites throughout the town. ○ Consolidation of the existing town centre by encouraging the development of vacant or underutilised sites such as along the quays and on Regent Street (formerly Bargain City Carpets) in a sensitive and appropriate manner. ○ Encourage new retail / commercial development, in a sequential manner, to existing vacant and brownfield sites. ○ New areas of residential or commercial on key vacant and opportunity sites throughout the development envelope. These lands provide an opportunity to provide appropriate residential development including a range of different dwelling types in close proximity to the town centre, educational facilities and recreational areas. ○ Seek improvement of pedestrian links to enhance the character and accessibility within the town by greater linkages throughout. 	<ul style="list-style-type: none"> ○ Consolidation of mixed uses in Town Centre zoning encouraging the development of underutilised sites in a sensitive and appropriate manner. ○ Residential development is phased outward from the town centre with opportunities for new residential development provided closer to the town centre. No new areas of residential or commercial on the periphery of the development envelope. ○ Encourage new retail / commercial development within the town centre. ○ Seek improvement of pedestrian links to enhance the character and accessibility within the town by greater linkages throughout. ○ Maximising the potential of the River Barrow, through the creation of a mix of uses, high quality public realm and public spaces. ○ Creation of a strategic employment land bank to the west of the town and its associated road / transport network, and the expansion of the existing Business Park and Industrial Estate.

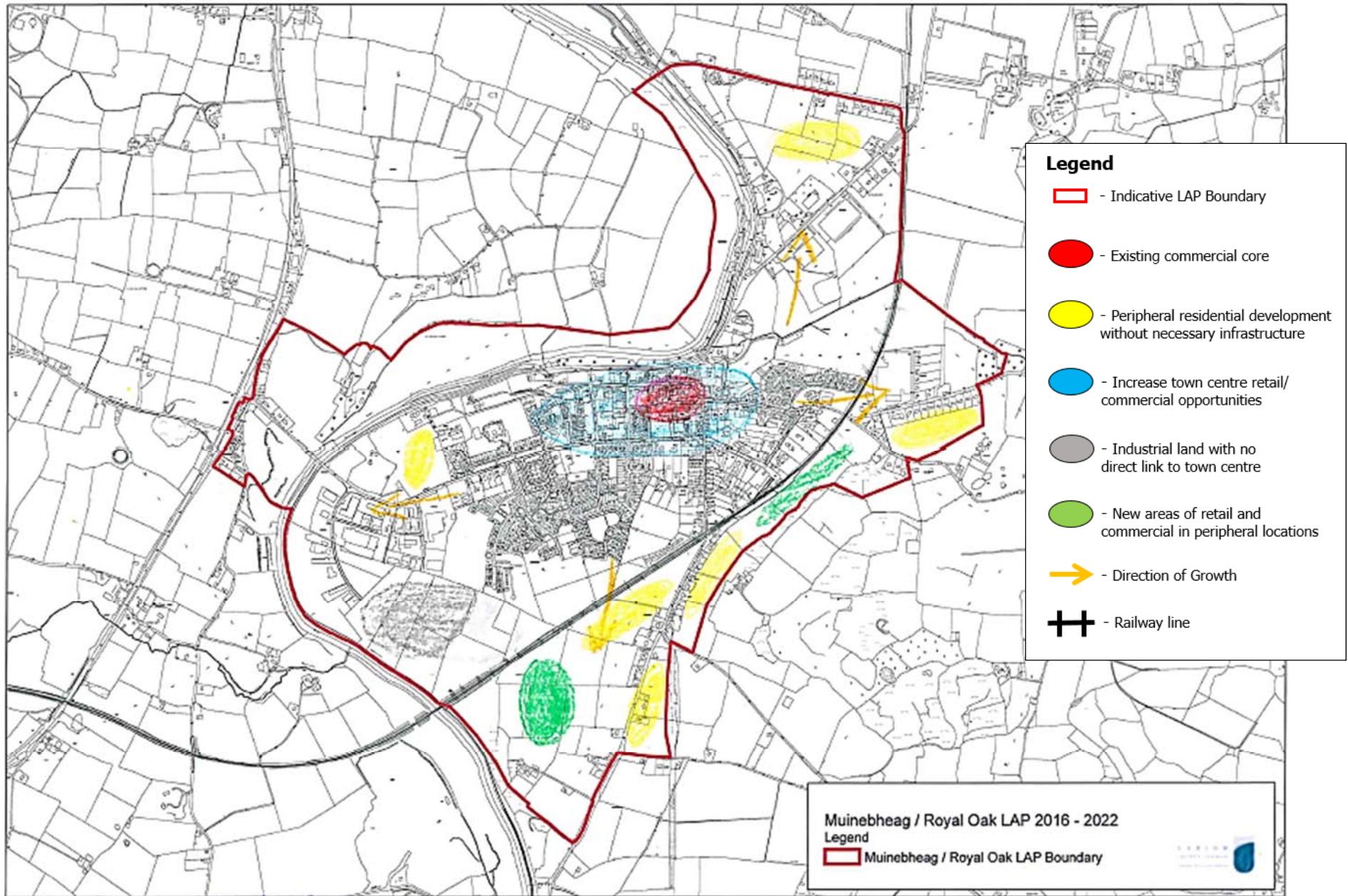


Figure 6.1 Alternative Development Strategy 1

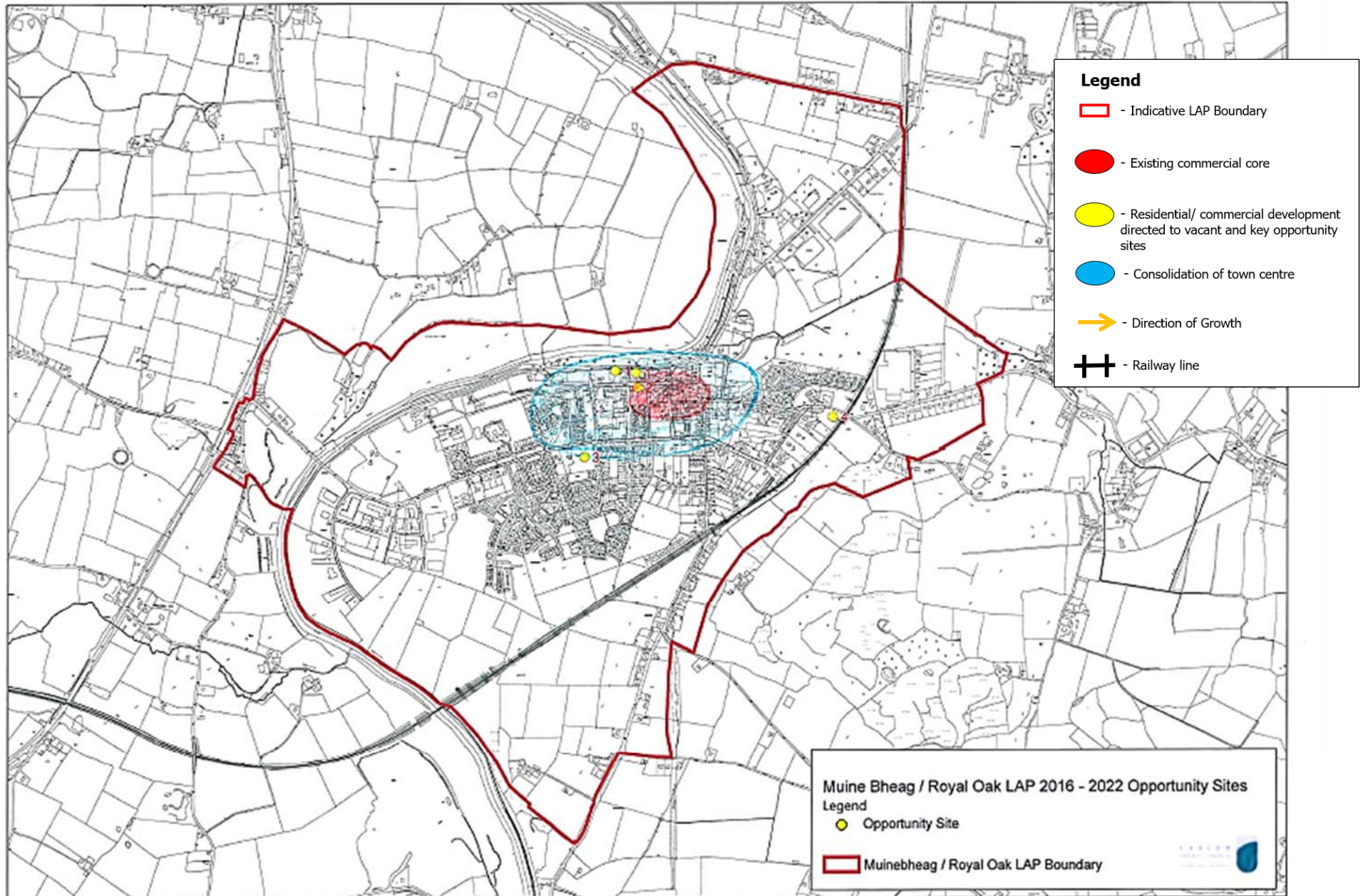


Figure 6.2 Alternative Development Strategy 2

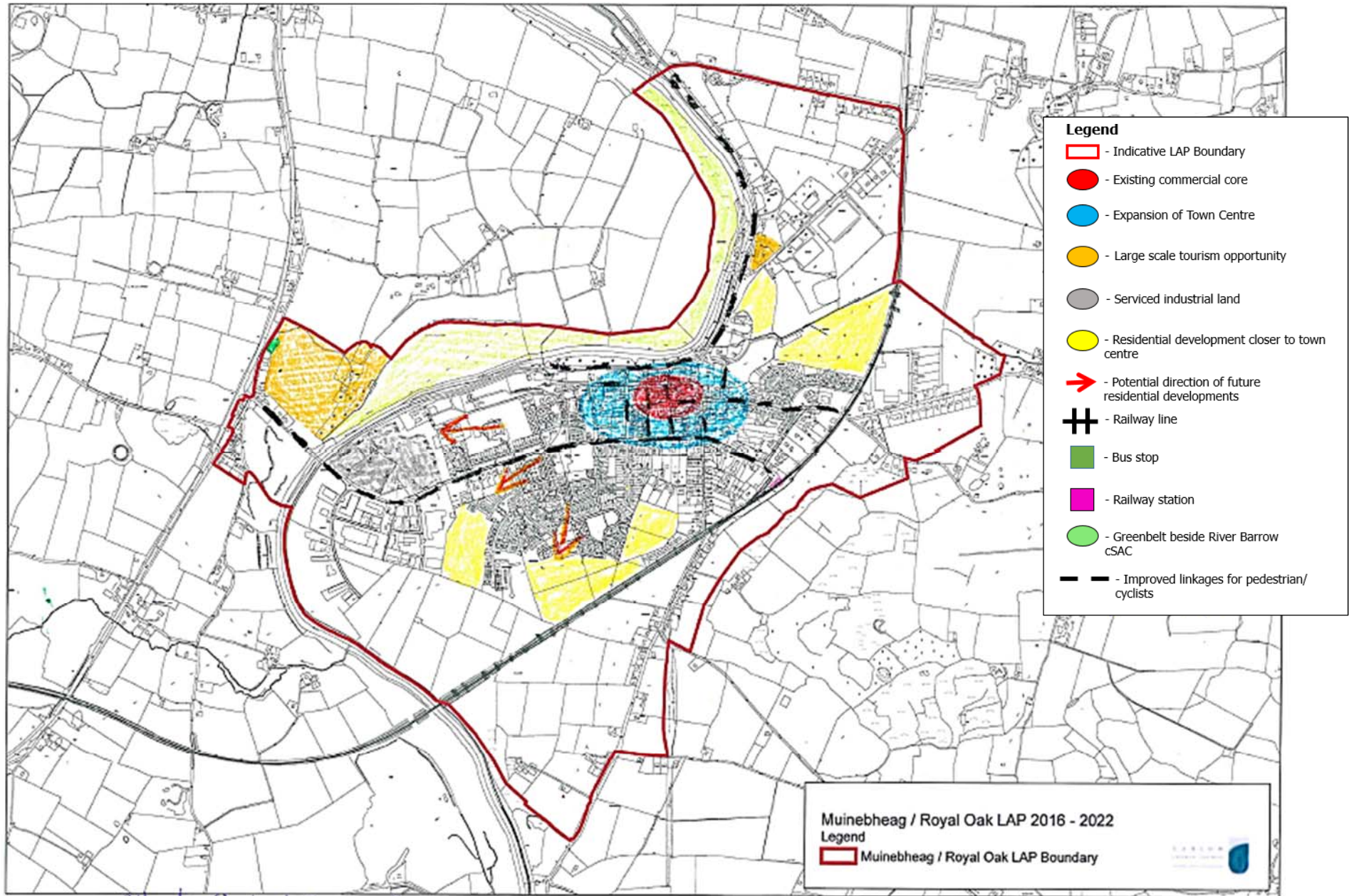


Figure 6.3 Alternative Development Strategy 3

Section 7 Evaluation of Alternatives

7.1 Methodology

The description of the environmental baseline together with the maps provided in Section 4 of this report (including the Environmental Sensitivity Overlay Mapping) is used in the evaluation.

Strategic Environmental Objectives (SEOs) identified in Section 5 and reproduced overleaf are also used.

The provisions of the alternatives are evaluated using compatibility criteria (see Table 7.2 below) in order to determine how they would be likely to affect the status of the SEOs. The SEOs and the alternatives are arrayed against each other to identify which interactions - if any - would cause effects on specific components of the environment. Where the appraisal identifies a likely conflict with the status of an SEO the relevant SEO code is entered into the conflict column - e.g. B1 which stands for the SEO likely to be affected - in this instance 'to ensure compliance with the Habitats and Birds Directives with regard to the protection of Natura 2000 Sites and Annexed habitats and species'¹⁷.

The interactions identified are reflective of likely significant environmental effects¹⁸;

1. Interactions that would be likely to improve the status of a particular SEO would be likely to result in a significant positive effect on the environmental component to which the SEO relates. The extent of positive effects which would be likely to occur varies and there are two 'likely to improve columns' (see Table 7.2)
2. Interactions that would potentially conflict with the status of an SEO and would be likely to be mitigated are divided into two groups:
 - o Interactions that would conflict the least with the status of SEOs – these would be likely to be mitigated to a greater

degree and significant adverse effects would be less likely;

- o Interactions that would conflict the most with status of SEOs - these would be likely to be mitigated to a lesser degree and significant adverse effects would be more likely.

¹⁷ 'Annexed habitats and species' refers to those listed under Annex I, II & IV of the EU Habitats Directive and Annex I of the EU Birds Directive.

¹⁸ These effects include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects.

Table 7.1 Strategic Environmental Objectives²⁰

SEO Code	SEO
B1	To ensure compliance with the Habitats and Birds Directives with regard to the protection of Natura 2000 Sites and Annexed habitats and species ¹⁹
B2	To ensure compliance with Article 10 of the Habitats Directive with regard to the management of features of the landscape which - by virtue of their linear and continuous structure or their function act as stepping stones - are of significant importance for wild fauna and flora and/or essential for the migration, dispersal and genetic exchange of wild species
B3	To avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites and to ensure compliance with the Wildlife Acts 1976-2010 with regard to the protection of species listed on Schedule 5 of the principal Act
PHH1	To protect populations and human health from exposure to incompatible landuses
S1	To avoid damage to the hydrogeological and ecological function of the soil resource
W1	To maintain and improve, where possible, the quality and status of surface waters
W2	To prevent pollution and contamination of ground water
W3	To comply as appropriate with the provisions of the Flood Risk Management Guidelines
M1	To serve new development with adequate and appropriate waste water treatment
M2	To serve new development with adequate drinking water that is both wholesome and clean
M3	To reduce waste volumes, minimise waste to landfill and increase recycling and reuse
C1	To reduce travel related emissions to air and to encourage modal change from car to more sustainable forms of transport
CH1	To protect archaeological heritage including entries to the Record of Monuments and Places and/or their context
CH2	To protect architectural heritage including entries to the Record of Protected Structures and their context
L1	To avoid significant adverse impacts on the landscape

Table 7.2 Criteria for appraising the effect on SEOs

Likely to Improve status of SEOs to a greater degree	Likely to Improve status of SEOs to a lesser degree	Least Potential Conflict with status of SEOs - likely to be mitigated to a greater degree. significant adverse effects less likely	More Potential Conflict with status of SEOs - likely to be mitigated to an intermediate degree. significant adverse effects more likely	Probable Conflict with status of SEOs- unlikely to be mitigated	No significant interaction with status of SEOs
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¹⁹ 'Annexed habitats and species' refer to those listed under Annex I, II & IV of the EU Habitats Directive and Annex I of the EU Birds Directive.

²⁰ See Section 5 for a description of Strategic Environmental Objectives.

7.2 Cumulative Effects

Cumulative effects are one of the types of effects that have been considered in the assessment of the alternatives. Cumulative effects can be described as the addition of many small impacts to create one larger, more significant, impact.

There are two types of potential cumulative effects that have been considered, namely:

- Potential intra-Plan cumulative effects - these arise from the interactions between different types of potential environmental effects resulting from a Plan, programme etc. Where there are elevated levels of environmental sensitivities, future development could result in environmental conflicts and lead to a deterioration in environmental integrity. The interrelationships between environmental components that help determine these potential effects are identified on Table 8.4 in Section 8 e.g. interrelationships between: human health and water quality; human health and air quality; human health and flood risk; and ecology and water quality.
- Potential inter-Plan cumulative effects - these arise when the effects of the implementation of one plan occur in combination with those of other plans, programmes, developments, etc.

Effects that may arise as a result of implementing the Plan have been mitigated to the extent that the only residual adverse effects likely to occur as a result of implementation of the Plan are those that are identified under Section 8.7.

With regard to potential *inter-Plan* cumulative environmental effects, these occur as a result of the combination of: potential environmental effects that are identified by the assessment; and the effects arising from other legislation, plans, programmes or developments arising.

In considering the relationship with legislation and other plans and programmes it is important to note that the Plan will be implemented within areas that have existing plans and programmes (see Appendix I, Section 4, Section 5 and Section 9 of this report) for a range of sectors at a range of levels (e.g. National, River Basin District, Regional, County and Local) that are already subject to more specific higher and lower tier SEA and AA.

The assessment of the likely *inter-Plan* cumulative environmental effects requires knowledge of the likely effects of all plans/developments under consideration. The assessment is limited in this instance as there has been limited assessment of the likely types of developments provided for by other policies, plans and programmes that could occur in combination with the implementation of the Plan. Where they exist, the SEA recognises the existence of other environmental assessments with a view to avoid duplication of assessment, in compliance with the SEA Directive.

The SEA undertaken for the Plan has taken account of the Council's obligation to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.

Cumulative effects that have been considered include those resulting from the Plan and:

- Other land use Plans (e.g. the Carlow County Development Plan);
- Water services, transport and energy infrastructure plans (e.g. Irish Water's Water Services Strategic Plan and associated Capital Investment Plan 2014-2016, Grid25 and associated Implementation Programme) and the County Carlow 2021 Local Economic & Community Plan 2016-2021; and
- Environmental protection and management plans (e.g. South East River Basin Management Plans and flood risk management plans).

Such potential cumulative effects include the following (note that these will be mitigated by provisions that have been integrated into the Plan):

- Contributions towards reductions in travel related greenhouse gas and other emissions to air (in combination with plans and programmes from all sectors, including transport and land use planning) as a result of consolidating development and facilitating sustainable mobility/a shift from motorised transport modes to more sustainable and non-motorised transport modes.
- Contributions towards travel related greenhouse gas and other emissions to air (in combination with plans and programmes from all sectors, including transport and land use planning) as a result of facilitating development that must be accompanied by road capacity.
- Facilitation of new development that is accompanied by appropriate levels of water services thereby contributing towards environmental protection.
- Need for and use of water and wastewater treatment capacity arising from new developments and associated potential adverse effects.
- Potential cumulative effects upon surface and ground water status as a result of development including housing and employment – loadings and abstractions;
- Potential cumulative effects (habitat damage, enhancing ecological connectivity, contributing towards sustainable mobility) arising from linear developments, such as those relating to Green Infrastructure;
- Potential cumulative effects on flood risk by, for example, development of greenfield lands;
- Potential cumulative visual impact of development at the interface between the LAP boundary and the surrounding area of the County which is subject to the provisions of the County Development Plan; and
- In combination with plans and programmes from all sectors potential adverse effects on all environmental components arising from all development in greenfield and brownfield areas (e.g. infrastructural, residential, economic, agricultural etc.). The type of these effects are consistent with those described on Table 7.3. These plans and programmes from other sectors undergo SEA and comply with environmental legislation while projects are subject to EIA and AA, as relevant.

7.3 Potentially Significant Adverse Effects

A number of potentially significant adverse environmental effects that are common to all alternatives and are described on the Table below.

For the chosen alternative, these effects are mitigated by measures that have been integrated into the Plan.

Table 7.3 Potentially Significant Adverse Environmental Effects common to all alternatives

Environmental Component	Likely Significant Effect, if unmitigated
Biodiversity and Flora and Fauna	<ul style="list-style-type: none"> o Loss of biodiversity with regard to designated biodiversity and flora and fauna (including Natura 2000 Sites, proposed Natural Heritage Areas and Annexed habitats and species), ecological connectivity and stepping stones and non-designated biodiversity and flora and fauna (see baseline Section 4.2)
Population and Human Health	<ul style="list-style-type: none"> o Spatially concentrated deterioration in human health (see baseline Section 4.3)
Soil (especially soil on greenfield lands)	<ul style="list-style-type: none"> o Adverse impacts on the hydrogeological and ecological function of the soil resource (see baseline Section 4.4)
Water (including the River Barrow and its tributaries and underlying groundwater)	<ul style="list-style-type: none"> o Adverse impacts upon the status of water bodies arising from changes in quality, flow and/or morphology (see baseline Sections 4.5) o Increase in flood risk (see baseline Section 4.5.6)
Material Assets (it is the function of Irish Water to provide for water services needs)	<ul style="list-style-type: none"> o Failure to provide adequate and appropriate waste water treatment (see baseline Section 4.7.1) o Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean (see baseline Section 4.7.1) o Increases in waste levels (see baseline Section 4.7.2)
Air and Climatic Factors	<ul style="list-style-type: none"> o Failure to contribute towards sustainable transport and associated impacts (energy usage and emissions to air including noise and greenhouse gases) (see baseline Section 4.6)
Cultural Heritage	<ul style="list-style-type: none"> o Effects on entries to the Record of Monuments and Places and other archaeological heritage (see baseline Section 4.8.2) o Effects on entries to the Records of Protected Structures and other architectural heritage (see baseline Section 4.8.3)
Landscape	<ul style="list-style-type: none"> o Occurrence of adverse visual impacts (see baseline Section 4.9)

7.4 Comparative Evaluation of all Alternative Development Strategies

Alternative Development Strategy 1 would contribute towards efforts to improve sustainable mobility²¹ (and associated effects on energy, air, noise and human health) by improving existing pedestrian access, however: such a contribution would be outweighed by the overall direction of the Strategy which prefers an expansion of peripheral areas for residential, mixed use, industrial and commercial uses, some of which have no direct link to the town centre.

The extent of development provided for would have to be served by infrastructure²² and could affect flood risk²³.

By providing significant expansion of suburbs of the town and peripheral areas, this alternative would be likely to result in the greatest number and extent of residual adverse effects across the widest area. Such effects include loss of ecology (including non-designated ecology and ecological corridors and stepping-stones), the sealing of greenfield soils and threats to the status of waters²⁴. This Scenario would provide for various uses on greenfield lands in the peripheries of the plan area, adversely impacting upon the consolidation of the town and sustainable mobility. The visual appearance of peripheral greenfield areas within the LAP area would be most likely to change under this scenario²⁵.

By encouraging new retail/commercial development on vacant and brownfield sites, this alternative would somewhat contribute towards the protection and management of the environment elsewhere²⁶.

Alternative Development Strategy 2 directs new development to vacant and infill opportunities only. By consolidating the existing town centre and improving pedestrian links, this alternative would contribute towards efforts to both improve sustainable mobility²⁷ (and associated effects on energy, air, noise and human health), protect cultural heritage²⁸ and improve the residential fabric within the town centre.

However, by restricting new development to high density to vacant and a number of key opportunity sites, this alternative would be likely to result in an increase of applications for development outside the LAP area thereby weakening the town centre. It would be a challenge to serve peripheral areas with the necessary infrastructure²⁹.

The increase in applications for development within the periphery to the LAP area would provide for the greatest number and extent of residual adverse effects beyond the LAP area as a result of greenfield development. Such effects include loss of ecology (including non-designated ecology and ecological corridors and stepping-stones), the sealing of greenfield soils and threats to the status of waters³⁰ and changes to the visual appearance of lands³¹.

By encouraging an extent of development within the town centre, this alternative would somewhat contribute towards the protection and management of the environment elsewhere³², however the higher densities of development would have the potential to adversely impact upon the character of the town including cultural heritage and its context³³.

²¹ SEOs C1 PHH1

²² SEOs M1 M2 M3

²³ SEOs W3 PHH1

²⁴ SEOs B1 B2 B3 S1 PHH1 W1 W2 W3

²⁵ SEOs CH1 CH2 L1

²⁶ SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1

²⁷ SEOs C1 PHH1

²⁸ SEOs CH1 CH2 L1

²⁹ SEOs M1 M2 M3

³⁰ SEOs B1 B2 B3 S1 PHH1 W1 W2 W3

³¹ SEO L1

³² SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1

³³ SEOs CH1 CH2 L1

Alternative Development Strategy 3 consolidates and strengthens the town centre and provides for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner. Consolidation of the town centre, phasing of residential development, improvement of pedestrian links and public spaces are all provided for.

By providing for development in this manner, this alternative would maximise sustainable mobility³⁴ (and associated effects on energy, air, noise and human health) and protect cultural heritage³⁵ within the town centre. Overall, new development would be best served by existing and planned infrastructure under this scenario³⁶. By limiting development within the Plan area and on the periphery of the development envelope, this alternative would benefit the protection of various environmental components (e.g. ecology, water, visual sensitivities etc.) beyond the LAP area that could otherwise be threatened³⁷.

Potential conflicts with all environmental components³⁸ (detailed under Table 7.3) would still have to be mitigated to ensure that significant adverse residual environmental effects do not occur.

This scenario provides for a greenbelt along the River Barrow that would contribute towards the protection of the status of the river including associated biodiversity³⁹.

Development of the strategic employment lands at Royal Oak in the west of the town would have the potential to adversely impact upon architectural and natural heritage if unmitigated⁴⁰.

Table 7.4 below provides a comparative evaluation of the environmental effects of alternative development strategies against Strategic Environmental Objectives. This is supported by the narrative above and by effects that are common to all alternatives detailed on Table 7.3.

Table 7.4 Comparative Evaluation of Alternative Development Strategies

Alternative Development Strategy	<u>Likely to Improve</u> status of SEOs <u>to a greater degree</u>	<u>Likely to Improve</u> status of SEOs <u>to a lesser degree</u>	<u>Least Potential Conflict</u> with status of SEOs - <u>likely to be mitigated to a greater degree</u> , significant adverse effects less likely	<u>More Potential Conflict</u> with status of SEOs - <u>likely to be mitigated to an intermediate degree</u> , significant adverse effects more likely	Probable <u>Conflict</u> with status of SEOs- unlikely to be mitigated	<u>No significant interaction</u> with status of SEOs
Alternative Development Strategy 1		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		
Alternative Development Strategy 2		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		
Alternative Development Strategy 3	B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1			

³⁴ SEOs C1 PHH1

³⁵ SEOs CH1 CH2 L1

³⁶ SEOs M1 M2 M3

³⁷ SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1

³⁸ B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1

³⁹ SEOs B1 B2 B3

⁴⁰ B1 B2 B3 S1 CH2 L1

7.5 The Selected Alternative Development Strategy for the Plan

The Alternative Development Strategy that was selected and developed for the Plan was Strategy 3 - to consolidate and strengthen the town centre and provide for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner. The Plan includes Phase 1 Residential development and Enterprise and Employment adjacent and to the east of the train line. Potential adverse effects will be mitigated by various provisions that have been integrated into the Plan (see Section 9).

The Plan has been developed by the Planning Team and adopted by the Council having regard to both:

1. The environmental effects which were identified by the SEA and are detailed above; and
2. Planning - including social and economic - effects that also were considered by the Council.

The Land Use Zoning map from the Plan that evolved from and which is consistent with Alternative Development Strategy 3 is shown on Figure 7.1 overleaf. Also shown on this map is the constrained land use zoning objective (Policy HR 11B) for the River Barrow and River Nore cSAC. This Policy has been integrated into the Plan as there are a number of overlaps between the area which is designated as cSAC and existing land use zoning objectives. Policy HR 11B requires applications for development within the constrained land use zoning objective for the Natura 2000 site (Map 13 – as shown on Figure 7.1 overleaf) to undergo Appropriate Assessment and demonstrate that the proposal will not give rise to any effect on the Natura 2000 site in view of its qualification features and conservation objectives.

Figure 7.2 provides a version of the Land Use Zoning Map with flood information overlain. Please refer to Section 4.5.6.3 of this report for information on Strategic Flood Risk Assessment that was undertaken for the Plan.

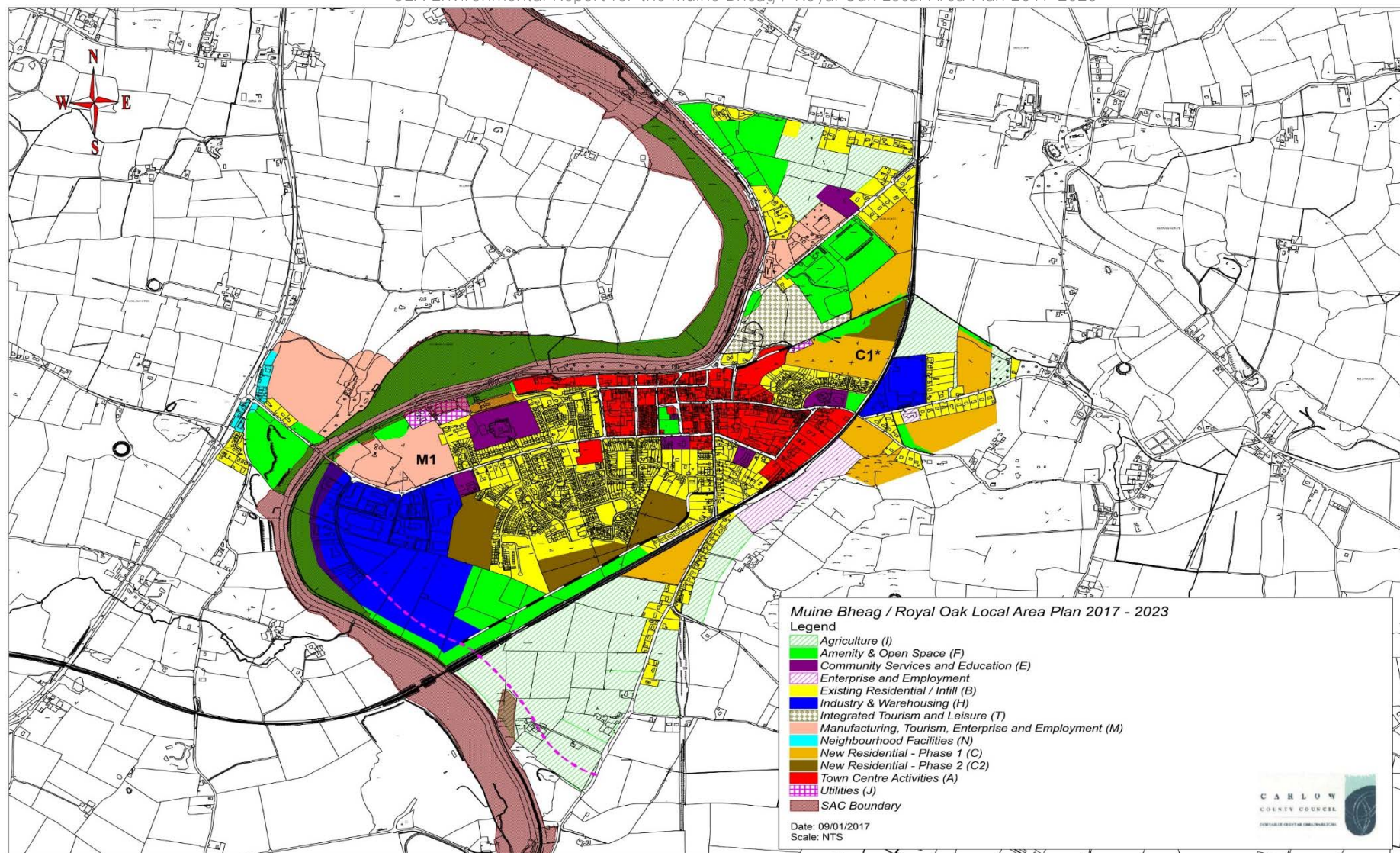


Figure 7.1 Local Area Plan Land Use Zoning Map (with SAC boundary)

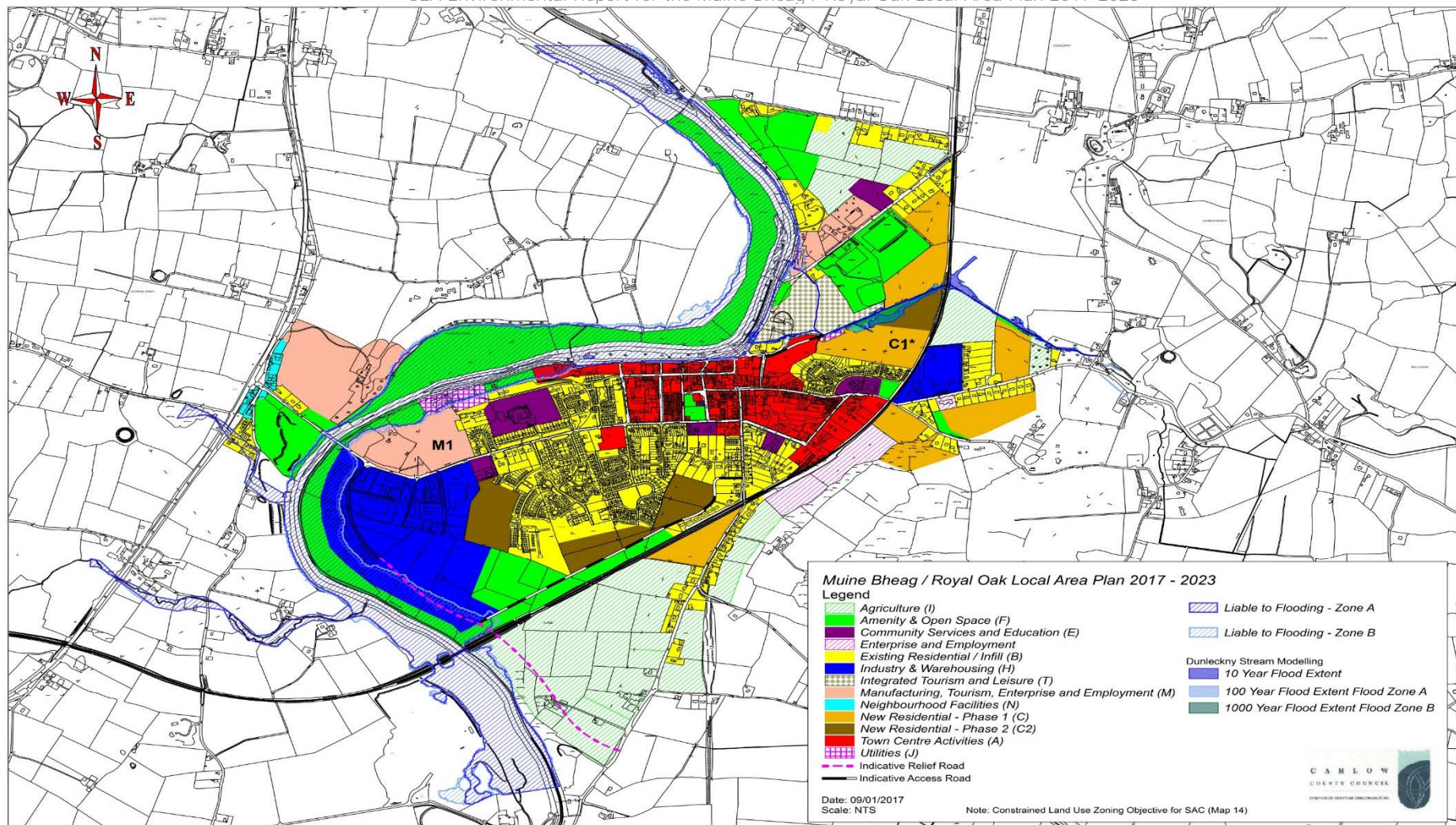


Figure 7.2 Local Area Plan Land Use Zoning Map (with flooding information)

Section 8 Evaluation of Plan Provisions

8.1 Overall Findings

The overall findings are that:

- The Council have integrated recommendations arising from the SEA, Appropriate Assessment (AA) and Strategic Flood Risk Assessment (SFRA) processes into the Plan, facilitating compliance of the Plan with various European and National legislation and Guidelines relating to the environment and sustainable development;
- Plan provisions would be likely to result in significant positive effects upon the protection and management of the environment (including all environmental components; biodiversity, fauna, flora, population, human health, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape); and
- Some Plan provisions would have the potential to result in significant negative environmental effects (these will be described in the reports) however these effects will be mitigated by the mitigation measures that have been integrated into the Plan (see Section 9).

8.2 Methodology

This section evaluates the provisions of the Plan. The description of the environmental baseline together with the maps provided in Section 4 of this report (including the Environmental Sensitivity Overlay Mapping) is used for this purpose. Strategic Environmental Objectives (SEOs) identified in Section 5 and reproduced overleaf are also used.

The provisions of the Plan are evaluated using compatibility criteria (see Table 8.1 below) in order to determine how they would be likely to affect the status of the SEOs. The SEOs and the provisions of the Plan are arrayed against each other to identify which interactions - if any - would cause effects on specific components of the environment. Where the appraisal identifies a likely conflict with the status of an SEO the relevant SEO code is entered into the conflict column - e.g. B1 which stands for the SEO likely to be affected - in this instance 'to ensure compliance with the Habitats and Birds Directives with regard to the protection of Natura 2000 Sites and Annexed habitats and species'⁴¹.

The interactions identified are reflective of likely significant environmental effects⁴²:

1. Interactions that would be likely to improve the status of a particular SEO would be likely to result in a significant positive effect on the environmental component to which the SEO relates.
2. Interactions that would probably conflict with the status of an SEO and would be unlikely to be mitigated would be likely to result in a significant negative effect on the environmental component to which the SEO relates.
3. Interactions that would potentially conflict with the status of an SEO and would be likely to be mitigated would be likely to result in potential significant negative effects however these effects would be likely to be mitigated by measures which have been integrated into the Plan.

The degree of significance of effects occurring cannot be fully determined at this level of decision making due to the lack of exact detail available with regard to the type or scale of development that will be permitted under the Plan.

⁴¹ 'Annexed habitats and species' refers to those listed under Annex I, II & IV of the EU Habitats Directive and Annex I of the EU Birds Directive.

⁴² These effects include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects.

Mitigation measures to prevent or reduce significant adverse effects posed by the Plan are identified in Section 9 - these have been integrated into the Plan.

Table 8.1 Criteria for appraising the effect of Plan provisions on SEOs

Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
-----------------------------------------	-------------------------------------------------------------------------	-----------------------------------------------------------------------	--------------------------------------------------

Table 8.2 Strategic Environmental Objectives⁴³

SEO Code	SEO
B1	To ensure compliance with the Habitats and Birds Directives with regard to the protection of Natura 2000 Sites and Annexed habitats and species ⁴⁴
B2	To ensure compliance with Article 10 of the Habitats Directive with regard to the management of features of the landscape which - by virtue of their linear and continuous structure or their function act as stepping stones - are of significant importance for wild fauna and flora and/or essential for the migration, dispersal and genetic exchange of wild species
B3	To avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites and to ensure compliance with the Wildlife Acts 1976-2010 with regard to the protection of species listed on Schedule 5 of the principal Act
PHH1	To protect populations and human health from exposure to incompatible landuses
S1	To avoid damage to the hydrogeological and ecological function of the soil resource
W1	To maintain and improve, where possible, the quality and status of surface waters
W2	To prevent pollution and contamination of ground water
W3	To comply as appropriate with the provisions of the Flood Risk Management Guidelines
M1	To serve new development with adequate and appropriate waste water treatment
M2	To serve new development with adequate drinking water that is both wholesome and clean
M3	To reduce waste volumes, minimise waste to landfill and increase recycling and reuse
C1	To reduce travel related emissions to air and to encourage modal change from car to more sustainable forms of transport
CH1	To protect archaeological heritage including entries to the Record of Monuments and Places and/or their context
CH2	To protect architectural heritage including entries to the Record of Protected Structures and their context
L1	To avoid significant adverse impacts on the landscape

8.3 Appropriate Assessment and Strategic Flood Risk Assessment

A Stage 2 Appropriate Assessment (AA) and a Strategic Flood Risk Assessment (SFRA) have both been undertaken alongside the preparation of the Plan.

The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC). The requirement for SFRA is provided under 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (DEHLG and OPW, 2009).

The AA concluded that the Plan will not affect the integrity of the Natura 2000 network⁴⁵ and the SFRA has facilitated the integration of flood risk management considerations into the Plan.

The preparation of the Plan, SEA, AA and SFRA has taken place concurrently and the findings of the AA and SFRA have informed both the Plan and the SEA. All recommendations made by the AA and SEA were integrated into the Plan.

⁴³ See Section 5 for a description of Strategic Environmental Objectives.

⁴⁴ 'Annexed habitats and species' refer to those listed under Annex I, II & IV of the EU Habitats Directive and Annex I of the EU Birds Directive.

⁴⁵ Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:

(a) no alternative solution available;
 (b) imperative reasons of overriding public interest for the plan to proceed; and
 (c) adequate compensatory measures in place.

8.4 Potential Adverse Effects and their Determination

Environmental impacts which occur, if any, will be determined by the nature and extent of multiple or individual projects and site-specific environmental factors.

Avoidance of conflict with SEOs and the environment is dependent upon compliance with the mitigation measures which have emerged through the SEA, AA and SFRA processes and which have been integrated into the Plan. The potentially significant adverse environmental effects arising from implementation of the Plan are detailed on Table 8.3 below.

Environmental Component	Likely Significant Effect, if unmitigated
Biodiversity and Flora and Fauna	<ul style="list-style-type: none"> o Loss of biodiversity with regard to designated biodiversity and flora and fauna (including Natura 2000 Sites, proposed Natural Heritage Areas and Annexed habitats and species), ecological connectivity and stepping stones and non-designated biodiversity and flora and fauna (see baseline Section 4.2)
Population and Human Health	<ul style="list-style-type: none"> o Spatially concentrated deterioration in human health (see baseline Section 4.3)
Soil (especially soil on greenfield lands)	<ul style="list-style-type: none"> o Adverse impacts on the hydrogeological and ecological function of the soil resource (see baseline Section 4.4)
Water (including the River Barrow and its tributaries and underlying groundwater)	<ul style="list-style-type: none"> o Adverse impacts upon the status of water bodies arising from changes in quality, flow and/or morphology (see baseline Sections 4.5) o Increase in flood risk (see baseline Section 4.5.6)
Material Assets (it is the function of Irish Water to provide for water services needs)	<ul style="list-style-type: none"> o Failure to provide adequate and appropriate waste water treatment (see baseline Section 4.7.1) o Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean (see baseline Section 4.7.1) o Increases in waste levels (see baseline Section 4.7.2)
Air and Climatic Factors	<ul style="list-style-type: none"> o Failure to contribute towards sustainable transport and associated impacts (energy usage and emissions to air including noise and greenhouse gases) (see baseline Section 4.6)
Cultural Heritage	<ul style="list-style-type: none"> o Effects on entries to the Record of Monuments and Places and other archaeological heritage (see baseline Section 4.8.2) o Effects on entries to the Records of Protected Structures and other architectural heritage (see baseline Section 4.8.3)
Landscape	<ul style="list-style-type: none"> o Occurrence of adverse visual impacts (see baseline Section 4.9)

Table 8.3 Potential Adverse Effects

8.5 Interrelationship between Environmental Components

The SEA Directive requires the Environmental Report to include information on the likely significant effects on the environment, including on issues such as biodiversity, fauna, flora, population, human health, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.

Likely significant effects on environmental components that are identified include those that are interrelated; implementation of the Plan will not affect the interrelationships between these components. The presence of significant interrelationships between environmental components is identified on Table 8.4.

Table 8.4 Presence of Interrelationships between Environmental Components

Component	Biodiversity, flora and fauna	Population and human health	Soil	Water	Air and Climatic factors	Material assets	Cultural heritage	Landscape
Biodiversity, flora and fauna		No	Yes	Yes	Yes	Yes	No	Yes
Population and human health			Yes	Yes	Yes	Yes	No	No
Soil				Yes	No	Yes	No	No
Water					No	Yes	No	No
Air and Climatic factors						Yes	No	No
Material assets							Yes	Yes
Cultural heritage								Yes
Landscape								

8.6 Cumulative Effects

Please refer to Section 7.2 for specific consideration of cumulative effects – these are taken into account throughout the evaluation.

8.7 Residual Adverse Effects

Section 9 outlines the measures that have mitigated and will mitigate the potential negative effects that are detailed above. Residual adverse effects likely to occur - considering the extent of detail provided by the Plan and assuming that all mitigation measures are complied with by development - are identified for each of the environmental components on Table 8.5 below.

Table 8.5 Residual Adverse Effects

Environmental Component	Residual Adverse Effects
Biodiversity and Flora and Fauna	Loss of an extent of non-protected habitats arising from the replacement of semi-natural land covers with artificial surfaces
Population and Human Health	Flood related risks remain due to uncertainty with regard to extreme weather events
Soil	Loss of an extent of soil function arising from the replacement of semi-natural land covers with artificial surfaces
Water	Flood related risks remain due to uncertainty with regard to extreme weather events
Air and Climatic Factors	None
Material Assets	Residual wastes to be disposed of
Architectural Heritage	Potential alteration to the context and setting of architectural heritage (Protected Structures) however these will occur in compliance with legislation
Archaeological Heritage	Potential alteration to the context and setting of archaeological heritage (Recorded Monuments) however this will occur in compliance with legislation Potential loss of unknown archaeology however this loss will be mitigated by measures integrated into the Plan
Landscape Designations	The landscapes within and surrounding the town will change overtime as a result of natural changes in vegetation cover combined with new developments. The Plan contributes towards the protection of landscape designations.

8.8 Detailed Evaluation

8.8.1 Chapter 3 Vision and Development Strategy & Chapter 12 Land Use Zoning and Matrix

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
Vision				
To build on Muine Bheag / Royal Oaks unique strengths including its distinct character of built and natural heritage and to provide a focused approach to planning for future growth in a coherent, sustainable, spatial fashion. The Plan aims to achieve a more consolidated urban form that facilitates a sustainable economic base and creates sustainable and integrated communities while balancing future development with the conservation and enhancement of the towns natural and built environment.	B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1	
Strategic Objectives				
The following are the Strategic Objectives for Muine Bheag / Royal Oak: <ol style="list-style-type: none"> To create an attractive town with a compact urban form which contributes to the natural and built heritage amenities of the town and provides a vibrant and vital mixed-use environment. To facilitate the creation of a sustainable vibrant and vital economy which maximises the unique attributes of the town. To create a town of well-connected sustainable neighbourhoods and socially inclusive communities. 	B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1	
Land Use Zoning and Matrix				
Land Use Zoning Objectives, Matrix & Map as detailed in Chapter 12 of the Plan	B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1	
Commentary:	<p><i>The Plan's high-level Vision, Strategic Objectives and Land Use Zoning are consistent with and contribute towards the preferred alternative scenario for the Plan. The evaluation against Strategic Environmental Objectives (SEOs) that is provided above is consistent with the evaluation of the preferred scenario that is provided in Section 7. The Plan consolidates and strengthens the town centre and provides for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner. Consolidation of the town centre, phasing of residential development, improvement of pedestrian links and public spaces are all provided for.</i></p>			

8.8.2 Chapter 4 Economic Development

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs - likely to be mitigated	No Likely interaction with status of SEOs
Economic Policies				
<p>EC 1: To accelerate the sustainable development of Muine Bheag / Royal Oak through sustainable employment creation, in a structured and cohesive way, recognising its importance as a key driver of economic growth for south Carlow.</p> <p>EC 2: To facilitate development agencies such as IDA Ireland and the Local Enterprise Office to promote development of foreign-owned and indigenous sector higher value-added, knowledge based industrial and internationally traded activities.</p> <p>EC 3: To foster and support industry and enterprise in Muine Bheag, including indigenous businesses.</p> <p>EC 4: To ensure the availability of lands for employment uses, allied to defined development needs and to develop same in conjunction with the relevant Development Agencies.</p> <p>EC 5: To promote innovative economic sectors and encourage clustering which positively exploits synergies between interconnected companies.</p> <p>EC 6: To facilitate and encourage the development of the alternative energy sector and to recognise its potential in the creation of Enterprise and opportunities.</p> <p>EC 7: To support and facilitate the development of start up enterprise units for local indigenous enterprises in Muine Bheag / Royal Oak.</p> <p>EC 8: To facilitate innovative work practices such as 'live-work' units where they do not negatively impact on residential amenity.</p> <p>EC 9: To improve access to major areas of employment through sustainable transport modes.</p> <p>EC 10: To support childcare facilities in appropriate locations thereby promoting labour market participation among parents and supporting parents in accessing employment, training and education.</p> <p>EC 11: To actively encourage the redevelopment of brownfield sites and re-use of disused buildings for enterprise and employment creation, subject to meeting Development Management Criteria as presented in the County Development Plan.</p> <p>EC 12: To encourage and facilitate at appropriate designated locations, small indigenous industries in recognition of their increasing importance in providing local employment and helping to stimulate economic activity.</p> <p>EC 13: To promote, protect, improve, encourage and facilitate the development of tourism in Muine Bheag / Royal Oak as an important contributor to job creation in the town.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1</p>	
Economic Objectives				
<p>ECO 1: To promote and facilitate the development of light industry, manufacturing, warehousing and logistics on lands zoned industry and warehousing. Developments must achieve a high standard of layout and design including landscaping and screening and the delivery of a high quality working environment which is attractive to both customers and employees.</p> <p>ECO 2: To facilitate and promote the development of a business park on lands zoned on the Royal Oak with a mix of employment uses within a high-quality landscaped development including office-based industry, enterprise and incubator units, business, science and technology.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1</p>	
Commentary:				
<p><i>These provisions provide a planning framework for economic development in Muine Bheag. The evaluation against Strategic Environmental Objectives (SEOs) that is provided above is consistent with the evaluation of the preferred scenario that is provided in Section 7.</i></p> <p><i>The provision of all necessary infrastructure in advance of sustainable development would facilitate both of the following appropriate levels of environmental protection and management especially with respect to the provision of water services (and associated positive effects on the status of waters, ecology and human health - SEOs M1 M2 W1 W2 B1 B2 B3 PHH1) and the provision of transport infrastructure integrated with land use planning – and associated interactions with sustainable mobility, emissions and energy usage (SEOs C1 PHH1).</i></p>				

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs - likely to be mitigated	No Likely interaction with status of SEOs
<p><i>Development that contributes towards the consolidation of the town (including the redevelopment of brownfield sites and re-use of disused buildings) would:</i></p> <ul style="list-style-type: none"> <i>Help to maximise the uptake in smarter, more sustainable modes of transport and minimise transport related emissions (including indirect benefits with regard to the protection of human health SEOs C1 PHH1);</i> <i>Contribute towards the protection of many environmental components outside of the town that would otherwise occur as a result of urban generated development. Such components include biodiversity and flora and fauna, soil, water (including interactions with population and human health), landscape designations and cultural heritage (SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 CH1 CH2 L1); and</i> <i>Make most use of existing water services and drainage infrastructure, subject to capacity being provided (including indirect benefits with regard to the protection of water, biodiversity and flora and fauna, soil and human health) (SEOs M1 M2 W1 W2 W3 B1 B2 B3 S1 PHH1).</i> <p><i>The construction and operation economic developments has the potential to result in adverse effects upon all environmental components however these effects have been mitigated by provisions which have been integrated into the Plan, including those which are identified in Section 9 of this report. The potential adverse effects (if unmitigated) include the following:</i></p> <ul style="list-style-type: none"> <i>Loss of biodiversity with regard to Natura 2000 Sites and Annexed habitats and species (SEO B1)</i> <i>Loss of biodiversity with regard to ecological connectivity and stepping stones (SEO B2)</i> <i>Loss of biodiversity with regard to designated sites including Wildlife Sites and listed species (SEO B3)</i> <i>Spatially concentrated deterioration in human health (SEO PHH1)</i> <i>Damage to the hydrogeological and ecological function of the soil resource (SEO S1)</i> <i>Adverse impacts upon the status and quality of water bodies (SEOs W1 W2)</i> <i>Increase in the risk of flooding (SEO W3)</i> <i>Failure to provide adequate and appropriate waste water treatment (SEO M1; water services infrastructure and capacity is needed to ensure the mitigation of potential conflicts)</i> <i>Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean (SEO M2; water services infrastructure and capacity is needed to ensure the mitigation of potential conflicts)</i> <i>Increases in waste levels (SEO M3)</i> <i>Failure to contribute towards sustainable transport and associated impacts (SEO C1; transport infrastructure investment is needed to ensure the mitigation of potential conflicts)</i> <i>Effects on entries to the Record of Monuments and Places and other archaeological heritage (SEO CH1)</i> <i>Effects on entries to the Records of Protected Structures and other architectural heritage (SEO CH2)</i> <i>Occurrence of adverse visual impacts (SEO L1)</i> 				
<p>Policies in relation to Retail</p>				
<p>EC 14: To protect and strengthen the retail primacy of Muine Bheag within the County and more specifically within Southern Carlow.</p> <p>EC 15: To encourage the development of the retail and service role of Muine Bheag / Royal Oak as a self-sustaining centre in accordance with the policies contained in the Carlow County Development Plan 2015-2021 and the Retail Planning Guidelines 2012.</p> <p>EC 16: To protect the retail function of the Core Shopping Area.</p> <p>EC 17: To sustain the vitality and viability of the main shopping area and to encourage measures to improve its attractiveness.</p> <p>EC 18: To adhere to the provisions of the Sequential Approach in the consideration of retail applications located outside of Core Retail Area.</p> <p>EC 19: To promote and facilitate the development of local markets devoted to the sale of local agricultural and craft produce and support their role as visitor attractions.</p> <p>EC 20: To ensure that best quality of design is achieved for all proposed retail developments and that design respects and enhances the specific characteristics of the town.</p> <p>EC 21: To pursue all avenues of funding to secure resources for the continued enhancement, renewal and regeneration of the public realm of the Town Centre.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1</p>	

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p>EC 22: To discourage non retail and excessive lower grade retail uses, such as, take-away's and betting offices in the core retail area and other principal streets in the town centre, in the interests of maintaining and sustaining the retail attraction of the town centre.</p> <p>EC 23: To improve the public realm and support boutique style retailing in the town centre.</p> <p>EC 24: To secure the continued consolidation of Muine Bheag Town Centre through progressing the regeneration of backland and brown field areas in the town centre.</p> <p>EC 25: To encourage and facilitate the delivery of tourism related retail developments and initiatives in and around the Town Centre.</p>				
Objectives in relation to Retail				
<p>ECO 3: To maintain the role of Muine Bheags town core area as the primary retail centre for convenience and local comparison shopping through continuing to develop the retail environment, the quality of the public realm, the range of retail uses and to facilitate complementary uses to retail.</p> <p>ECO 4: To actively promote the range of specialist shops within the town core, which will contribute to the character of the town and attractiveness of the area as a destination for shopping.</p> <p>ECO 5: To seek to secure funding to implement environmental improvements for the town core area such as improving facilities for pedestrians, provision of a high quality streetscape, improved connectivity with adjoining residential areas and tourist attractions.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1</p>	
Objective in relation to Brownfield / Derelict / Vacant / Underutilised Sites				
<p>To provide for the development of vacant sites in designated areas (residential land and / or regeneration land) and to encourage and facilitate the appropriate development and renewal of sites and areas in need of regeneration in order to prevent:</p> <ul style="list-style-type: none"> • Adverse effects on existing amenities in such areas, in particular as a result of the ruinous or neglected condition of any land • Urban blight or decay • Anti-social behaviour, or • A shortage of habitable houses or of land for residential use or a mixture of residential and other uses 	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1</p>	
<p>Commentary:</p> <p><i>These retail development provisions from the Plan set out the overall strategy for the future development of retailing in the town and provide a focus on consolidation and regeneration of backland and brownfield areas in the town. These provisions are further supported by the Objective in relation to Brownfield / Derelict / Vacant / Underutilised Sites.</i></p> <p><i>By providing for the development of retail (which would encompass new built development and the construction and operation of infrastructure to service this development), these provisions would potentially conflict with the full range of environmental components (SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1). Potential adverse effects would be mitigated by measures that have been integrated into the Plan (see Section 9). The evaluation against Strategic Environmental Objectives (SEOs) that is provided above is consistent with the evaluation of the preferred scenario that is provided in Section 7. This scenario would contribute towards the protection of many environmental components (SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 CH1 CH2 L1).</i></p> <p><i>Retail provisions will contribute towards maximising sustainable mobility and associated interactions with emissions to air, energy usage and human health (SEO C1 PHH1).</i></p>				
Policies in relation to Town Centre Opportunity Sites				
<p>EC 26: To promote the redevelopment and generation of strategic sites and vacant areas within and adjacent to the town centre to achieve a consolidated town with an intensity of development from the core to the edge.</p> <p>EC 27: To promote quality in architecture and urban design.</p> <p>EC 28: To encourage and facilitate the reuse and regeneration of vacant/ derelict land / buildings. The Council will use its powers, where appropriate, to consider such sites for inclusion in the Register of Derelict Sites.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1</p>	

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
Commentary:				
<i>These provisions in relation to Town Centre Opportunity Sites are consistent with and contribute towards the preferred alternative scenario for the Plan. The evaluation against Strategic Environmental Objectives (SEOs) that is provided above is consistent with the evaluation of the preferred scenario that is provided in Section 7. The Plan consolidates and strengthens the town centre and provides for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner. Consolidation of the town centre, phasing of residential development, improvement of pedestrian links and public spaces are all provided for.</i>				
Policies in relation to Rural and Agricultural Development				
EC 29: To promote an environmentally sustainable agricultural / horticultural sector and a vibrant bloodstock industry, which contributes to a dynamic and successful rural economy. EC 30: To promote the diversification of the rural economy and the development of rural indigenous industry while safeguarding the environment and role of the rural area as a strategic asset.	B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1	
Commentary:				
<i>Rural and agricultural development cumulatively contributes towards the selected alternative scenario for the Plan. Rural and agricultural development is essential to the sustenance of rural populations and associated existing sustainable rural management practices that can often sustain biodiversity (SEOs B1 B2 B3). The development of agriculture has the potential to adversely affect various environmental components including biodiversity and flora and fauna (SEOs B1 B2 B3), water and human health (SEOs W1 W2 PHH1), the provision of appropriate water and waste services (SEOs M1 M2 M3), cultural heritage (SEOs CH1 CH2), the landscape (SEO L1) and sustainable mobility patterns (SEO C1). Both of these provisions integrate reference to the environment: "environmentally sustainable" and "safeguarding the environment".</i>				

8.8.3 Chapter 5 Housing and Sustainable Neighbourhoods

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
Policies in relation to Housing				
HP 1: To monitor the scale, rate and location of newly permitted development to ensure compliance with the core strategy with regard to population targets in order to achieve the delivery of strategic plan led and coordinated balanced development within the town. HP 2: To operate an order of priority for the release of residential lands to comply with the Core Strategy of the Carlow County Development Plan 2015-2021 as follows: (i) The lands identified as "New Residential – Phase 1" land use zoning objective corresponds with the requirements of the core strategy and are available for residential development within the lifetime of this plan. (ii) The lands identified as "New Residential – Phase 2" land use zoning objective are not available for residential development within the lifetime of this LAP unless the Plan is reviewed / amended in accordance with planning legislation. HP 3: To facilitate where appropriate residential development on appropriate infill / regeneration and town centre sites in accordance with the principles of proper planning and sustainable development. HP 4: To have regard to the DoECLG Guidelines on 'Quality Housing for Sustainable Communities – Best Practice Guidelines for Delivering Homes Sustaining Communities (2007); 'Delivering Homes Sustaining Communities – Statement on Housing Policy' (2007), 'Sustainable Urban Housing: Design Standards for New Apartments' (2007) and	B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1	

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p>Sustainable Residential Development in Urban Areas' and the accompanying Urban Design Manual: Best Practice Guide (2009).</p> <p>HP 5: To require that all new residential developments comply with the Housing Strategy and Development Management Standards of the Carlow County Development Plan 2015-2021 or as may be amended.</p> <p>HP 6: To encourage and foster the creation of attractive mixed-use sustainable neighbourhoods which contain a variety of housing types and tenures with supporting community facilities, public realm and residential amenities.</p> <p>HP 7: To promote the development of underutilised infill town centre sites and to facilitate high quality development which respects the design of surrounding development and the character of the area.</p> <p>HP 8: To require larger schemes to be developed in a phased manner ensuring that necessary community infrastructure is delivered in tandem with residential development.</p> <p>HP 9: To encourage strong frontages along main thoroughfares creating definite building lines and continuity of the structure of the town centre.</p> <p>HP 10: To ensure that new housing development close to existing houses reflect the character and scale of the existing houses unless there are exceptional design reasons for doing otherwise.</p> <p>HP 11: To require applications for residential development where appropriate to demonstrate the provision of an appropriate mix of dwelling types having regard to the following:</p> <ul style="list-style-type: none"> ● The nature of the existing housing stock and existing social mix in the area; ● The desirability of providing mixed communities; ● The provision of a range of housing types and tenures; ● The need to provide a choice of housing, suitable for all age groups and persons at different stages of the life cycle. <p>HP 12: To promote more sustainable development through energy end use efficiency, increasing the use of renewable energy, and improved energy performance of all new development.</p> <p>HP 13: To ensure that all housing is designed in a way that is adaptable and flexible to the changing needs of the homeowner having regard to the Lifetime Homes Guidance contained in Section 5.2 of the Department of Environment, Community and Local Government 'Quality Housing for Sustainable Communities – Best Practice Guidelines for Delivering Homes Sustaining Communities' (2007).</p> <p>HP 14: To require compliance with Carlow County Council's policy on the taking-in charge of residential developments.</p> <p>HP 15: To have regard to the DoECLG's 'Stakeholders Code of Practice, between the Representative Bodies Dealing with Unfinished Housing Developments (2011).</p> <p>HP 16: To restrict apartment developments generally to town centre locations or suitably located sites adjoining public transport connections. Apartments will not be permitted where there is an over concentration of this type of development. Higher density schemes will only be considered where they exhibit a high architectural design standard creating an attractive and sustainable living environment.</p> <p>HP 17: To seek the provision of high quality apartments where permitted within sustainable neighbourhoods by achieving appropriate floor areas sizes and levels of amenity within each apartment development; and ensuring that suitable social infrastructure and other support facilities are available in the neighbourhood.</p> <p>HP 18: To discourage the demolition of habitable housing unless streetscape, environmental and amenity considerations are satisfied.</p> <p>HP 19: To resist the loss of residential use on upper floors and actively support proposals that retain or bring upper floors above ground floor premises into residential use.</p> <p>HP 20: To secure the implementation of the Carlow Housing Strategy 2011-2017 or any amendment or review thereto during the lifetime of this plan.</p> <p>HP 21: To promote the provision of appropriate accommodation for people with special needs including people with disabilities, students, travellers, the homeless and the elderly in conjunction with voluntary bodies and the private sector in accordance with the Carlow County Development Plan 2011-2017 (or as may be amended).</p> <p>HP 22: To support urban regeneration in order to enhance social cohesion and the potential for positive change.</p>				

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p>HP 23: To promote sustainable neighbourhoods which cater for the needs of persons of all stages in their lifecycle i.e. children, people of working age, elderly, people with disabilities.</p> <p>HP 24: To promote multi use of community facilities and outdoor shared spaces which are accessible to all. Such developments should be in accordance with the principles of universal design</p>				
<p>Commentary:</p> <p><i>These provisions are consistent with and contribute towards the preferred alternative scenario for the Plan. The evaluation against Strategic Environmental Objectives (SEOs) that is provided above is consistent with the evaluation of the preferred scenario that is provided in Section 7. The Plan consolidates and strengthens the town centre and provides for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner. Consolidation of the town centre, phasing of residential development, improvement of pedestrian links and public spaces are all provided for.</i></p>				

8.8.4 Chapter 6 Town Centre, Landscape and Public Realm

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p>Policies in relation to Character Areas</p>				
<p>CA 1: To protect the traditional urban structure of streets and lanes in the town by maintaining historic building lines and minimising road and junction widening and, where appropriate, restoring historic building lines.</p> <p>CA 2: To protect the historic urban fabric of fine plots and subdivisions by avoiding extensive consolidation of the plots and to promote narrow, deep plots in redevelopment proposals fronting the main streets.</p> <p>CA 3: To protect the integrity and character of important building groups in the town by ensuring that new development and redevelopment is compatible in terms of appearance and scale.</p> <p>CA 4: To protect features and sites of historical interest and their context setting in any development, through appropriate statutory and policy protection.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1</p>	
<p>Commentary:</p> <p><i>These provisions are consistent with and contribute towards the preferred alternative scenario for the Plan. The evaluation against Strategic Environmental Objectives (SEOs) that is provided above is consistent with the evaluation of the preferred scenario that is provided in Section 7. These provisions contribute towards consolidation of the Plan area in a way that is sympathetic to the cultural heritage of the town.</i></p>				
<p>Land Uses</p>				
<p>Policies</p> <p>LU 1: To seek to attract a residential population and commercial activity in the town centre through high quality design with a continuous street frontage with a variety of buildings, well maintained and attractive facades and active ground floors providing a pleasant and distinctive place.</p> <p>LU 2: To prioritise the use and enjoyment of the town streets and spaces by pedestrians and cyclists so that the impact of the private car and HGV traffic is moderated and a more reasonable balance is achieved between the interests of pedestrians, cyclists and drivers, including a more consistent approach to car parking in the town centre including increased provisions of off-street car parking.</p> <p>LU 3: To promote the mixed use nature of the town and to preserve its role as the centre of business and commerce in Muine Bheag.</p> <p>LU 4: To secure a broad base of employment and enterprise in the town through small, medium and large scale commercial development.</p> <p>LU 5: To require the inclusion of opportunities for mixed uses in new development in the town centre.</p> <p>LU 6: To reinforce tourism, related facilities and services and to actively market Muine Bheag.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1</p>	

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p>LU 7: To retain and improve the existing housing stock in the town centre and focus on opportunities for a range of household types in the town.</p> <p>LU 8: To investigate the feasibility of developing water-related activities, subject to the requirements of the Habitats Directive.</p> <p>LU 9: To encourage town centre services, tourism and living along the canal front.</p> <p>LU 10: To promote the development of quality shopfronts and in particular traditional shopfronts which contribute to the distinctive character of the town and to facilitate the improvement of vacant shops and premises in the town centre.</p> <p>Objectives</p> <p>LUO 1: To extend the existing pedestrian network and facilities and look at the possibility of cycling facilities.</p> <p>LUO 2: To provide small scale leisure / recreation facilities in the town centre, such as for example, a tennis court, basketball court, skate park.</p> <p>LUO 3: To require the integration of off-street car parking facilities in the redevelopment of large sites.</p>				
<p>Commentary: <i>These provisions are consistent with and contribute towards the preferred alternative scenario for the Plan. In addition, these land use policies and objectives contribute towards sustainable development and the protection and management of the environment, for example:</i></p> <ul style="list-style-type: none"> • <i>"high quality design" (policy LU 1)</i> • <i>"prioritise the use and enjoyment of the town street and spaces by pedestrians and cyclists" (policy LU 2)</i> • <i>"subject to the requirements of the Habitats Directive" (policy LU 8)</i> • <i>"extend the existing pedestrian network and facilities and look at the possibility of cycling facilities" (objective LUO 1)</i> <p><i>The evaluation against Strategic Environmental Objectives (SEOs) that is provided above is consistent with the evaluation of the preferred scenario that is provided in Section 7.</i></p>				
Policies in relation to Landscape				
<p>L1: To contribute towards the protection of county and local level landscape designations from incompatible developments. Proposals for development that have the potential to significantly adversely impact upon these designations shall be accompanied by an assessment of the potential landscape and visual impacts of the proposed development - demonstrating that landscape impacts have been anticipated and avoided to a level consistent with the sensitivity of the landscape and the nature of the designation.</p>	CH1 CH2 L1			B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3
<p>Commentary: <i>This policy focuses on the protection and management of visual impacts and would benefit the protection of the landscape (L1) and archaeological and architectural heritage (CH1 CH2).</i></p>				
Streets and Movement				
<p>Policies</p> <p>SM 1: To ensure that any new development is well connected to the rest of the town and is within a comfortable walking distance.</p> <p>SM 2: To seek to reduce clutter in the town centre and to make the town centre a pedestrian-friendly place by improving safety and comfort and improving pedestrian facilities such as street furniture, footpaths and crossings.</p> <p>SM 3: To improve the network of walking routes in and through the town centre and between notable features and attractions.</p> <p>SM 4: To utilise existing features such as the River Barrow and canal tow path as the focus and basis for development walking routes connecting the town to its wider county context, subject to the requirements of the Habitats Directive.</p> <p>SM 5: To reduce unnecessary vehicular traffic from the town centre.</p> <p>Objectives</p> <p>SMO 1: To designate off street car parking areas at key sites.</p> <p>SMO 2: To upgrade and resurface Main Street for temporary pedestrianisation to allow for temporary events such as fairs, farmers markets etc.</p> <p>SMO 3: To seek the rehabilitation of the existing footbridge at canal lock.</p>	B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1	

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
SMO 4: The upgrade along the canal front with the introduction of restrictions of vehicular movements.				
Commentary:				
<i>These provisions are consistent with and contribute towards the preferred alternative scenario for the Plan. In addition, these provisions will contribute towards sustainable mobility and the protection and management of the environment, for example:</i>				
<ul style="list-style-type: none"> • <i>“development is well connected to the rest of the town and is within a comfortable walking distance” (Policy SM 1)</i> • <i>“pedestrian-friendly... improving pedestrian facilities” (Policy SM 2)</i> • <i>“improve the network of walking routes” (Policy SM 3)</i> • <i>“subject to the requirements of the Habitats Directive” (Policy SM 4)</i> 				
<i>The evaluation against Strategic Environmental Objectives (SEOs) that is provided above is consistent with the evaluation of the preferred scenario that is provided in Section 7.</i>				
Public Spaces and Public Realm				
Policies PR 1: To promote diversity, structure and continuity in the public realm through the creation, maintenance and restoration of urban spaces such as streets and squares and to provide a pleasant sense of place and enclosure. PR 2: To prioritise the improvement of, and access to, the waterfront area and the retail core for the enjoyment of both visitors and residents alike. Objectives PRO 1: To upgrade footpath and roadway surfaces where appropriate and seek removal of overhead wires. PRO 2: To enrich the local streetscape character through the provision of appropriate street paving, furniture and planting of street trees at appropriate locations.	B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1	
Commentary:				
<i>These provisions are consistent with and contribute towards the preferred alternative scenario for the Plan. The evaluation against Strategic Environmental Objectives (SEOs) that is provided above is consistent with the evaluation of the preferred scenario that is provided in Section 7.</i>				

8.8.5 Chapter 7 Transportation and Movement

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
Transport				
Policies TP 1: To continue to promote a modal shift from private car use towards increased use of more sustainable modes of transport such as cycling, walking and public transport and to implement the initiatives contained in Government's "Smarter Travel, A Sustainable Transport Future 2009-2020". TP 2: To improve the pedestrian environment and promote the development of a network of pedestrian routes which link residential areas with recreational, educational, employment and tourist destinations to create a pedestrian environment that is safe and accessible by all. TP 3: To support co-ordination by transport providers to promote linked up transport services enabling complete coverage of Muine Bheag / Royal Oak through the creation of an integrated transport hub. This will be developed by providing bus stops around the railway station, cycle parking stands at the station and bus stops and by providing good pedestrian facilities throughout Muine Bheag / Royal Oak.	B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1	

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p>TP 4: Support the Government's Electric Transport Programme 2008 – 2020 by facilitating the roll-out of battery charging infrastructure for electric vehicles at various locations throughout Muine Bheag. The provision of such infrastructure shall comply with the requirements and specifications of Trans Policy 14 and Energy Policy 12 as contained in the Carlow County Development Plan 2015-2021.</p> <p>Objectives TO 1: To provide appropriate facilities for pedestrians and for people with special mobility needs in line with the aims of the European Charter of Pedestrian Rights. TO 2: To promote and facilitate the provision of secure parking areas for bicycles in Muine Bheag town centre and at key tourist attractions throughout the town.</p>				
<p>Commentary:</p> <p><i>The provisions of the Plan relating to transport will primarily contribute towards maximising sustainable mobility and associated interactions with emissions to air, energy usage and human health (SEOs C1 PHH1).</i></p> <p><i>Directly (from the construction and operation of transport infrastructure) and indirectly (from facilitating non-transport development) these provisions have the potential to result in significant adverse effects (including in-combination effects across County borders) upon most environmental components including ecology (SEOs B1 B2 B3), soil function (SEO S1), the status of water bodies (SEOs W1 W2), flood risk (SEO W3 PHH1), cultural heritage (SEOs CH1 CH2), the landscape (SEO L1) and emissions and energy usage (SEOs C1 PHH1).</i></p> <p><i>The provisions of the Plan relating to transport would also contribute towards and support the preferred alternative scenario (see details and evaluation at Section 7). Therefore, the effects arising from implementation of the preferred alternative scenario – both beneficial and potentially adverse - are contributed towards by these provisions. Potential adverse effects would be mitigated by the measures that have been integrated into the Plan (see Section 9) and any additional requirements arising through lower tier assessments or granting of permission.</i></p>				
<p>Transport Infrastructure</p>				
<p>Policies TP 5: To ensure that the road and street network of Muine Bheag / Royal Oak is safe and convenient, that it has adequate capacity to accommodate motorised traffic and non-motorised movements, that it has a high environmental quality with appropriate adjacent development and built form, particularly in the case of urban streets and streetscapes, and that adequate parking facilities are provided to serve the needs of the town.</p> <p>In this regard, the principles, approaches and standards as set out in relevant national policy shall inform future transport infrastructure and urban development. This shall include the Spatial Planning and National Roads Guidelines 2012, the Sustainable Residential Development in Urban Areas Guidelines for Planning Authorities 2009 and accompanying Urban Design Manual 2009, the Traffic Management Guidelines 2003, the Traffic and Transport Assessment Guidelines 2007, the Design Manual for Urban Roads and Streets (2013), the NRA Design Manual for Roads and Bridges (as appropriate to the regional road network outside areas subject to a reduced urban speed limit) and any updates or forthcoming guidelines in relation to street design and walking / cycling facilities.</p> <p>TP 6: To promote road and traffic safety measures in conjunction with relevant Government Departments and other agencies through the provision of appropriate signage, minimising or removing existing traffic hazards and preventing the creation of additional or new traffic hazards.</p> <p>Objectives TO 3: To investigate the feasibility of providing the Muine Bheag Relief Road to facilitate by-passable traffic using the regional road network to New Ross and Rosslare Ports and the Motorway to Dublin. TO 4: To develop a new route linking the town centre at Kilree Bridge to existing and proposed development on the western side of the town. TO 5: To continue to upgrade the condition of road and footpath surfaces in conjunction with the Council's annual roads programme. TO 6: To monitor and upgrade, where necessary, the standard of public lighting throughout the town. TO 7: To investigate and seek the improvement of pedestrian facilities at Kilcarrig Bridge.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M2 M3 C1 CH1 CH2 L1</p>	

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
TO 8: To improve deficiencies in pavement surface, quality and general alignment and to protect future road lines where required.				
Commentary: <i>See commentary under "Transport" above.</i>				
Policies in relation to Public Transport				
TP 7: To co-operate with public transport service providers to ensure that adequate public transport services are provided to the town. TP 8: To support the provision of public transport services by reserving land in suitable locations for public transport infrastructure and ancillary facilities such as park-and- ride.	B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1	
Commentary: <i>See commentary under "Transport" above.</i>				
Policies TP 9: To monitor traffic movements in the town and to provide passive traffic calming measures at appropriate locations as the need arises. TP 10: To ensure that new entrances are located in such a manner as to provide effective visibility for both users of the entrance and users of the public roads and footpaths throughout the town and its environs, so that opportunities for conflicting traffic movements are avoided, in the interests of public safety. Objectives TO 9: To examine the feasibility of providing additional off street car parking within and in close proximity to the town centre and to seek the provision of same following identification of suitable sites. TO 10: To provide accessible car parking spaces at appropriate locations throughout the town.	B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1	
Commentary: <i>See commentary under " Transport" above.</i>				

8.8.6 Chapter 8 Community, Social and Recreational Development

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
Community Facilities				
Policies CF 1: To support and nurture intergenerational and cross cultural relationships through the development of community initiatives such as community gardens / allotments. CF 2: To promote the development of sustainable communities on the basis of a high quality of life where people can live, work and enjoy access to a wide range of community, health and educational facilities suitable for all ages, needs and abilities. CF 3: To encourage high standards in the design and finishes of community facilities. CF 4: To optimise existing and proposed physical resources / infrastructure by supporting multi-functional building / facility use and provision.	B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1	

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p>CF 5: To encourage the siting of community facilities in suitable locations, close to existing facilities / services and public transport routes.</p> <p>CF 6: To recognise the importance of community participation in the improvement of existing community and recreational facilities, and encourage increased involvement of local groups, both independently and in association with the relevant statutory bodies, in the future provision of such facilities.</p> <p>CF 7: To consider the accommodation of small-scale community enterprise developments within existing and proposed community facilities, subject to appropriate design, layout and servicing.</p> <p>Objectives</p> <p>CFO 1: To endeavour to ensure that all community, social and recreational facilities are inclusive and accessible to all.</p> <p>CFO 2: To assist as far as possible in the provision of community facilities by reserving suitably located land, by assisting in the provision of finance for their development (where appropriate) and / or by the use of the development management process to ensure provision is made for such facilities as the Council considers appropriate.</p> <p>CFO 3: To continue to support and facilitate voluntary organisations in the town and environs.</p> <p>CFO 4: To work with the Local Enterprise Office and its sub-structures, to advance social inclusion and development by developing the co-ordinated delivery of services and facilities in Muine Bheag / Royal Oak.</p>				
<p>Commentary:</p> <p><i>These provisions are consistent with and contribute towards the preferred alternative scenario for the Plan. The evaluation against Strategic Environmental Objectives (SEOs) that is provided above is consistent with the evaluation of the preferred scenario that is provided in Section 7.</i></p>				
Educational Facilities				
<p>Policies</p> <p>EU 1: To facilitate and co-operate in the provision of schools, crèches and other education and childcare facilities.</p> <p>EU 2: To facilitate the provision of continuing educational facilities which provide for lifelong learning for all, including the elderly.</p> <p>Objectives</p> <p>EUO 1: To actively assist and liaise with the Department of Education and Skills in the provision of new and additional school places as may be required.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>	
<p>Commentary:</p> <p><i>These provisions are consistent with and contribute towards the preferred alternative scenario for the Plan. The evaluation against Strategic Environmental Objectives (SEOs) that is provided above is consistent with the evaluation of the preferred scenario that is provided in Section 7.</i></p>				
Sports, Recreation and Play				
<p>Policies</p> <p>SP 1: To maintain and enhance existing recreational facilities.</p> <p>SP 2: To continue to co-operate with community and sports bodies in the development of recreational areas in the town.</p> <p>SP 3: To prohibit the loss of existing public and private recreational open space unless alternative recreational facilities are provided at a suitable location.</p> <p>SP 4: To seek the provision of children's play facilities in new residential developments where deemed appropriate.</p> <p>Objectives</p> <p>SPO 1: To endeavour to provide play spaces throughout the town.</p> <p>SPO 2: To encourage and facilitate the provision of adult amenities in parks such as table tennis, outdoor gyms, basketball courts, bowling greens and associated facilities etc.</p> <p>SPO 3: To involve children and young people in greening initiatives and biodiversity projects, having regard to their need to interact with and be educated by nature.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>	

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
Commentary:				
<i>These provisions are consistent with and contribute towards the preferred alternative scenario for the Plan. The evaluation against Strategic Environmental Objectives (SEOs) that is provided above is consistent with the evaluation of the preferred scenario that is provided in Section 7.</i>				
Policies in relation to Recreational Potential of the River Barrow				
<p>RC 1: To facilitate where practicable the provision of cycle-ways / walkways along the extent of the River Barrow and Canal in co-operation with landowners, Waterways Ireland and government departments. Any proposed cycling or walking routes along the River and Canal will be subject to Appropriate Assessment in accordance with the Habitats Directive.</p> <p>RC 2: To support the conservation of local angling waters and investigate the feasibility of developing these waters and associated infrastructure required to advance the sport in the town, subject to the requirements of the Habitats Directive.</p> <p>RC 3: To continue to op-operate with community ad sports bodies in the development of the River Barrow and Canal for recreational uses. Projects shall have regard to the requirement for Appropriate Assessment in accordance with the Habitats Directive.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>	
Commentary:				
<i>These provisions are consistent with and contribute towards the preferred alternative scenario for the Plan. In addition, these provisions will contribute towards the protection of Natura 2000 sites:</i>				
<ul style="list-style-type: none"> • <i>"Any proposed cycling or walking routes along the River and Canal will be such subject to Appropriate Assessment in accordance with the Habitats Directive." (Policy RC 1)</i> • <i>" subject to the requirements of the Habitats Directive." (Policy RC 2)</i> • <i>"Projects shall have regard to the requirement for Appropriate Assessment in accordance with the Habitats Directive." (Policy RC 3)</i> 				
<i>The evaluation against Strategic Environmental Objectives (SEOs) that is provided above is consistent with the evaluation of the preferred scenario that is provided in Section 7.</i>				

8.8.7 Chapter 9 Utilities Infrastructure, Climate Change and Environmental Management

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
Water Supply and Quality				
Policies				
<p>WSP 1: To contribute towards the protection of existing and potential water resources, and their use by humans and wildlife, including rivers, streams, groundwater and associated habitats and species in accordance with the requirements and guidance in the EU Water Framework Directive 2000 (2000/60/EC), the European Union (Water Policy) Regulations 2003 (as amended), the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009), the Groundwater Directive 2006/118/EC and the European Communities Environmental Objectives (groundwater) Regulations, 2010 (S.I. No. 9 of 2010) and other relevant EU Directives, including associated national legislation and policy guidance (including any superseding versions of same). To also support the application and implementation of a catchment planning and management approach to development and conservation, including the implementation of Sustainable Drainage System techniques for new development.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>	

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p>WSP 2: To support the implementation of the relevant recommendations and measures as outlined in the relevant River Basin Management Plan, and associated Programmes of Measures, or any such plans that may supersede same during the lifetime of the plan, as well as relevant recommendations contained in the Water Quality in Ireland 2010 – 2012 (EPA, 2015, and any updated/superseding document). Proposals for development would not have an unacceptable impact on the water environment, including surface waters, groundwater quality and quantity, river corridors and associated woodlands. Also to have cognisance of, where relevant, the EU's Common Implementation Strategy Guidance Document No. 20 which provides guidance on exemptions to the environmental objectives of the Water Framework Directive.</p> <p>WSP 3: To facilitate Irish Water in providing water, sufficient in quantity and quality to serve the needs of the existing and future population of Muine Bheag and Royal Oak and to promote the sustainable management of the towns' water supply.</p> <p>WSP 4: To maximise the potential for beneficial re-use of water through rainwater harvesting systems and to reduce leakage to the minimum possible level in the water supply system through operational leak detection measures.</p> <p>WSP 5: To ensure that in the case of all new developments where public mains are available or likely to be available, the development will be required to connect into them subject to an agreement with Irish Water.</p> <p>WSP 6: To ensure that development will not be permitted in instances where there is insufficient capacity in the public water infrastructure.</p> <p>WSP 7: To ensure that development proposals comply with the standards and requirements of Irish Water in relation to water to facilitate proposed developments and to encourage all developers requiring a connection to the public water supply to contact Irish Water prior to submitting a planning application.</p> <p>WSP 8: To protect surface water and ground water resources and their associated habitats and species including fisheries and in particular Annex II listed species.</p> <p>Objectives</p> <p>WSO 1: To collaborate with Irish Water in contributing towards compliance with the European Communities (Drinking Water) Regulations (No.2) 2007 and ensure, that the water supply serving Muine Bheag / Royal Oak complies with the 48 parameters identified in these regulations.</p> <p>WSO 2: To facilitate the implementation of water conservation projects, which reduce consumption and leakage in existing water distribution systems, in co-operation with Irish Water.</p> <p>WSO 3: To require the adoption of water saving measures in new development proposals. Such measures may include:</p> <ul style="list-style-type: none"> • Water butts to collect rainwater • Low flush and dual flush toilets • Low water use appliances • Rainwater harvesting. <p>WSO 4: To have regard to the EPA publication 'The Provision and Quality of Drinking Water in Ireland – A Report for the year 2014' (and any subsequent update) in the maintenance of Muine Bheag / Royal Oaks water source in conjunction with Irish Water.</p> <p>WSO 5: To seek the implementation of recommendations made by the EPA arising from any failure to meet drinking water standards and any enlistment on the EPA's Remedial Action List in conjunction with Irish Water.</p> <p>WSO 6: To protect and safeguard the integrity of water supply facilities, installations and pipes.</p> <p>WSO 7: To facilitate the identification and securing of service corridors for any future new water supply for Muine Bheag.</p> <p>WSO 8: To ensure that all proposals for the development of an upgrade to the water supply system will be screened for Appropriate Assessment in accordance with Article 6(3) of the Habitats Directive and where significant impacts are identified, a Natura Impact Statement will be prepared.</p> <p>WSO 9: To implement the Water Services Investment Programme 2016 - 2021 and all subsequent Water Services Investment Programmes.</p>				

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p>Commentary:</p> <p><i>These provisions cover drinking water, water quality, drainage infrastructure and waste water infrastructure and would benefit: the protection of the environment including water resources (SEOs W1 W2), soil (SEO S1), human health (SEO PHH1) and ecology (SEOs B1 B2 B3); the provision of infrastructure (SEOs M1 M2 M3); and improvements in flood risk management (SEO W3).</i></p> <p><i>In addition to facilitating the orderly development of the town as part of the preferred alternative scenario for the Plan (see Section 7), the provision of waste water treatment (SEO M1) and safe drinking water (SEO M2) would contribute towards the protection of human health (SEO PHH1), ecology (SEO B1 B2 B3), status of waters (SEO W1 W2), soil (SEO S1). There would be potential for significant adverse environmental effects (SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1) upon various environmental components to arise during both construction – if required – and operation. For drinking water, abstraction of water could conflict with the status of water bodies and aquatic ecology, for example. For wastewater, outflow could conflict with various components including the status of water bodies, aquatic ecology and human health, for example. Such effects could be mitigated by measures including those that have been integrated into the Plan and any additional requirements arising through lower tier assessments.</i></p> <p><i>Implementation of the River Basin Management Plans and their associated Programmes of Measures (including those relating to various types of infrastructure and management initiatives) have the potential to result in significant adverse environmental effects during construction and operation on most environmental components (SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M2 M3 CH1 CH2 L1). These types of infrastructure are often constructed in ecologically and visually sensitive areas adjacent to the banks of rivers and streams. Potential adverse effects would be mitigated both by measures which have been integrated into the Plan (see Section 9) and by measures arising from lower tier assessments.</i></p>				
Waste Water				
<p>Policies</p> <p>WW 1: To collaborate with Irish Water to ensure that public wastewater collection and treatment infrastructure fully complies with the requirements of the Urban Waste Water Treatment Regulations 2001 and 2004, the Waste Water Discharge Regulations 2007 and the EC Surface Water Regulations 2009.</p> <p>WW 2: To promote, as appropriate, specific provisions for the implementation of the relevant recommendations set out in the recent Urban Waste Water Treatment in 2014 Report (EPA, 2015), in conjunction with Irish Water.</p> <p>WW 3: Not to permit the development of zoned land unless sufficient waste water treatment capacity is available to conform to the objectives of the South East River Basin Management Plan.</p> <p>WW 4: To ensure the changeover from septic tanks to mains connections in all cases where this is feasible, and that all new developments utilise and connect to the existing wastewater infrastructure. The provision of individual septic tanks and treatment plants within the Plan boundary will be strongly discouraged to minimise the risk of groundwater pollution. Where such facilities are permitted, full compliance with the 2009 EPA Code of Practice - Code of Practice Wastewater treatment and Disposal Systems serving single houses (p.e. ≤ 10), is required.</p> <p>WW 5: To facilitate Irish Water in providing additional and improved wastewater treatment capacity by the upgrading of the Muine Bheag Treatment Plant and to facilitate the provision and safeguarding of infrastructure corridors required to facilitate the sustainable development of the town.</p> <p>Objectives</p> <p>WVO 1: To co-operate with Irish Water in the provision of an improved sewerage network and sewage treatment capacity for Muine Bheag / Royal Oak.</p> <p>WVO 2: To investigate the possible extension of the public sewerage system to any un-served areas within the Local Area Plan Boundary, in co-operation with Irish Water.</p> <p>WVO 3: To ensure that any proposals for the development and /or upgrade of the Muine Bheag waste water treatment plant and waste water network will be subject to Appropriate Assessment in accordance with Article 6(3) and 6(4) of the EU Habitats Directive.</p> <p>WVO 4: To ensure that all new developments shall be provided with separate foul and surface water networks. In redevelopments, combined systems shall be separated where feasible.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>	

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p>Commentary:</p> <p><i>In addition to facilitating the orderly development of the town as part of the preferred alternative scenario for the Plan (see Section 7), the appropriate treatment of waste water (SEO M1) would contribute towards the protection of various environmental components including:</i></p> <ul style="list-style-type: none"> o <i>Human health (SEO PHH1):</i> o <i>Biodiversity, flora and fauna (SEO B1 B2 B3):</i> o <i>The status of waters (SEO W1 W2); and</i> o <i>Soil (SEO S1).</i> <p><i>There would be potential for significant adverse environmental effects (SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1) upon various environmental components to arise during both construction and operation (outflow could conflict with various components including the status of water bodies, aquatic ecology and human health for example). Such effects could be mitigated by measures including those which have been integrated into the Plan.</i></p>				
<p>Flooding and SUDs</p>				
<p>Policies</p> <p>FL 1 : To support, in co-operation with the OPW, the implementation of the EU Flood Risk Directive (2007/60/EC), the Flood Risk Regulations (SI No. 122 of 2010) and the DoEHLG/OPW publication The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 and Departmental Circular PL2/2014 (or any updated/superseding legislation or policy guidance). Carlow County Council will also take account of the OPW Catchment Flood Risk Management Plans (CFRAMS) as appropriate, the Preliminary Flood Risk Assessment (PFRA) and the Strategic Flood Risk Assessment for County Carlow 2015 – 2021.</p> <p>FL 2: To have regard to the findings and recommendations of the current Strategic Flood Risk Assessment carried out for Muine Bheag / Royal Oak Local Area Plan area.</p> <p>FL 3: To implement the use of the sequential approach and application of the Justification Tests for Development Management and Development Plans, during the period of this plan, as set out in the Flood Risk Management Guidelines as follows: 1) Avoid development that will be at risk of flooding or that will increase the flooding risk elsewhere, where possible; 2) Substitute less vulnerable uses, where avoidance is not possible; and 3) Justify, mitigate and manage the risk, where avoidance and substitution are not possible. In the case of development at appropriate lands, which may be Liable to Flooding, a site specific assessment will be carried out at each location. This assessment will include measures; a) to eliminate risk of flooding at the particular development and b) which will not increase the risk of flooding at other locations. Each development will be considered on its particular merits.</p> <p>FL 4: To ensure that all developments have regard to the surface water management conditions contained within the SFRA and appropriate section of the Local Area Plan / County Development Plan.</p> <p>SW 1: To require the use of Sustainable Urban Drainage Systems in all new developments where appropriate. The following measures will apply:</p> <ul style="list-style-type: none"> - The infiltration into the ground through the development of porous paving, swales and detention basins. - The holding of water in storage areas through the construction of green roofs, rainwater harvesting, detention basins, ponds and wetlands. - The slowdown of the movement of water. <p>Objectives</p> <p>FLO 1: To ensure the implementation of the DoEHLG/OPW publication The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 (including its accompanying Technical Appendices) and including the Department of the Environment, Community and Local Government's Circular PL 2/2014 (or any updated/superseding document) in relation to flood risk management within the plan area.</p> <p>FLO 2: To undertake a review of the SFRA following any subsequent alteration of flood mapping produced as part of the CFRAM.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>	

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p>FLO 3: To ensure that Flood Risk Assessments are carried out for any development proposal, in accordance with the "Planning System and Flood Risk Management – Guidelines for Planning Authorities (DoECLG/OPW 2009). This assessment shall be appropriate to the scale and nature of risk to the potential development.</p> <p>FLO 4: To protect water bodies and watercourses within the plan area from inappropriate development, including the river, canal, streams, associated undeveloped riparian strips, wetlands and natural floodplains. A 10 metre strip on either side of such channel will be retained, where required, to facilitate access thereto. In addition, promote the sustainable management and uses of water bodies and avoid culverting or realignment of these features.</p> <p>SWO 1: To improve and extend where technically feasible and economically viable the surface water disposal infrastructure to serve all zoned land, in order to facilitate development.</p>				
<p>Commentary:</p> <p><i>Appropriate management of both storm and surface water and flood risk (SEO W3) would contribute towards the protection of various environmental components including:</i></p> <ul style="list-style-type: none"> • Human health (SEO PHH1); • Biodiversity, flora and fauna and cultural heritage (SEOs B1 B2 B3 CH1 CH2); and • Existing infrastructure and services (SEOs M1 M2 M3) with resultant protection of the status of waters, soils, human health and ecology during flood events (SEOs W1 W2 S1 PHH1 B1 B2 B3). <p><i>Flood risk management infrastructure and the implementation of the CFRAM Study recommendations may have the potential to result in significant adverse environmental effects during construction and operation on most environmental components (SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M2 M3 CH1 CH2 L1). Potential adverse effects would be mitigated both by measures which have been integrated into the Plan (see Section 9) and by measures arising from lower tier assessments.</i></p>				
<p>Policies and Objectives in relation to Climate Change</p>				
<p>Policies</p> <p>CCP 1: To recognise European and national objectives for climate adaptation and work with the EPA, the Southern Regional Assembly and neighbouring planning authorities in implementing future Guidance for climate change proofing of landuse plan provisions as is flagged in the National Climate Change Adaptation Framework (DECLG, 2012).</p> <p>CCP 2: To support EU and national legislation and strategies on climate change in its decision making, in order to contribute to a reduction and avoidance of human induced climate change and to assist in achieving the national targets set out under the Kyoto Protocol (as updated).</p> <p>CCP 3: To support the National Climate Change Adaptation Framework 2012 (including any superseding document), the actions contained therein and any future local adaptation plan that relates to the plan area.</p> <p>Objectives</p> <p>CCO 1: To promote the integration of green infrastructure/networks (e.g. interconnected networks of green spaces /ecosystems) and other physical features on land into new development proposals in order to mitigate and adapt to climate change.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>	
<p>Commentary:</p> <p><i>These provisions are consistent with and contribute towards the preferred alternative scenario for the Plan. The evaluation against Strategic Environmental Objectives (SEOs) that is provided above is consistent with the evaluation of the preferred scenario that is provided in Section 7.</i></p> <p><i>The development of green infrastructure would facilitate: contributions towards increases in sustainable mobility and reductions in greenhouse gas emissions (SEO C1); increases in flood risk management (SEO W3) and protection of human health (SEO PHH1); protection and management biodiversity and water quality (SEOs B1 B2 B3 W1 W2); and protection cultural heritage and landscape sensitivities (SEOs CH1 CH2 L1).</i></p> <p><i>The development of green infrastructure potentially conflicts with most environmental components (SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M2 M3 CH1 CH2 L1). This type of infrastructure is often constructed in ecologically and visually sensitive areas adjacent to the banks of rivers and streams. Potential adverse effects (including in-combination effects across County borders) would be mitigated by measures that have been integrated into other provisions within the Plan (see Section 9) and any additional requirements arising through lower tier assessments or granting of permission.</i></p>				

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
Waste Management				
<p>Policies WMP 1: To support the minimisation of waste creation and to promote and encourage education and awareness on all issues associated with waste prevention, minimisation, reuse, recycling and recovery, at household, industry and community level. WMP 2: To safeguard the environment by seeking to ensure that residual waste is disposed of appropriately. WMP 3: To seek to ensure that Muine Bheag and Royal Oak are served by adequate recycling facilities in the form of kerbside collection, civic site and bring bank-recycling facilities and to adequately maintain existing recycling facilities. WMP 4: To support the implementation of the Southern Waste Management Plan 2015-2021, Carlow County Council's Litter Management Plan 2014 - 2017, the National Waste Prevention Programme, the EPA's National Hazardous Waste Management Plan 2014-2020 and any superseding versions of these plans over the lifetime of this Local Area Plan. WMP 5: To seek to manage and dispose construction waste in a way that ensures the provisions of the Waste Management Acts and new Waste Management Plan. Construction Waste Management Plans will be implemented where relevant to minimise waste and ensure correct handling and disposal of construction waste streams in accordance with the Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects, Department of the Environment, July 2006.</p> <p>Objectives WMO 1: To eliminate all unauthorised fly tipping and to regulate and control the disposal of all builders spoil and rubble. WMO 2: To assess the feasibility of additional recycling, including composting facilities in the town or environs at a location(s) that will not adversely affect residential amenity or environmental quality. WMO 3: To promote and facilitate communities to become involved in environmental awareness activities and community-based recycling initiatives or environmental management initiatives that will lead to local sustainable waste management practices.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>	
<p>Commentary:</p> <p><i>These provisions provide for waste management. The implementation of these provisions, including the construction and operation of waste management infrastructure, would facilitate the reduction of waste levels (SEO M3) at the same time as presenting potential conflicts with various environmental components (SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M2 CH1 CH2 L1). These conflicts would be mitigated by, inter alia, measures which have been integrated into the Plan and the Regional Waste Management Plan – compliance with these measures would contribute towards the protection of human health (PHH1) and various environmental components including air, soil, water, and ecology (SEOs B1 B2 B3 C1 W1 W2 S1)</i></p> <p><i>The provision of waste management facilities (SEO M3) in certain locations could reduce transport related emissions (SEOs C1 PHH1).</i></p> <p><i>The provisions would contribute towards and support the preferred alternative scenario (see details and evaluation at Section 7). Therefore, the effects arising from implementation of the preferred alternative scenario are contributed towards by these provisions.</i></p>				
Energy and Communications				
<p>Policies ECP 1: To support the provision of adequate energy and communications infrastructure to service developments including gas, electricity, broadband, and telephone services. In particular, the Council supports the increased use of renewable energy and the aims of sustainable energy use and conservation in building design and construction.</p> <p>Objectives ECO 1: To facilitate the provision of an adequate telecommunications infrastructure within the plan area, including telephone and broadband services, to the requirements of the relevant service providers and in accordance with the principles of proper planning and sustainable development. ECO 2: To facilitate the provision of an adequate supply of electricity and gas to developments in the plan area, to the requirements of the relevant service provider, and in accordance with the principles of proper planning and sustainable development.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>	

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p>ECO 3: To require new buildings to be sustainable in their siting, orientation, design and construction. Passive solar design techniques, high energy efficiency, low impact construction methods and the use of local building materials shall be encouraged to ensure that new developments minimise the environmental impacts and long term costs.</p> <p>ECO 4: To promote and facilitate the development of renewable sources of energy within the plan area and encourage the integration of micro-renewable energy sources into the design and construction of new developments, as appropriate.</p> <p>ECO 5: To seek to provide more public wi-fi zones in Muine Bheag / Royal Oak.</p> <p>ECO 6: To liaise with the ESB to investigate and encourage where possible the ducting and underground routing of overhead powerlines in Muine Bheag and Royal Oak in tandem with other work programmes, such as road resurfacing and footpath construction works.</p>				
<p>Commentary:</p> <p><i>These provisions relate to energy transmission, telecommunications and renewable energy generation. The provisions would contribute towards and support the preferred alternative scenario (see details and evaluation at Section 7). Therefore, the effects arising from implementation of the preferred alternative scenario are contributed towards by these provisions. Energy and telecommunications measures will help to provide a secure supply of energy to existing and new development. They will also contribute towards meeting renewable energy and greenhouse gas emission targets. Energy and communications related infrastructure and ancillary developments have the potential to result in a variety of impacts including:</i></p> <ul style="list-style-type: none"> • <i>Loss of biodiversity with regard to Natura 2000 Sites and Annexed habitats and species (SEO B1)</i> • <i>Loss of biodiversity with regard to ecological connectivity and stepping stones (SEO B2)</i> • <i>Loss of biodiversity with regard to designated sites including Wildlife Sites and Listed species (SEO B3)</i> • <i>Spatially concentrated deterioration in human health (SEO PHH1)</i> • <i>Damage to the hydrogeological and ecological function of the soil resource (SEO S1)</i> • <i>Adverse impacts upon the status and quality of water bodies (SEOs W1 W2)</i> • <i>Increase in the risk of flooding (SEO W3)</i> • <i>Increases in waste levels (SEO M3)</i> • <i>Effects on entries to the Record of Monuments and Places and other archaeological heritage (SEO CH1)</i> • <i>Effects on entries to the Records of Protected Structures and other architectural heritage (SEO CH2)</i> • <i>Occurrence of adverse visual impacts (SEO L1)</i> <p><i>The undergrounding of cables can result in elevated potential for impacts upon environmental components including archaeological heritage and biodiversity.</i></p> <p><i>Specific commentary on types of renewable energies:</i></p> <p>Wind Energy <i>Positive Effects: Contribution towards renewable energy and minimisation of greenhouse gases targets</i> <i>Potential Negative Effects, if unmitigated:</i></p> <ul style="list-style-type: none"> • <i>Potential impacts include those associated with construction and operation of the turbines and ancillary facilities and infrastructure (including roads and electrical infrastructure)</i> • <i>Potential human health impact: shadow flicker, noise, and impacts arising from bog bursts and landslides</i> • <i>Potential impact upon designated and non-designated biodiversity and flora and fauna including birdlife</i> • <i>Potential interactions leading to change in structure of soil and geology and changes to drainage</i> • <i>Potential impacts on water status during construction - this could interact with drinking water sources and biodiversity</i> • <i>Potential impacts upon the context of protected archaeological and architectural heritage - including the context of this heritage - as well as unknown archaeological heritage</i> • <i>Potential impacts upon traffic during construction due to transportation of turbine components</i> • <i>Changes to the character of areas would be likely to occur however visual impacts would depend on various factors including the size, number and spacing of the turbines, perception of the relevant areas and any cumulative effect arising from multiple wind farms</i> <p>Hydro-Energy <i>Positive Effects: Contribution towards renewable energy and minimisation of greenhouse gases targets</i></p>				

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p><i>Potential Negative Effects, if unmitigated:</i></p> <ul style="list-style-type: none"> • Depending on the scale and location of the development there is potential for impacts to occur on biodiversity, in particular aquatic biodiversity • Potential to impact upon the morphological, biological and chemical status of waters - this could interact with drinking water sources (in freshwater) and biodiversity • Potential interactions leading to change in structure of soil and geology • Operation could impact upon flood risk elsewhere • Potential impacts upon archaeological heritage or nearby architectural heritage, including context • Changes to the character of locations may occur however visual impacts would depend upon, inter alia, the size of the installation, ancillary facilities and the perception and visibility of the relevant area <p>Solar Energy</p> <p><i>Positive Effects: Contribution towards renewable energy targets</i></p> <p><i>Potential Negative Effects, if unmitigated:</i></p> <ul style="list-style-type: none"> • Potential impacts on architectural heritage - including the context of this heritage - at micro scale • Potential impacts on habitats and species and micro scale • Large scale installations may have visual impacts - these would depend on perception of the relevant area <p>Bio Energy</p> <p><i>Positive Effects: Contribution towards renewable energy and minimisation of greenhouse gases targets. Can provide for the use of agricultural and other wastes</i></p> <p><i>Potential Negative Effects, if unmitigated:</i></p> <ul style="list-style-type: none"> • Potential impact upon designated and non-designated biodiversity and flora and fauna arising from changes in vegetation. Soil structure may also be impacted upon. • Changes in farming practices may lead to changes in drainage and runoff which could impact upon biological and chemical status of waters - - this could interact with drinking water sources and biodiversity • Potential human health impact: odour and noise from operation of plants • Potential impacts upon traffic during operation due to transportation of fuel to plants • Fuels derived from bio-mass still produce emissions however these are less than those derived from fossil fuels • Changes to the land cover of areas could occur however visual impacts would depend on perception of the relevant area; • Biomass plants may have visual impacts - these would depend on perception of the relevant area <p>Geo Thermal</p> <p><i>Positive Effects: Contribution towards renewable energy targets</i></p> <p><i>Potential Negative Effects, if unmitigated:</i></p> <ul style="list-style-type: none"> • Potential impacts upon the status of waters and ecology contained within, especially arising from changes in the temperature of groundwater which can impact upon the structure and ecology of the aquifer and any dependent surface waters - this could interact with drinking water sources • Potential interactions leading to change in structure of soil and geology • Potential impacts upon archaeology, including unknown underground archaeology • Potential impacts upon on site water services • Potential impacts upon context of archaeological and architectural heritage arising from surface installation 				
Noise, Air and Light				
<p>P 1: To promote the preservation of best ambient air quality compatible with sustainable development in accordance with the EU Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive (2008/50/EC) and ensure that all air emissions associated with new developments are within Environmental Quality Standards as out in the Air Quality Standards Regulations 2011 (SI No. 180 of 2011) (or any updated/superseding documents).</p> <p>P 2: To seek to preserve and maintain good air and noise quality standards in Muine Bheag / Royal Oak in accordance with best practice and relevant legislation.</p> <p>P 3: To promote the preservation of best ambient air quality compatible with sustainable development.</p> <p>P 4: To seek the control of lighting of development in particular sensitive locations.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3</p>			<p>W3 C1 CH1 CH2 L1</p>

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p>P 5: To ensure that adequate soil protection measures are undertaken where appropriate. Appropriate investigations shall be carried out into the nature of any soil and groundwater contamination and the risks associated with site development works.</p> <p>Objectives</p> <p>PO 1: To assess proposals for development in terms of, inter alia, potential impact on existing adjacent developments, existing land uses and/or the surrounding landscape. Where proposed developments would be likely to have a significant adverse effect on the amenities of the area through pollution by noise, fumes, odours, dust, grit or vibration, or cause pollution of air, water and/or soil, the Council shall ensure the introduction of mitigation measures in order to eliminate adverse environmental impacts or reduce them to an acceptable operating level.</p> <p>PO 2: To ensure the implementation of the specific guidance on radon prevention measures for new homes as contained within the existing Building Regulations (including any updated/superseding regulations that may be published within the lifetime of this Plan).</p> <p>Commentary:</p> <p><i>These provisions primarily contribute towards the protection of the environment including that relating to human health, soil, water, emissions to air and provision of appropriate levels of water and waste management services (SEOs PHH1 S1 W1 W2 M1 M2 M3). Control of lighting will benefit ecology (SEO B1 B2 B3).</i></p>				

8.8.8 Chapter 10 Built and Natural Heritage

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
Policies in relation to Archaeological Heritage, Cultural Heritage, Industrial Heritage				
<p>Archaeological Heritage</p> <p>HR 1: To contribute, as appropriate, towards the protection and sympathetic enhancement of archaeological heritage, in particular by implementing the relevant provisions of the Planning and Development Act 2000 (as amended) and the National Monuments Act, 1930 (as amended).</p> <p>HR 2: To contribute, as appropriate, towards the protection of archaeological sites and monuments and their settings, archaeological objects and underwater archaeological sites that are listed in the Record of Monuments and Places, in the ownership/guardianship of the State, or that are subject of Preservation Orders or have been registered in the Register of Historic Monuments. Contribute, as appropriate, towards the protection and preservation of archaeological sites, which have been identified subsequent to the publication of the Record of Monuments and Places.</p> <p>HR 3: To ensure the implementation of the legislative, statutory and policy provisions relevant to the conservation of the built heritage including the following (and any updated/superseding documents):</p> <ul style="list-style-type: none"> Legislative provisions in the Planning and Development Act 2000 (as amended) and the National Monuments Act 1930 (as amended). Statutory provisions in the Carlow County Development Plan, including the Record of Protected Structures. Policy guidance in Government Policy on Architecture 2009-2015, the Architectural Heritage Protection Guidelines 2004/2011, the Archaeology and Development: Guidelines for Good Practice for Developers. <p>HR 4: To acknowledge and promote awareness of the origins, historical development and cultural heritage of the town and to generally support high quality developments that relate to local heritage and to ensure that new development respects and is responsive to same.</p> <p>HR 5: To require an appropriate archaeological assessment to be carried out by licenced archaeologist in respect of any proposed development likely to have an impact on a recorded monument or its setting and top consult with the</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>	

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
National Monuments Service of the Department of Arts Heritage and the Gaeltacht in relation to proposed developments adjoining archaeological sites. Cultural Heritage HR 6: To support and promote the development of cultural facilities in the town. Industrial Heritage HR 7: To promote awareness of Muine Bheag / Royal Oaks Industrial Heritage and Biodiversity. Geological Heritage HR 8: To seek to protect and maintain the character, integrity and conservation value of features or areas of geological interest that may be proposed by the DoAHG and / or the GSI within the plan area and to seek the promotion of the importance of Country Geological Sites in tourist material / publications as appropriate.				
Commentary: <i>These provisions primarily contribute towards the protection of architectural and archaeological heritage (SEOs CH1 CH2) and ecology (SEO B1 B2 B3).</i> <i>By limiting the development of the settings of architectural and archaeological heritage, these provisions also have the potential to improve other environmental components including biodiversity, flora and fauna, soil, water, human health and flood risk management (SEOs B1 B2 B3 S1 PHH1 W1 W2 W3).</i> <i>The development of cultural heritage facilities would have the potential to conflict with environmental components and would contribute towards and support the preferred alternative scenario (see details and evaluation at Section 7).</i>				
Policies in relation to European Directives, Natura 2000 Network, Biodiversity and Designated Species, Trees, Hedgerows Woodlands and Non-Designated habitats and Species and Invasive and Non-Native Species				
European Directives, Natura 2000 Network, Biodiversity and Designated Species Policies HR 9: To contribute, as appropriate, towards the protection of designated ecological sites including candidate Special Areas of Conservation (cSACs) and Special Protection Areas (SPAs); Wildlife Sites (including proposed Natural Heritage Areas); and Flora Protection Order sites. HR 10: To contribute towards compliance with relevant EU Environmental Directives and applicable National Legislation, Policies, Plans and Guidelines, including the following and any updated/superseding documents: - EU Directives, including the Habitats Directive (92/43/EEC, as amended) ^[1] , the Birds Directive (2009/147/EC) ^[2] , the Environmental Liability Directive (2004/35/EC) ^[3] , the Environmental Impact Assessment Directive (85/337/EEC, as amended), the Water Framework Directive (2000/60/EC) and the Strategic Environmental Assessment Directive (2001/42/EC). - National legislation, including the Wildlife Act 1976 ^[4] , the European Communities (Environmental Impact Assessment) Regulations 1989 (SI No. 349 of 1989) (as amended), the Wildlife (Amendment) Act 2000, the European Union (Water Policy) Regulations 2003 (as amended), the Planning and Development Act 2000 (as amended), the European Communities (Birds and Natural Habitats) Regulations 2011 (SI No. 477 of 2011) and the European Communities (Environmental Liability) Regulations 2008 ^[5] . - National policy guidelines (including any clarifying Circulars or superseding versions of same), including the Landscape and Landscape Assessment Draft Guidelines 2000, the Environmental Impact Assessment Sub-Threshold Development Guidelines 2003, Strategic Environmental Assessment Guidelines 2004 and the Appropriate Assessment Guidance 2010. - Catchment and water resource management Plans, including the relevant River Basin Management Plan.	B1 B2 B3 PHH1 S1 W1 W2 W3 L1			M1 M2 M3 C1 CH1 CH2

^[1] Including Annex I habitats, Annex II species and their habitats and Annex IV species and their breeding sites and resting places (wherever they occur).

^[2] Including Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur).

^[3] Including protected species and natural habitats.

^[4] Including species of flora and fauna and their key habitats.

^[5] Including protected species and natural habitats.

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p>- Biodiversity Plans and guidelines, including Actions for Biodiversity 2011-2016: Ireland's 2nd National Biodiversity Plan (including any superseding version of same).</p> <p>- Freshwater Pearl Mussel Regulations (S.I. 296 of 2009) (including any associated designated areas or management plans).</p> <p>- Ireland's Environment 2014 (EPA, 2014, including any superseding versions of same), and to make provision where appropriate to address the report's goals and challenges.</p> <p>HR 11: That all projects and plans arising from this plan⁴⁶ (including any associated improvement works or associated infrastructure) will be screened for the need to undertake Appropriate Assessment under Article 6 of the Habitats Directive. A plan or project will only be authorised after the competent authority has ascertained, based on scientific evidence, Screening for Appropriate Assessment, and a Stage 2 Appropriate Assessment where necessary, that:</p> <p><i>(a) The Plan or project will not give rise to significant adverse direct, indirect or secondary effects on the integrity of any European site (either individually or in combination with other plans or projects); or</i></p> <p><i>(b) The Plan or project will have significant adverse effects on the integrity of any European site (that does not host a priority natural habitat type/and or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000; or</i></p> <p><i>(c) The Plan or project will have a significant adverse effect on the integrity of any European site (that hosts a natural habitat type and/or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons for overriding public interest, restricted to reasons of human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000.</i></p> <p>HR 12 A: Not to permit projects giving rise to significant cumulative, direct, indirect or secondary impacts on Natura 2000 sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other on the basis of this plan (either individually or in combination with other plans or projects⁶¹).</p> <p>HR 12 B: To require applications for development within the constrained land use zoning objective for the Natura 2000 site (Map 13) to undergo Appropriate Assessment and demonstrate that the proposal will not give rise to any effect on the Natura 2000 site in view of its qualification features and conservation objectives.</p> <p>HR 13: To facilitate the conservation, protection and enhancement of the River Barrow including the adjacent wetlands and associated habitats and to ensure that development does not significantly adversely affect conservation values.</p> <p>HR 14: To seek the submission of an Ecological Impact Assessment for all development which may have a significant impact on the river and riparian habitats. This assessment should where appropriate suggest a minimum buffer of undisturbed vegetation to be retained to mitigate against pollution risks, reduce flooding potential, maintain habitats and provide an ecological corridor. The buffer zone shall, where possible be maintained free of development and hard surfaces. The assessment shall address protected species i.e. bats, otters including the requirement for derogation licences together with the cumulative impact of the proposed development.</p>				

⁴⁶ Such projects include but are not limited to those relating to: agriculture; amenity and recreation; contaminated sites; electricity transmission; flood alleviation and prevention; forestry; mineral extraction; renewable energy projects; roads; telecommunications; tourism; wastewater and discharges; and water supply and abstraction.

⁶¹ Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:

- a) no alternative solution available,
- b) imperative reasons of overriding public interest for the project to proceed; and
- c) Adequate compensatory measures in place.

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p>HR 15: To ensure that development does not have a significant adverse impact on plant species, animals and birds listed in the Flora Protection Order, Wildlife Act 1976 as amended, those listed in Annex IV of the Habitats Directive and those listed in Annex I of the Birds Directive.</p> <p>Trees, Hedgerows Woodlands and Non-Designated habitats and Species Policy</p> <p>HR 20: To promote the protection of trees, in particular native and broadleaf species, which are of conservation and / or amenity value. Development that requires the felling of mature trees of special interest will be discouraged.</p> <p>HP 21: To promote the protection and preservation of existing hedgerows, where appropriate and encourage planting of native hedgerow species.</p> <p>HP 22: To contribute towards the protection of non-designated habitats and species which are of local biodiversity significance as appropriate.</p> <p>Invasive and Non-Native Species Policy</p> <p>HR 23: To support as appropriate the National Parks and Wildlife Service's efforts to seek to control the spread of non-native species on land and water and where appropriate seek the submission of an invasive species management plan.</p>				
<p>Commentary:</p> <p>The provisions contribute towards the protection and management of the environment with interactions with most environmental components including:</p> <ul style="list-style-type: none"> • Biodiversity, flora and fauna (SEOs B1 B2 B3); • Landscape (SEO L1); • Waters (SEOs W1 W2); • Soil (SEO S1); • Flood risk management (SEOs W3); and • Human health (SEO PHH1). <p><i>As there are a number of overlaps between the area which is designated as cSAC and existing land use zoning objectives, Policy HR 12B requires applications for development within the constrained land use zoning objective for the Natura 2000 site (Map 13 – as shown on Figure 7.1 overleaf) to undergo Appropriate Assessment and demonstrate that the proposal will not give rise to any effect on the Natura 2000 site in view of its qualification features and conservation objectives. This benefits the protection of the River Barrow and River Nore cSAC.</i></p>				
Policies in relation to Green Infrastructure				
<p>HR 16: To encourage and facilitate, in consultation with relevant stakeholders, the development of green infrastructure that recognises the synergies that can be achieved with regard to the following:</p> <ul style="list-style-type: none"> • Provision of open space amenities • Sustainable management of water • Protection and management of biodiversity • Protection of cultural heritage • Protection of protected landscape sensitivities. <p>HR 17: To seek to contribute towards the protection and enhancement of biodiversity and ecological connectivity, including trees, hedgerows, rivers, streams, other landscape features and associated wildlife where these form part of the ecological network and/or may be considered as ecological corridors or stepping stones in the context of Article 10 of the Habitats Directive.</p> <p>HR 18: To develop a linear park, along the river Barrow, linking to areas of open space and amenity. Where lands are in private ownership it shall be policy, in any development proposal, to secure public access along the waterway.</p> <p>HP 19: To co-ordinate between open space, biodiversity and flood management, in progressing a green infrastructure network.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 CH1 CH2 L1 C1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 M3 CH1 CH2 M2 L1</p>	<p>M1</p>

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
Commentary:				
<p>The development of green infrastructure would facilitate: contributions towards increases in sustainable mobility and reductions in greenhouse gas emissions (SEO C1); increases in flood risk management (SEO W3) and protection of human health (SEO PHH1); protection and management biodiversity and water quality (SEOs B1 B2 B3 W1 W2); and protection cultural heritage and landscape sensitivities (SEOs CH1 CH2 L1).</p> <p>The development of green infrastructure potentially conflicts with most environmental components (SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M2 M3 CH1 CH2 L1). This type of infrastructure is often constructed in ecologically and visually sensitive areas adjacent to the banks of rivers and streams. Potential adverse effects (including in-combination effects across County borders) would be mitigated by measures that have been integrated into other provisions within the Plan (see Section 9) and any additional requirements arising through lower tier assessments or granting of permission.</p>				
Built and Natural Heritage Objectives				
<p>HO 1: To safeguard and enhance all buildings of intrinsic heritage value within Muine Bheag / Royal Oak and Environs and to protect all existing Protected Structures, as set out in the Record of Protected Structures.</p> <p>HO 2: To encourage the facilitation and active and appropriate reuse of vacant structures within the plan area.</p> <p>HO 3: To promote the planting of tree species which are suited to the Barrow landscape as part of any public landscaping projects, or planting associated with developments.</p> <p>HO 4: To promote educational and leisure activities such as bird watching, guided wildlife walks, photography, art etc. which increase awareness and appreciation of the Barrow River Valley but which will not result in significant disturbance to wildfowl and waders and will not have a negative impact on water quality, or on the condition of the protected habitats and species.</p> <p>HO 5: To develop a network of green corridors throughout the town interconnecting open space and extending out to the wider hinterland.</p> <p>HO 6: To support and facilitate in co-operation with relevant interested organisations including NPWS, the OPW, the Carlow Historical and Archaeological Society and Fáilte Ireland, the development of an appropriate cycle and defined pedestrian way linking the railway station, town centre, river and sites and facilities of interest in the town and its environs. Any proposed cycling or walking routes along the River will be subject to Appropriate Assessment in accordance with the Habitats Directive.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>	<p>M1</p>
Commentary:				
See commentary provided for policies above.				

8.8.9 Chapter 11 Tourism

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
Policies and Objectives in relation to Tourism				
<p>Policies</p> <p>TP 1: To seek to promote the status of Muine Bheag / Royal Oak as a popular place to live and visit, by striving to preserve the attributes and assets of the town that make it unique and by endeavouring to enrich the inhabitant/visitor experience by contributing positively towards enhancing the overall amenity, ambience and aesthetic of the town.</p> <p>TP 2: To promote and foster a growing sense of innovation and entrepreneurship in the tourism sector.</p> <p>TP 3: To encourage and support increased co-ordination, cohesion and linkages between agencies such as Fáilte Ireland, Carlow Tourism, Waterways Ireland, the Southern Regional Assembly and Transport Infrastructure Ireland.</p> <p>TP 4: To protect the natural resources upon which tourism is based through relevant policy in relation to resource protection, such as landscape character assessment, water quality and biodiversity.</p>	<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>		<p>B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>	

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	No Likely interaction with status of SEOs
<p>TP 5: To encourage, support, facilitate and promote the development and expansion of eco-tourism, geo and green tourism, industrial tourism sites and similar developments in the town, subject to no negative impacts on the environment.</p> <p>TP 6: To capitalise on potential tourist income by seeking to;</p> <ul style="list-style-type: none"> - Improve the public realm creating a café culture supporting craft and artisan / deli style retailing in the town core and in the quays area. - Promote accommodation choices in the town. - Promote and capitalise on the towns' unique position on the River Barrow and in the environs of Mount Leinster for long distance walking routes <p>TP 7: To seek to manage any increase in visitor numbers to avoid significant effects including loss of habitat and disturbance, any projects are a suitable distance from the water's edge and legislation relating to habitats, species, connectivity and designated sites is complied with.</p> <p>Objectives</p> <p>TO 1: To provide where feasible, and support the provision of tourism infrastructure and services including, walking, cycling and water based infrastructure and short-term guest accommodation facilities throughout the settlement in appropriate locations.</p> <p>TO 2: To encourage and assist the sustainable development of the tourism potential of Muine Bheag / Royal Oak in a manner that respects, builds on, protects and enhances the cultural, built and natural heritage of the town and the local amenities within the plan area.</p> <p>TO 3: To work with bodies such as Transport Infrastructure Ireland, Failte Ireland and Carlow Tourism to improve signage both to the town itself from all approach routes, and throughout the town, so that all areas of interest are clearly indicated and accessible.</p> <p>TO 4: Support the provision and augmentation, of sporting, boating, kayaking and angling facilities, pony trekking routes, adventure centres and associated ancillary uses in appropriate locations.</p> <p>TO 5: Encourage the proportionate development of individual and multiple holiday home development schemes within existing adequately serviced sites/lands in the town.</p> <p>TO 6: To create a synergy between Muine Bheag / Royal Oak and the surrounding tourist attractions.</p>				
<p>Commentary:</p> <p><i>These provisions are consistent with and contribute towards the preferred alternative scenario for the Plan. In addition, these tourism policies and objectives contribute towards sustainable development and the protection and management of the environment, for example:</i></p> <ul style="list-style-type: none"> ● <i>"To protect the natural resources upon which tourism is based through relevant policy in relation to resource protection, such as landscape character assessment, water quality and biodiversity" (Policy TP 4);</i> ● <i>"geo and green tourism...subject to no negative impacts on the environment" (Policy TP 5);</i> ● <i>"To seek to manage any increase in visitor numbers to avoid significant effects including loss of habitat and disturbance, any projects are a suitable distance from the water's edge and legislation relating to habitats, species, connectivity and designated sites is complied with" (Policy TP7); and</i> ● <i>"sustainable development of the tourism potential...protects and enhances the cultural, built and natural heritage of the town and the local amenities within the plan area" (Objective TO 2).</i> <p><i>The evaluation against Strategic Environmental Objectives (SEOs) that is provided above is consistent with the evaluation of the preferred scenario that is provided in Section 7.</i></p>				

Section 9 Mitigation Measures

9.1 Introduction

Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the Plan.

Various environmental sensitivities and issues have been communicated to the Council through the SEA, AA and SFRA processes. By integrating related recommendations into the Plan, the Council have ensured that both the beneficial environmental effects of implementing the Plan have been and will be maximised and that potential adverse effects have been and will be avoided, reduced or offset.

9.2 Integration of Environmental Considerations

Recommendations made by the SEA, AA and SFRA processes were integrated into the Plan.

Table 9.1 links key mitigation measure(s) - which have been integrated into the Plan - to the potential significant effects of implementing the Plan, if unmitigated.

The measures generally benefit multiple environmental components i.e. a measure providing for the protection of biodiversity, flora and fauna could beneficially impact upon the minimisation of flood risk and the protection of human health, for example.

Table 9.1 Integration of Environmental Considerations

Topic	Potentially Significant Adverse Effect, if Unmitigated	Recommendation	Details of how incorporated into the Plan
All	Various below	<p>Regulatory framework for environmental protection and management</p> <p>Cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management. The Council will contribute towards compliance with EU Directives - including the Habitats Directive (92/43/EEC, as amended), the Birds Directive (2009/147/EC), the Environmental Impact Assessment Directive (85/337/EEC, as amended) and the Strategic Environmental Assessment Directive (2001/42/EC) – and relevant transposing Regulations.</p>	Incorporated into Plan (Chapter 10 – Built and Natural Heritage) through policy HR10.
All	Various below	<p>Information to be considered at lower levels of decision making and environmental assessment</p> <p>Lower levels of decision making and environmental assessment should consider the sensitivities identified in Section 4 of the SEA Environmental Report that accompanies the Plan, including the following:</p> <ul style="list-style-type: none"> • Candidate Special Areas of Conservation and Special Protection Areas; • Features of the landscape that provide linkages/connectivity to designated sites (e.g. watercourses or areas of semi-natural habitats); • Proposed Natural Heritage Areas; • Entries to the Record of Monuments and Places; • Entries to the Record of Protected Structures 	Incorporated into Plan (Chapter 10 – Built and Natural Heritage) through policies: HR8, HR10, HR17, HR2 and HR3.
Biodiversity and flora and fauna	Loss of biodiversity with regard to designated biodiversity and flora and fauna, ecological connectivity and non-designated biodiversity and flora and fauna	<p>Protection of Biodiversity including Natura 2000 Network</p> <p>Contribute, as appropriate, towards the protection of designated ecological sites including candidate Special Areas of Conservation (cSACs) and Special Protection Areas (SPAs); Wildlife Sites (including proposed Natural Heritage Areas); and Flora Protection Order sites.</p> <p>Contribute towards compliance with relevant EU Environmental Directives and applicable National Legislation, Policies, Plans and Guidelines, including the following and any updated/superseding documents:</p> <ul style="list-style-type: none"> • EU Directives, including the Habitats Directive (92/43/EEC, as amended)^[1], the Birds Directive (2009/147/EC)^[2], the Environmental Liability Directive (2004/35/EC)^[3], the Environmental Impact Assessment Directive (85/337/EEC, as amended), the Water Framework Directive (2000/60/EC) and the Strategic Environmental Assessment Directive (2001/42/EC). • National legislation, including the Wildlife Act 1976^[4], the European Communities (Environmental Impact Assessment) Regulations 1989 (SI No. 349 of 1989) (as amended), the Wildlife (Amendment) Act 2000, the European Union (Water Policy) Regulations 2003 (as amended), the Planning and Development Act 2000 (as amended), the European Communities (Birds and Natural Habitats) Regulations 2011 (SI No. 477 of 2011) and the European Communities (Environmental Liability) Regulations 2008^[5]. • National policy guidelines (including any clarifying Circulars or superseding versions of same), including the Landscape and Landscape Assessment Draft Guidelines 2000, the Environmental Impact Assessment Sub-Threshold Development Guidelines 2003, Strategic Environmental Assessment Guidelines 2004 and the Appropriate Assessment Guidance 2010. • Catchment and water resource management Plans, including the relevant River Basin Management Plan. • Biodiversity Plans and guidelines, including Actions for Biodiversity 2011-2016: Ireland's 2nd National Biodiversity Plan (including any superseding version of same). • Freshwater Pearl Mussel Regulations (S.I. 296 of 2009) (including any associated designated areas or management plans). • Ireland's Environment 2014 (EPA, 2014, including any superseding versions of same), and to make provision where appropriate to address the report's goals and challenges. 	Incorporated into Plan (Chapter 10 – Built and Natural Heritage) through policies HR9 and HR10.

^[1] Including Annex I habitats, Annex II species and their habitats and Annex IV species and their breeding sites and resting places (wherever they occur).

^[2] Including Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur).

^[3] Including protected species and natural habitats.

^[4] Including species of flora and fauna and their key habitats.

^[5] Including protected species and natural habitats.

Topic	Potentially Significant Adverse Effect, if Unmitigated	Recommendation	Details of how incorporated into the Plan
		<p>Appropriate Assessment All projects and plans arising from this plan⁴⁷ (including any associated improvement works or associated infrastructure) will be screened for the need to undertake Appropriate Assessment under Article 6 of the Habitats Directive. A plan or project will only be authorised after the competent authority has ascertained, based on scientific evidence, Screening for Appropriate Assessment, and a Stage 2 Appropriate Assessment where necessary, that:</p> <ol style="list-style-type: none"> 1. The Plan or project will not give rise to significant adverse direct, indirect or secondary effects on the integrity of any European site (either individually or in combination with other plans or projects); or 2. The Plan or project will have significant adverse effects on the integrity of any European site (that does not host a priority natural habitat type/and or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000; or 3. The Plan or project will have a significant adverse effect on the integrity of any European site (that hosts a natural habitat type and/or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons for overriding public interest, restricted to reasons of human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000. 	Incorporated into Plan (Chapter 10 – Built and Natural Heritage) through policy HR11.
		<p>Protection of Natura 2000 Sites No projects giving rise to significant cumulative, direct, indirect or secondary impacts on Natura 2000 sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this plan (either individually or in combination with other plans or projects⁶¹).</p>	Incorporated into Plan (Chapter 10 – Built and Natural Heritage) through Policy HR12
		<p>Biodiversity and Ecological Networks Contribute towards the protection and enhancement of biodiversity and ecological connectivity, including trees, hedgerows, rivers, streams, other landscape features and associated wildlife where these form part of the ecological network and/or may be considered as ecological corridors or stepping stones in the context of Article 10 of the Habitats Directive.</p>	Incorporated into Plan (Chapter 10 – Built and Natural Heritage) through policy HR17.
		<p>Non-Designated Sites Contribute towards the protection of non-designated habitats and species, as appropriate.</p>	Incorporated into Plan (Chapter 10 – Built and Natural Heritage) through policy HP 21.
		<p>Non-native invasive species Support, as appropriate, the National Parks and Wildlife Service's efforts to seek to control the spread of non-native invasive species on land and water.</p>	Incorporated into Plan (Chapter 10 – Built and Natural Heritage) through policy HR23.
		<p>Protection of Riparian Zone and Waterbodies and Watercourses Planning authorities shall demonstrate that waterbodies and watercourses are protected from inappropriate development, including rivers, streams, associated undeveloped riparian strips and natural floodplains. This will include protection buffers in riverine as appropriate.</p>	Incorporated into Plan (Chapter 10 – Built and Natural Heritage) through policy HR14 and also objective FLO4 (Chapter 9).

⁴⁷ Such projects include but are not limited to those relating to: agriculture; amenity and recreation; contaminated sites; electricity transmission; flood alleviation and prevention; forestry; mineral extraction; renewable energy projects; roads; telecommunications; tourism; wastewater and discharges; and water supply and abstraction.

⁶¹ Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:

- a) no alternative solution available,
- b) imperative reasons of overriding public interest for the project to proceed; and
- c) Adequate compensatory measures in place.

Topic	Potentially Significant Adverse Effect, if Unmitigated	Recommendation	Details of how incorporated into the Plan
		<p>Constrained Land Use Zoning HR 11B: To require applications for development within the constrained land use zoning objective for the Natura 2000 site (Map 13) to undergo Appropriate Assessment and demonstrate that the proposal will not give rise to any effect on the Natura 2000 site in view of its qualification features and conservation objectives.</p> <p>Visitors To seek to manage any increase in visitor numbers to avoid significant effects including loss of habitat and disturbance, any projects are a suitable distance from the water's edge and legislation relating to habitats, species, connectivity and designated sites is complied with.</p> <p>Rewording of the following objectives from an earlier draft of the Plan LU 8: To investigate the feasibility of encourage the development of investigate the feasibility of water-related activities, subject to the requirements of the Habitats Directive. SM 4: To utilise existing features such as the River Barrow and canal tow path as the focus and basis for development walking routes connecting the town to its wider county context, subject to the requirements of the Habitats Directive. SMO 3: To seek the rehabilitation of the existing footbridge at canal lock and provide for a new footbridge over the canal at Hotel Street. RC 2: To support the conservation and development of local angling waters and investigate the feasibility of developing these waters and associated infrastructure required to advance the sport in the town, subject to the requirements of the Habitats Directive.</p>	<p>Incorporated into Plan (Chapter 10 – Built and Natural Heritage) through policy HR12B</p> <p>Incorporated into Plan (Chapter 10 – Built and Natural Heritage) through policy TP7</p> <p>Reworded as detailed.</p>
Population and human health	Potential interactions if effects upon environmental vectors such as water are not mitigated	<p>Also see measures under environmental vectors soil, water and air below.</p> <p>Human Health Assess proposals for development in terms of, inter alia, potential impact on existing adjacent developments, existing land uses and/or the surrounding landscape. Where proposed developments would be likely to have a significant adverse effect on the amenities of the area through pollution by noise, fumes, odours, dust, grit or vibration, or cause pollution of air, water and/or soil, the Council shall ensure the introduction of mitigation measures in order to eliminate adverse environmental impacts or reduce them to an acceptable operating level.</p> <p>Radon Ensure the implementation of the specific guidance on radon prevention measures for new homes as contained within the existing Building Regulations (including any updated/superseding regulations that may be published within the lifetime of this Plan).</p>	<p>Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) through objective PO1.</p> <p>Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) through objective PO2.</p>
Soil	Adverse impacts on the hydrogeological and ecological function of the soil resource	<p>Also see measures under water below.</p> <p>Soil Protection and Contamination Ensure that adequate soil protection measures are undertaken where appropriate. Adequate and appropriate investigations shall be carried out into the nature of any soil and groundwater contamination and the risks associated with site development work which is proposed.</p>	Incorporated into the Plan (Chapter 9 – Utilities Infrastructure, Climate change and Environmental management) through policy P5.
Water	Adverse impacts upon the status of water bodies arising from changes in quality, flow and/or morphology	<p>Also see measures under soil above and material assets below.</p> <p>Water Framework Directive and associated legislation Contribute towards the protection of existing and potential water resources, and their use by humans and wildlife, including rivers, streams, groundwater and associated habitats and species in accordance with the requirements and guidance in the EU Water Framework Directive 2000 (2000/60/EC), the European Union (Water Policy) Regulations 2003 (as amended), the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009), the Groundwater Directive 2006/118/EC and the European Communities Environmental Objectives (groundwater) Regulations, 2010 (S.I. No. 9 of 2010) and other relevant EU Directives, including associated national legislation and policy guidance (including any superseding versions of same). To also support the application and implementation of a catchment planning and management approach to development and conservation, including the implementation of Sustainable Drainage System techniques for new development.</p>	Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) through policy WSP1.

Topic	Potentially Significant Adverse Effect, if Unmitigated	Recommendation	Details of how incorporated into the Plan
		<p>River Basin Management Plan Support the implementation of the relevant recommendations and measures as outlined in the relevant River Basin Management Plan, and associated Programmes of Measures, or any such plans that may supersede same during the lifetime of the plan, as well as relevant recommendations contained in the Water Quality in Ireland 2010 – 2012 (EPA, 2015, and any updated/superseding document). Proposals for development would not have an unacceptable impact on the water environment, including surface waters, groundwater quality and quantity, river corridors and associated woodlands. Also to have cognisance of, where relevant, the EU's Common Implementation Strategy Guidance Document No. 20 which provides guidance on exemptions to the environmental objectives of the Water Framework Directive.</p>	Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) through policy WSP2.
	Increase in flood risk	As proposed by the SFRA	Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) through policies FL1, FL2, FL3, FL4 and objective FLO2.
Air and Climatic Factors	Failure to contribute towards sustainable transport and associated impacts (energy usage and emissions to air including noise and greenhouse gases)	<p>Overall development approach for the Plan, consolidating the town and providing for growth within and adjacent to the town centre Also see measures under human health</p> <p>CAFE Directive Promote the preservation of best ambient air quality compatible with sustainable development in accordance with the EU Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive (2008/50/EC) and ensure that all air emissions associated with new developments are within Environmental Quality Standards as out in the Air Quality Standards Regulations 2011 (SI No. 180 of 2011) (or any updated/superseding documents).</p> <p>National Climate Change Adaptation Framework Recognise European and national objectives for climate adaptation and work with the EPA, the Southern Regional Assembly and neighbouring planning authorities in implementing future Guidance for climate change proofing of landuse plan provisions as is flagged in the National Climate Change Adaptation Framework (DECLG, 2012).</p> <p>Green Infrastructure Encourage and facilitate, in consultation with relevant stakeholders, the development of green infrastructure that recognises the synergies that can be achieved with regard to the following:</p> <ul style="list-style-type: none"> • Provision of open space amenities • Sustainable management of water • Protection and management of biodiversity • Protection of cultural heritage • Protection of protected landscape sensitivities. 	<p>Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) through policy P1.</p> <p>Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) through policy CCP1.</p> <p>Incorporated into Plan (Chapters 9 and 10) through policy HR15 (chapter 10) and objective CCO1 (chapter 9).</p>
Material Assets	The need to provide adequate and appropriate water services (it is the function of Irish Water to provide for such needs)	<p>Irish Water Collaborate with and support, as relevant and appropriate, Irish Water in its new role as the lead authority for water services.</p> <p>Sufficient Capacity Development will only be permitted in instances where there is sufficient capacity in the public water and wastewater infrastructure.</p>	<p>Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) through policies WSP3, WW1 and objectives WSO1 and WWO1.</p> <p>Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) through policy WSP6.</p>

Topic	Potentially Significant Adverse Effect, if Unmitigated	Recommendation	Details of how incorporated into the Plan
		<p>Focus on Urban Waste Water Discharges in Ireland In conjunction with Irish Water, implement relevant recommendations set out in the EPA (2015) publication Urban Waste Water Treatment in 2014 (and any subsequent update).</p> <p>Urban Waste Water Treatment Regulations Collaborate with Irish Water in contributing towards compliance with the relevant provisions of the Urban Waste Water Treatment Regulations 2001 and 2004 and the Waste Water Discharge (Authorisation) Regulations 2007</p> <p>Drinking Water Regulations Collaborate with Irish Water in contributing towards compliance with the European Communities (Drinking Water) Regulations (No. 2) 2007 and compliance of water supplies comply with the 48 parameters identified in these Regulations.</p> <p>The Provision and Quality of Drinking Water in Ireland The Council, in conjunction with Irish Water, shall have regard to the EPA (2015) publication The Provision and Quality of Drinking Water in Ireland - A Report for the Year 2013 (and any subsequent update) in the establishment and maintenance of water sources in the County.</p> <p>EPA's Remedial Action List The Council, in conjunction with Irish Water, shall undertake recommendations made by the EPA arising from any failure to meet drinking water standards and any enlistment on the EPA's Remedial Action List.</p>	<p>Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) partly through policy WW2.</p> <p>Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) through policy WW1.</p> <p>Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) through objective WSO1.</p> <p>Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) through objective WSO4.</p> <p>Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) through objective WSO5.</p>
	Increases in waste levels	<p>Construction Waste Construction wastes arising will be managed and disposed of in a way that ensures the provisions of the Waste Management Acts and new Waste Management Plan. Construction Waste Management Plans will be implemented where relevant to minimise waste and ensure correct handling and disposal of construction waste streams in accordance with the Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects, Department of the Environment, July 2006.</p> <p>Waste Creation Support the minimisation of waste creation and promote a practice of reduce, reuse and recycle where possible.</p> <p>Waste Disposal Safeguard the environment by seeking to ensure that residual waste is disposed of appropriately.</p>	<p>Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) through policy WMP5.</p> <p>Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) through policy WMP1.</p> <p>Incorporated into Plan (Chapter 9 – Utilities Infrastructure, Climate Change and Environmental Management) through policy WMP2.</p>

Topic	Potentially Significant Adverse Effect, if Unmitigated	Recommendation	Details of how incorporated into the Plan
Cultural Heritage	Potential effects on protected and unknown archaeology and protected architecture arising from construction and operation	Archaeological Heritage Contribute, as appropriate, towards the protection and sympathetic enhancement of archaeological heritage, in particular by implementing the relevant provisions of the Planning and Development Act 2000 (as amended) and the National Monuments Act, 1930 (as amended).	Incorporated into Plan (Chapter 10 – Built and Natural Heritage) through policy HR1.
		Protection of Archaeological Sites Contribute, as appropriate, towards the protection of archaeological sites and monuments and their settings, archaeological objects and underwater archaeological sites that are listed in the Record of Monuments and Places, in the ownership/guardianship of the State, or that are subject of Preservation Orders or have been registered in the Register of Historic Monuments. Contribute, as appropriate, towards the protection and preservation of archaeological sites, which have been identified subsequent to the publication of the Record of Monuments and Places.	Incorporated into Plan (Chapter 10 – Built and Natural Heritage) through policy HR2.
		Consultation Consult with the National Monuments Service of the Department of Arts Heritage and the Gaeltacht in relation to proposed developments adjoining archaeological sites.	Incorporated into Plan (Chapter 10 – Built and Natural Heritage) through policy HR5.
		Architectural Heritage Contribute towards the protection of architectural heritage by complying, as appropriate, with the legislative provisions of the Planning and Development Act 2000 (as amended) in relation to architectural heritage and the policy guidance contained in the Architectural Heritage Protection Guidelines 2011 (and any updated/superseding document).	Incorporated into Plan (Chapter 10 – Built and Natural Heritage) through policy HR3.
Landscape	Occurrence of adverse visual impacts	Landscape Designations Contribute towards the protection of county and local level landscape designations from incompatible developments. Proposals for development that have the potential to significantly adversely impact upon these designations shall be accompanied by an assessment of the potential landscape and visual impacts of the proposed development - demonstrating that landscape impacts have been anticipated and avoided to a level consistent with the sensitivity of the landscape and the nature of the designation.	Incorporated into Plan (Chapter 6 – Town Centre, Landscape and Public Realm) through policy L1.

Section 10 Monitoring Measures

10.1 Introduction

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored. This section details the measures that will be used in order to monitor the likely significant effects of implementing the Plan.

Monitoring can enable, at an early stage, the identification of unforeseen adverse effects and the undertaking of appropriate remedial action.

10.2 Indicators and Targets

Monitoring is based around indicators that allow quantitative measures of trends and progress over time relating to the Strategic Environmental Objectives identified in Section 4 and used in the evaluation. Each indicator to be monitored is accompanied by the target(s) that were identified with regard to the relevant strategic actions.

Table 10.1 overleaf shows the indicators and targets which have been selected for monitoring the likely significant environmental effects of implementing the Plan, if unmitigated.

The Monitoring Programme may be updated to deal with specific environmental issues - including unforeseen effects - as they arise. Such issues may be identified by the Council or identified to the Council by other agencies.

10.3 Sources

Measurements for indicators generally come from existing monitoring sources. Existing monitoring sources include those maintained by the Council and the relevant authorities e.g. the Environmental Protection Agency, the National Parks and Wildlife Service and the Central Statistics Office.

⁴⁸ The likely significant effects of development proposals on environmental sensitivities are further determined during the development management process. By documenting this determination (e.g. whether a proposed development will impact upon a

Internal monitoring of the environmental effects of grants of permission in the Council will provide monitoring of various indicators and targets on a grant of permission by grant of permission⁴⁸ basis. Where significant adverse effects - including positive, negative, cumulative and indirect - have the potential to occur upon, for example, entries to the RMP, entries to the RPS or ecological networks as a result of the undertaking of individual projects or multiple individual projects such instances should be identified and recorded and should feed into the monitoring evaluation.

10.4 Reporting

A stand-alone Monitoring Report on the significant environmental effects of implementing the Plan will be prepared before in advance of the beginning of the review of the Plan. This report should address the indicators set out below.

The Council is responsible for the ongoing review of indicators and targets, collating existing relevant monitored data, the preparation of monitoring evaluation report(s), the publication of these reports and, if necessary, the carrying out of corrective action.

10.5 Thresholds

Thresholds at which corrective action will be considered include:

- The occurrence of flood events;
- Court cases taken by the Department of Arts, Heritage and the Gaeltacht regarding impacts upon archaeological heritage including entries to the RMP;
- Complaints received from statutory consultees regarding avoidable environmental impacts resulting from development which is granted permission under the Plan;
- Boil notices on drinking water; and
- Fish kills.

Protected Structure or whether a proposed development can be adequately served with water services) while granting permissions, or at a later date, the requirement to monitor the effects of implementing the Plan can be achieved.

Table 10.1 Selected Indicators, Targets and Monitoring Sources

Environmental Component	Selected Indicator(s)	Selected Target(s)	Source (Frequency)
Biodiversity, Flora and Fauna	B1: Conservation status of habitats and species as assessed under Article 17 of the Habitats Directive	Maintenance of favourable conservation status for all habitats and species protected under national and international legislation to be unaffected by implementation of the Plan ⁴⁹	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant). Department of Arts, Heritage and the Gaeltacht report of the implementation of the measures contained in the Habitats Directive - as required by Article 17 of the Directive (every 6 years). Consultations with the NPWS (at monitoring evaluation - see Section 10.4).
	B2: Percentage loss of functional connectivity without remediation resulting from development provided for by the Plan	B2: No significant ecological networks or parts thereof which provide functional connectivity to be lost without remediation resulting from development provided for in the Plan	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant). CORINE mapping resurvey (every c. 5 years).
	B3i: Number of significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Plan	B3i: Avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Plan	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant). Consultations with the NPWS (at monitoring evaluation - see Section 10.4).
	B3ii: Number of significant impacts on the protection of species listed on Schedule 5 of the Wildlife Act 1976	B3ii: No significant impacts on the protection of species listed on Schedule 5 of the Wildlife Act 1976	
Population and Human Health	PHH1: Occurrence (any) of a spatially concentrated deterioration in human health arising from environmental factors resulting from development provided for by the Plan, as identified by the Health Service Executive and Environmental Protection Agency	PHH1: No spatial concentrations of health problems arising from environmental factors as a result of implementing the Plan	<ul style="list-style-type: none"> Consultations with EPA and Health Service Executive (at monitoring evaluation - see Section 10.4).
Soil	S1: Soil extent and hydraulic connectivity	S1: To minimise reductions in soil extent and hydraulic connectivity	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant).
Water	W1: Classification of Overall Status (comprised of ecological and chemical status) under the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009)	W1: Not to cause deterioration in the status of any surface water or affect the ability of any surface water to achieve 'good status' ⁵⁰	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant). Data issued under the Water Framework Directive Monitoring Programme for Ireland.
	W2: Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC	W2: Not to affect the ability of groundwaters to comply with Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant). Data issued under the Water Framework Directive Monitoring Programme for Ireland (multi-annual).
	W3: Number of incompatible developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk	W3: Minimise developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk in compliance with The Planning System and Flood Risk Management Guidelines for Planning Authorities	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant).

⁴⁹ Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:

- no alternative solution available;
- imperative reasons of overriding public interest for the plan to proceed; and
- adequate compensatory measures in place.

⁵⁰ Good status as defined by the WFD equates to approximately Q4 in the current national classification of rivers and mesotrophic in the trophic classification of lakes, as set out by the EPA.

Environmental Component	Selected Indicator(s)	Selected Target(s)	Source (Frequency)
Material Assets	M1: Number of new developments granted permission which can be adequately and appropriately served with waste water treatment over the lifetime of the Plan	M1: All new developments granted permission to be connected to and adequately and appropriately served by waste water treatment over the lifetime of the Plan	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant).
	M2: Number of non-compliances with the 48 parameters identified in the European Communities (Drinking Water) Regulations (No. 2) 2007 which present a potential danger to human health as a result of implementing the Plan	M2: No non-compliances with the 48 parameters identified in the European Communities (Drinking Water) Regulations (No. 2) 2007 which present a potential danger to human health as a result of implementing the Plan	<ul style="list-style-type: none"> EPA The Provision and Quality of Drinking Water in Ireland reports (multi-annual). EPA Remedial Action List (every quarter).
	M3i: Total collected and brought household waste	M3i: Minimise increases in and, where possible, reduce household waste generation	<ul style="list-style-type: none"> EPA National Waste Reports EPA Ireland's Environment Reports
	M3ii: Packaging recovered (t) by self-complying packagers	M3ii: Maximise increases in packaging recovered (t) by self-complying packagers	<ul style="list-style-type: none"> EPA Ireland's Environment Reports
Air and Climatic Factors	C1: Percentage of population travelling to work, school or college by public transport or non-mechanical means	C1: An increase in the percentage of the population travelling to work, school or college by public transport or non-mechanical means	<ul style="list-style-type: none"> CSO Population Data (every c. 5 years).
Cultural Heritage	CH1: Percentage of entries to the Record of Monuments and Places - and the context these entries within the surrounding landscape where relevant - protected from adverse effects resulting from development which is granted permission under the Plan	CH1: Protect entries to the Record of Monuments and Places - and the context of these entries within the surrounding landscape where relevant - protected from adverse effects resulting from development which is granted permission under the Plan	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant). Consultation with Department of Arts, Heritage and the Gaeltacht (at monitoring evaluation - see Section 10.4).
	CH2: Percentage of entries to the Record of Protected Structures and their context protected from adverse effects resulting from development which is granted permission under the Plan	CH2: Protect entries to the Record of Protected Structures and their context from adverse effects resulting from development which is granted permission under the Plan	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant). Consultation with Department of Arts, Heritage and the Gaeltacht (at monitoring evaluation - see Section 10.4).
Landscape	L1: Number of complaints received from statutory consultees regarding avoidable impacts on the landscape resulting from development which is granted permission under the Plan	L1: No developments permitted which result in avoidable impacts on the landscape resulting from development which is granted permission under the Plan	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant).

Appendix I Relationship with Legislation and Other Plans and Programmes

This appendix is not intended to be a full and comprehensive review of EU Directives, the transposing regulations or the regulatory framework for environmental protection and management. The information is not exhaustive and it is recommended to consult the Directive, Regulation, Plan or Programme to become familiar with the full details of each.

European				
Directive/ Protocol/ Strategy/Programme	High Level Aim/ Purpose/ Objective	Lower level objectives, actions etc.	Relevant legislation in Ireland	Relevance to the CDP
UN Kyoto Protocol and the Second European Climate Change Programme (ECCP II)	The UN Kyoto Protocol set of policy measures to reduce greenhouse gas emissions The Second European Climate Change Programme (ECCP II) aims to identify and develop all the necessary elements of an EU strategy to implement the Kyoto Protocol	<ul style="list-style-type: none"> The Kyoto Protocol is implemented through the European Climate Change Programme (ECCP II) EU member states implement measures to improve on or compliment the specified measures and policies arising from the ECCP 	National Policy Position and final Heads of the Climate Action and Low-Carbon Development Bill	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
EU 2020 climate and energy package	<ul style="list-style-type: none"> Binding legislation which aims to ensure the European Union meets its climate and energy targets for 2020 Aims to achieve a 20% reduction in EU greenhouse gas emissions from 1990 levels Aims to raise the share of EU energy consumption produced from renewable resources to 20% Achieve a 20% improvement in the EU's energy efficiency 	Four pieces of complimentary legislation: <ul style="list-style-type: none"> Reform of the EU Emissions Trading System (EU ETS) to include a cap on emission allowances in addition to existing system of national caps Member States have agreed national targets for non-EU ETS emissions from countries outside the EU Meet the national renewable energy targets of 16% for Ireland by 2020 Preparing a legal framework for technologies in carbon capture and storage 	The Framework for Climate Change Bill European Communities (Renewable Energy) Regulations 2011 (S.I. No. 147/2011)	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Habitats Directive (92/43/EEC)	<ul style="list-style-type: none"> Promote the preservation, protection and improvement of the quality of the environment, including the conservation of natural habitats and of wild fauna and flora Contribute towards ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora Maintain or restore to favourable conservation status, natural habitats and species of wild fauna and flora of Community interest Promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. 	<ul style="list-style-type: none"> Propose and protect sites of importance to habitats, plant and animal species Establish a network of Natura 2000 sites hosting the natural habitat types listed in Annex I and habitats of the species listed in Annex II, to enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range Carry out comprehensive assessment of habitat types and species present Establish a system of strict protection for the animal species and plant species listed in Annex IV 	European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011) The Wildlife Act 1976 and the Wildlife (Amendment) Act 2000	The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations

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<p>Birds Directive (2009/147/EC)</p>	<ul style="list-style-type: none"> • Conserve all species of naturally occurring birds in the wild state including their eggs, nests and habitats • Protect, manage and control these species and comply with regulations relating to their exploitation • The species included in Annex I shall be the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution 	<ul style="list-style-type: none"> • Preserve, maintain or re-establish a sufficient diversity and area of habitats for all the species of birds referred to in Annex 1. • Preserve, maintain and establish biotopes and habitats to include the creation of protected areas (Special Protection Areas); ensure the upkeep and management in accordance with the ecological needs of habitats inside and outside the protected zones, re-establish destroyed biotopes and creation of biotopes • Measures for regularly occurring migratory species not listed in Annex I is required as regards their breeding, moulting and wintering areas and staging posts along their migration routes. The protection of wetlands and particularly wetlands of international importance. 	<p>European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011)</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>
<p>European Union Biodiversity Strategy to 2020</p>	<ul style="list-style-type: none"> • Aims to halt or reverse biodiversity loss and speed up the EU's transition towards a resource efficient and green economy • Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible 	<ul style="list-style-type: none"> • Outlines six targets and twenty actions to aid European in halting the loss to biodiversity and eco-system services • The six targets cover: <ul style="list-style-type: none"> ○ Full implementation of EU nature legislation to protect biodiversity ○ Maintaining, enhancing and protecting for ecosystems, and green infrastructure ○ Ensuring sustainable agriculture, and forestry ○ Sustainable management of fish stocks ○ Reducing invasive alien species ○ Addressing the global need to contribute towards averting global biodiversity loss 	<p>Actions for Biodiversity 2011-2016 Ireland's National Biodiversity Plan, 2011</p>	<p>To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management</p>
<p>The Clean Air for Europe Directive (2008/50/EC)</p> <p>Fourth Daughter Directive (2004/107/EC)</p>	<ul style="list-style-type: none"> • The CAFE Directive merges existing legislation into a single directive (except for the fourth daughter directive) • Sets new air quality objectives for PM2.5 (fine particles) including the limit value and exposure related objectives • Accounts for the possibility to discount natural sources of pollution when assessing compliance against limit values • Allows the possibility for time extensions of three years (PM10) or up to five years (NO2, benzene) for complying with limit values, based on conditions and the assessment by the European Commission. • The Fourth Daughter Directive lists pollutants, target values and monitoring requirements for the following: arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air 	<ul style="list-style-type: none"> • Sets objectives for ambient air quality • designed to avoid, prevent or reduce harmful effects on human health and the environment as a whole • Aims to assess the ambient air quality in Member States on the basis of common methods and criteria; • Obtains information on ambient air quality in order to help combat air pollution and nuisance and to monitor long-term trends and improvements resulting from national and Community measures; • Ensures that such information on ambient air quality is made available to the public; • Aims to maintain air quality where it is good and improving it in other cases; • Aims to promote increased cooperation between the Member States in reducing air pollution. 	<p>Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011)</p> <p>Arsenic, Cadmium, Mercury, Nickel and Polycyclic Aromatic Hydrocarbons in Ambient Air Regulations 2009 (S.I. No. 58 of 2009)</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>

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<p>Noise Directive 2002/49/EC</p>	<p>The Noise Directive - Directive 2002/49/EC relating to the assessment and management of environmental noise - is part of an EU strategy setting out to reduce the number of people affected by noise in the longer term and to provide a framework for developing existing Community policy on noise reduction from source.</p>	<p>The Directive requires competent authorities in Member States to:</p> <ul style="list-style-type: none"> • Draw up strategic noise maps for major roads, railways, airports and agglomerations, using harmonised noise indicators and use these maps to assess the number of people which may be impacted upon as a result of excessive noise levels; • Draw up action plans to reduce noise where necessary and maintain environmental noise quality where it is good; and • Inform and consult the public about noise exposure, its effects, and the measures considered to address noise. <p>The Directive does not set any limit value, nor does it prescribe the measures to be used in the action plans, which remain at the discretion of the competent authorities.</p>	<p>Environmental Noise Regulations 2006 (S.I. No. 140 of 2006)</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>
<p>Floods Directive (2007/60/EC)</p>	<ul style="list-style-type: none"> • Establishes a framework for the assessment and management of flood risks • Reduce adverse consequences for human health, the environment, cultural heritage and economic activity associated with floods in the Community 	<ul style="list-style-type: none"> • Assess all water courses and coast lines at risk from flooding through Flood Risk Assessment • Prepare flood hazard maps and flood risk maps outlining the extent or potential of flooding and assets and humans at risk in these areas at River Basin District level (Article 3(2) (b)) and areas covered by Article 5(1) and Article 13(1) (b) in accordance with paragraphs 2 and 3 • Implement flood risk management plans and take adequate and coordinated measures to reduce flood risk for the areas covered by the Articles listed above • Inform the public and allow the public to participate in planning process 	<p>European Communities (Assessment and Management of Flood Risks) Regulations (S.I. 122/2010)</p> <p>European Union (Environmental Impact Assessment) (Flood Risk) Regulations 2012 (S.I. No. 470/2012)</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>
<p>Water Framework Directive (2000/60/EC)</p>	<ul style="list-style-type: none"> • Establish a framework for the protection of water bodies to include inland surface waters, transitional waters, coastal waters and groundwater and their dependent wildlife and habitats • Preserve and prevent the deterioration of water status and where necessary improve and maintain "good status" of water bodies • Promote sustainable water usage • The Water Framework Directive repealed the following Directives: <ul style="list-style-type: none"> ○ The Drinking Water Abstraction Directive ○ Sampling Drinking Water Directive ○ Exchange of Information on Quality of Surface Freshwater Directive ○ Shellfish Directive ○ Freshwater Fish Directive ○ Groundwater (Dangerous Substances) Directive ○ Dangerous Substances Directive 	<ul style="list-style-type: none"> • Protect, enhance and restore all water bodies and meet the environmental objectives outlined in Article 4 of the Directive • Achieve "good status" for all waters by December 2015 • Manage water bodies based on identifying and establishing river basins districts • Involve the public and streamline legislation • Prepare and implement a River Basin Management Plan for each river basin districts identified and a Register of Protected Areas • Establish a programme of monitoring for surface water status, ground water status and protected areas • Recover costs for water services 	<p>European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003) (as amended)</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>

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<p>Groundwater Directive (2006/118/EC)</p>	<ul style="list-style-type: none"> • Protect, control and conserve groundwater • Prevent the deterioration of the status of all bodies of groundwater • Implements measures to prevent and control groundwater pollution, including criteria for assessing good groundwater chemical status and criteria for the identification of significant and sustained upward trends and for the definition of starting points for trend reversals. 	<ul style="list-style-type: none"> • Meet minimum groundwater standards listed in Annex 1 of Directive • Meet threshold values adopted by national legislation for the pollutants, groups of pollutants and indicators of pollution which have been identified as contributing to the characterisation of bodies or groups of bodies of groundwater as being at risk, also taking into account Part B of Annex II 	<p>European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. No. 9/2010) (as amended)</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>
<p>Bathing Water Directive (2006/7/EC)</p>	<ul style="list-style-type: none"> • Preserve, protect and improve the quality of the environment and to protect human health by complementing the Water Framework Directive 2000/60/EC 	<ul style="list-style-type: none"> • Identify all bathing waters and define the length of the bathing season • Monitor bathing water quality as per Annex 1, Column A at the frequency outlined in Annex IV of the Directive • Determine the quality status of the bathing water • Achieve at least 'sufficient' standard by 2015 with the aim increase the standard to 'excellent' or 'good' • Prepare, review and update a bathing water profile of each in accordance with Annex III • Manage bathing water areas in exceptional circumstances to prevent an adverse impact on bathing water quality and on bathers' health • Provide public information on bathing water quality 	<p>Bathing Water Quality (Amendment) Regulations 2008 (S.I. No. 79 of 2008) (as amended)</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>
<p>Drinking Water Directive (98/83/EC)</p>	<ul style="list-style-type: none"> • Improve and maintain the quality of water intended for human consumption • Protect human health from the adverse effects of any contamination of water intended for human consumption by ensuring that it is wholesome and clean 	<ul style="list-style-type: none"> • Set values applicable to water intended for human consumption for the parameters set out in Annex I • Set values for additional parameters not included in Annex I, where the protection of human health within national territory or part of it so requires. The values set should, as a minimum, satisfy the requirements of Article 4(1) (a) • Implement all measures necessary to ensure that regular monitoring of the quality of water intended for human consumption is carried out, in order to check that the water available to consumers meets the requirements of this Directive and in particular the parametric values set in accordance with Article 5 • Ensure that any failure to meet the parametric values set in accordance with Article 5 is immediately investigated in order to identify the cause • Ensure that the necessary remedial action is taken as soon as possible to restore its quality and shall give priority to their enforcement action • Undertake remedial action to restore the quality of the water where necessary to protect human health • Notify consumers when remedial action is being undertaken except where the competent authorities consider the non-compliance with the parametric value to be trivial 	<p>European Union (Drinking Water) Regulations 2014 (S.I. No. 106 of 2007) (as amended)</p> <p>European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003)</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>

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<p>Urban Waste Water Treatment Directive (91/271/EEC)</p>	<ul style="list-style-type: none"> • This Directive concerns the collection, treatment and discharge of urban waste water and the treatment and discharge of waste water from certain industrial sectors • The objective of the Directive is to protect the environment from the adverse effects of waste water discharges 	<ul style="list-style-type: none"> • Urban waste water entering collecting systems shall before discharge, be subject to secondary treatment • Annex II requires the designation of areas sensitive to eutrophication which receive water discharges • Establishes minimum requirements for urban waste water collection and treatment systems in specified agglomerations to include special requirements for sensitive areas and certain industrial sectors 	<p>European Communities (Urban Waste Water Treatment) Regulations 2001 (S.I. No. 254/2001)</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>
<p>Environmental Liability Directive (2004/35/EC)</p>	<ul style="list-style-type: none"> • Establish a framework of environmental liability based on the 'polluter-pays' principle, to prevent and remedy environmental damage 	<ul style="list-style-type: none"> • Relates to environmental damage caused by any of the occupational activities listed in Annex III, and to any imminent threat of such damage occurring by reason of any of those activities: damage to protected species and natural habitats caused by any occupational activities other than those listed in Annex III, and to any imminent threat of such damage occurring by reason of any of those activities, whenever the operator has been at fault or negligent • Where environmental damage has not yet occurred but there is an imminent threat of such damage occurring, the operator shall, without delay, take the necessary preventive measures • Where environmental damage has occurred the operator shall, without delay, inform the competent authority of all relevant aspects of the situation and take all practicable steps to immediately control, contain, remove or otherwise manage the relevant contaminants and/or any other damage factors in order to limit or to prevent further environmental damage and adverse effects on human health or further impairment of services and the necessary remedial measures, in accordance with Article 7. • The operator shall bear the costs for the preventive and remedial actions taken pursuant to this Directive • The competent authority shall be entitled to initiate cost recovery proceedings against the operator • The operator may be required to provide financial security guarantees to ensure their responsibilities under the directive are met 	<p>European Communities (Environmental Liability) Regulations, 2008</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>

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<p>SEA Directive (2001/42/EC)</p>	<ul style="list-style-type: none"> Contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development Provide for a high level of protection of the environment by carrying out an environmental assessment of plans and programmes which are likely to have significant effects on the environment 	<ul style="list-style-type: none"> Carry out an environmental assessment for plans or programmes referred to in Articles 2 to 4 of the Directive Prepare an environmental report which identifies, describes and evaluates the likely significant effects on the environment of implementing the plan or programme and reasonable alternatives that consider the objectives and the geographical scope of the plan or programme Consult with relevant authorities, stakeholders and public allowing sufficient time to make a submission Consult other Member States where the implementation of a plan or programme is likely to have transboundary environmental effects Inform relevant authorities and stakeholders on the decision to implement the plan or programme Issue a statement to include requirements detailed in Article 9 of the Directive Monitor and mitigate significant environmental effects identified by the assessment 	<p>European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. No. 435/ 2004) (as amended)</p> <p>Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. No. 436/2004) (as amended)</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>
<p>EIA Directive (2011/92/EU as amended by 2014/52/EU)</p>	<ul style="list-style-type: none"> Requires the assessment of the environmental effects of public and private projects which are likely to have significant effects on the environment Aims to assess and implement avoidance or mitigation measures to eliminate environmental effects, before consent is given of projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to a requirement for development consent and an assessment with regard to their effects. Those projects are defined in Article 4 	<ul style="list-style-type: none"> All projects listed in Annex I are considered as having significant effects on the environment and require an EIA For projects listed in Annex II, a "screening procedure" is required to determine the effects of projects on the basis of thresholds/criteria or a case by case examination. This should take into account Annex III. The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case and in accordance with Articles 4 to 12, the direct and indirect effects of a project on the following factors: human beings, fauna and flora, soil, water, air, climate and the landscape, material assets and the cultural heritage, the interaction between each factor Consult with relevant authorities, stakeholders and public allowing sufficient time to make a submission before a decision is made The information to be provided by the developer in accordance with paragraph 1 shall include at least: <ul style="list-style-type: none"> a description of the project comprising information on the site, design and size of the project; a description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects; the data required to identify and assess the main effects which the project is likely to have on the environment; an outline of the main alternatives studied by the developer and an indication of the main reasons for his choice, taking into account the environmental effects; a non-technical summary of the information referred to each of the above. 	<p>European Communities (Environmental Impact Assessment) Regulations 1989 (S.I. No. 349/1989) (as amended)</p> <p>European Union (Environmental Impact Assessment) (Flood Risk) Regulations 2012 (S.I. No. 470/2012)</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>

National				
Policy/ Framework / Initiative / Strategy	High Level Aim/ Purpose/ Objective	Lower level relevant objectives , actions etc.	Relevant legislation	Relevance to the CDP
Infrastructure and Capital Investment 2012-16: Medium Term Exchequer Framework	<ul style="list-style-type: none"> Reviews infrastructure and capital spending over a medium timeframe to ensure investment is made in the best areas Identifies gaps in existing infrastructure that require addressing to aid economic recovery, social cohesion and environmental sustainability 	<p>The approach identifies four main components of the investment strategy as follows:</p> <ul style="list-style-type: none"> Economic infrastructure – encompassing transport networks, energy provision and telecommunications capacity Investment in the productive sector and human capital – such as direct supports for enterprise development; science, technology and innovation advancement; supports for tourism, agriculture, fisheries and forestry; and capital investment in education infrastructure Environmental infrastructure – including our waste and water systems and investment for environmental sustainability Critical social investment – such as the health service and social housing programmes 	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Smarter Travel – A Sustainable Transport Future – A New Transport Policy for Ireland 2009 – 2020 (2009)	<ul style="list-style-type: none"> Outlines a policy for how a sustainable travel and transport system can be achieved Sets out five key goals: <ul style="list-style-type: none"> To reduce overall travel demand. To maximise the efficiency of the transport network. To reduce reliance on fossil fuels. To reduce transport emissions. To improve accessibility to transport. 	<ul style="list-style-type: none"> Others lower level aims include: <ul style="list-style-type: none"> reduce distance travelled by private car and encourage smarter travel, including focusing population growth in areas of employment and to encourage people to live in close proximity to places of employment ensuring that alternatives to the car are more widely available, mainly through a radically improved public transport service and through investment in cycling and walking improving the fuel efficiency of motorised transport through improved fleet structure, energy efficient driving and alternative technologies strengthening institutional arrangements to deliver the targets 	not applicable	In combination with this Policy the CDP will contribute towards smarter travel and associated positive environmental effects.
Ireland's First National Cycle Policy Framework (2009)	<ul style="list-style-type: none"> Outlines objectives and actions aimed at developing a strong cycle network in Ireland Sets out 19 specific objectives, and details the 109 actions, aimed at ensuring that a cycling culture is developed 	<ul style="list-style-type: none"> Sets a target where 10% of all journeys will be made by bike by 2020 Proposes the planning, infrastructure, communication, education and stakeholder participations measures required to implement the initiative 	not applicable	In combination with this Framework the CDP will contribute towards smarter travel and associated positive environmental effects.
Scoping Study for a National Cycle Network (NCN)	<ul style="list-style-type: none"> Investigated the feasibility of developing a National Cycle Network for recreational routes in rural areas, urban areas and connecting larger urban areas The scoping study and subsequent workshops resulted in a recommended National Cycle Network 	not applicable	not applicable	In combination with this Study the CDP will contribute towards smarter travel and associated positive environmental effects.
Strategic Framework for Integrated Land use and Transport (SFILT) – Department of Transport, Tourism And Sport	<ul style="list-style-type: none"> Presents the findings and conclusions of a steering group that was convened and tasked with overseeing the preparation of an integrated, evidence-based framework that would guide key land transport investment decisions. 	<p>Key features of the framework policy include the following:</p> <ul style="list-style-type: none"> Focus on economic growth Principles to frame future investment 	not applicable	In combination with this Study the CDP will contribute towards smarter travel and associated positive environmental effects.

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National Climate Change Strategy 2007 – 2012 (2007)	<ul style="list-style-type: none"> • Outlines measures to be undertaken to meet greenhouse gas emission commitments 	not applicable	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Delivering a Sustainable Energy Future for Ireland – The Energy Policy Framework 2007 – 2020 (2007)	<ul style="list-style-type: none"> • White paper setting out a framework for delivering a sustainable energy future in Ireland • Outlines strategic Goals for: <ul style="list-style-type: none"> ○ Security of Supply ○ Sustainability of Energy ○ Competitiveness of Energy Supply 	<p>The underpinning Strategic Goals are:</p> <ul style="list-style-type: none"> • Ensuring that electricity supply consistently meets demand • Ensuring the physical security and reliability of gas supplies to Ireland • Enhancing the diversity of fuels used for power generation • Delivering electricity and gas to homes and businesses over efficient, reliable and secure networks • Creating a stable attractive environment for hydrocarbon exploration and production • Being prepared for energy supply disruptions 	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Climate Change Adaptation Framework (DECLG, 2012)	The National Climate Change Adaptation Framework provides a strategic policy focus to ensure adaptation measures are taken across different sectors and levels of government to reduce Ireland's vulnerability to the negative impacts of climate change.	<p>Actions include those relating to:</p> <ul style="list-style-type: none"> • Research and Knowledge Base • Governance • Local Plans • Stakeholder Consultation 	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Renewable Energy Action Plan	<ul style="list-style-type: none"> • A strategic approach for Ireland including measures to meet European targets for 2020 including Ireland's 16% target of gross final consumption to come from renewables by 2020 	not applicable	Renewable Energy Directive 2009/28/EC	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Energy Efficiency Action Plan for Ireland 2007 – 2020 (2007)	<ul style="list-style-type: none"> • This is the second National Energy Efficiency Action Plan for Ireland 	<ul style="list-style-type: none"> • The Plan reviews the original 90 actions outlined in the first Plan and updates/renews/removes them as appropriate 	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management

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Sustainable Development – A Strategy for Ireland (1997)	<ul style="list-style-type: none"> Provides an analysis and a strategic framework for sustainable development in Ireland Identifies the approaches required to support sustainable development 	not applicable	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Wildlife Act of 1976 Wildlife (Amendment) Act, 2000	<ul style="list-style-type: none"> The act provides protection and conservation of wild flora and fauna 	<ul style="list-style-type: none"> Provides protection for certain species, their habitats and important ecosystems Give statutory protection to NHAs Enhances wildlife species and their habitats Includes more species for protection 	not applicable	The Council is obliged to comply with, as relevant and appropriate, the requirements of this legislation
Actions for Biodiversity 2011-2016 Ireland's National Biodiversity Plan, 2011	<ul style="list-style-type: none"> Sets out strategic objectives, targets and actions to conserve and restore Ireland's biodiversity and to prevent and reduce the loss of biodiversity in Ireland and globally 	<ul style="list-style-type: none"> To mainstream biodiversity in the decision making process across all sectors To substantially strengthen the knowledge base for conservation, management and sustainable use of biodiversity To increase awareness and appreciation of biodiversity and ecosystems services To conserve and restore biodiversity and ecosystem services in the wider countryside To conserve and restore biodiversity and ecosystem services in the marine environment To expand and improve on the management of protected areas and legally protected species To substantially strengthen the effectiveness of international governance for biodiversity and ecosystem services 	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
The Planning System and Flood Risk Management – Guidelines for Planning Authorities (2009)	<ul style="list-style-type: none"> Sets out comprehensive mechanisms for the incorporation of flood risk identification, assessment and management into the planning process Ensures flood risk is a key consideration in preparing development plans and local area plans and in the assessment of planning applications Implementation of the Guidelines is through actions at national, regional, local authority and site-specific levels 	<ul style="list-style-type: none"> Avoid inappropriate development in areas at risk of flooding Avoid new developments increasing flood risk elsewhere, including that which may arise from surface water run-off Ensure effective management of residual risks for development permitted in floodplains Avoid unnecessary restriction of national, regional or local economic and social growth Improve the understanding of flood risk among relevant stakeholders Ensure that the requirements of EU and national law in relation to the natural environment and nature conservation are complied with at all stages of flood risk management. 	<p>Planning and Development Act 2000 (as amended)</p> <p>S.I. No. 122/2010 EC (Assessment and Management of Flood Risks) Regulations 2010</p> <p>S.I. No. 470/2012 European Union (Environmental Impact Assessment) (Flood Risk) Regulations 2012.</p>	The Council is obliged to comply with, as relevant and appropriate, the requirements of these Guidelines

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<p>European Communities (Water Policy) Regulations of 2003 (SI 722 of 2003)</p> <p>European Communities (Water Policy) Regulations of 2003 (SI 350 of 2014)</p>	<ul style="list-style-type: none"> • Transpose the Water Framework Directive into legislation • Outlines the general duty of public authorities in relation to water • Identifies the competent authorities in charge of water policy (amended to Irish Water in 2013) and gives EPA and the CER the authority to regulate and supervise their actions 	<ul style="list-style-type: none"> • Implements River basin districts and characterisation of RBDs and River Basin Management Plans • Requires the public to be informed and consulted on the Plan and for progress reports to be published on RBDs • Implements a Register of protected areas, Classification systems and Monitoring programmes for water bodies • Allows the competent authority to recover the cost of damage/destruction of status of water body • Outlines environmental objectives and programme of measures and environmental quality standards for priority substances • Outlines criteria for assessment of groundwater 	<p>Water Framework Directive 2000/60/EC</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of this legislation</p>
<p>European Communities Environmental Objectives (Surface waters) Regulations of 2009 (SI 272 of 2009)</p>	<ul style="list-style-type: none"> • Transpose the requirements of the Water Framework Directive into Irish Legislation 	<ul style="list-style-type: none"> • Outlines environmental objectives to be achieved for surface water bodies • Outlines surface water quality standards • Establishes threshold values for the classification and protection of surface waters against pollution and deterioration in quality 	<p>Water Framework Directive 2000/60/EC</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of this legislation</p>
<p>European Communities Environmental Objectives (Groundwater) Regulations of 2010 (SI 9 of 2010)</p>	<ul style="list-style-type: none"> • Transpose the requirements of the Groundwater Directive 2006/118/EC into Irish Legislation 	<ul style="list-style-type: none"> • Outlines environmental objectives to be achieved for groundwater bodies of groundwater against pollution and deterioration in quality • Sets groundwater quality standards • Outlines threshold values for the classification and protection of groundwater 	<p>Water Framework Directive 2000/60/EC Groundwater Directive (2006/118/EC)</p> <p>European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. No. 9/2010) (as amended)</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of this legislation</p>
<p>Water Pollution Acts 1977 to 1990</p>	<ul style="list-style-type: none"> • The Water Pollution Acts allow Local Authorities the authority regulate and supervise actions relating to water in their division 	<p>The Water Pollution Acts enable local authorities to:</p> <ul style="list-style-type: none"> • prosecute for water pollution offences; • attach appropriate pollution control conditions in the licensing of effluent discharges from industry, etc., made to waters; • issue notices ("section 12 notices") to farmers, etc., specifying measures to be taken within a prescribed period to prevent water pollution; • issue notices requiring a person to cease the pollution of waters and requiring the mitigation or remedying of any effects of the pollution in the manner and within the period specified in such notices; • seek court orders, including High Court injunctions, to prevent, terminate, mitigate or remedy pollution/its effects; • prepare water quality management plans for any waters in or adjoining their functional areas 	<p>Water Services Act 2013</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of this legislation</p>
<p>European Communities (Urban Waste Water Treatment) Regulations 2001 (S.I. No. 254/2001)</p>	<ul style="list-style-type: none"> • Transpose the Urban Waste Water Treatment Directive into Irish Legislation • Aims to protect receiving waters from environmental damage arising from Urban Wastewater 	<ul style="list-style-type: none"> • Sets out the legislative requirements for urban waste water collection and treatment systems • Provides for monitoring programmes of discharges • Specifies threshold values and minimum standards for water quality 	<p>Urban Waste Water Treatment Directive (91/271/EEC)</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of this legislation</p>

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<p>Water Services Act 2007</p> <p>Water Services (Amendment) Act 2012</p> <p>Water Services Act (No. 2) 2013</p>	<ul style="list-style-type: none"> Provides the water services infrastructure Outlines the responsibilities involved in delivering and managing water services Identifies the authority in charge of provision of water and waste water supply Irish Water was given the responsibility of the provision of water and wastewater services in the amendment act during 2013, therefore these services are no longer the responsibility of the 34 Local Authorities in Ireland 	<p>Key strategic objectives include:</p> <ul style="list-style-type: none"> Ensuring Irish Water delivers infrastructural projects that meet key public health, environmental and economic objectives in the water services sector. Ensuring the provision of adequate water and sewerage services in the gateways and hubs listed in the National Spatial Strategy, and in other locations where services need to be enhanced. Ensuring good quality drinking water is available to all consumers of public and group water supplies, in compliance with national and EU drinking water standards Ensuring the provision of the remaining infrastructure needed to provide secondary wastewater treatment, for compliance with the requirements of the EU Urban Wastewater Treatment Directive. Promoting water conservation through Irish Water's Capital Investment Plan, the Rural Water Programme and other measures. Monitoring the on-going implementation of septic tanks inspection regime and the National Inspection Plan for Domestic Waste Water Treatment Systems. Ensuring a fair funding model to deliver water services. Overseeing the establishment of an economic regulation function under the CER. 	<p>not applicable</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of this legislation</p>
<p>Irish Water's Water Services Strategic Plan 2015 and associated Proposed Capital Investment Plan 2014-2016</p>	<ul style="list-style-type: none"> This Water Services Strategic Plan sets out strategic objectives for the delivery of water services over the next 25 years up to 2040. It details current and future challenges which affect the provision of water services and identifies the priorities to be tackled in the short and medium term. 	<p>Six strategic objectives as follows:</p> <ul style="list-style-type: none"> Meet Customer Expectations. Ensure a Safe and Reliable Water Supply. Provide Effective Management of Wastewater. Protect and Enhance the Environment. Support Social and Economic Growth. Invest in Our Future. 	<p>The Water Services (No. 2) Act (2013)</p>	<p>To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management</p>
<p>National Spatial Strategy 2002-2020 (2002)</p>	<ul style="list-style-type: none"> Planning framework for Ireland Aims to achieve a better balance of social, economic and physical development across Ireland, supported by effective planning 	<ul style="list-style-type: none"> Proposes that areas of sufficient scale and critical mass will be built up through a network of gateways, hubs and key town 	<p>Planning and Development Act 2000 (as amended)</p>	<p>To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management</p>
<p>Grid25 Implementation Programme</p>	<ul style="list-style-type: none"> Framework for the development of the electricity transmission grid in the short, medium and long terms, to support a long-term sustainable and reliable electricity supply 	<ul style="list-style-type: none"> Seeks to implement the provisions of the 2007 Government White Paper on Energy - "Delivering a Sustainable Energy Future for Ireland" in terms of development of electricity transmission infrastructure 	<p>not applicable</p>	<p>To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management</p>

Food Harvest 2020	<ul style="list-style-type: none"> Food Harvest 2020 is a roadmap for the Irish food industry, as it seeks to innovate and expand in response to increased global demand for quality foods. It sets out a vision for the potential growth in agricultural output after the removal of milk quotas 	<ul style="list-style-type: none"> 		To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
GRID 25 and associated Implementation Plan	<ul style="list-style-type: none"> The Grid25 strategy seeks to implement the provisions of the 2007 Government White Paper on Energy - "Delivering a Sustainable Energy Future for Ireland" in terms of development of electricity transmission infrastructure. 	<ul style="list-style-type: none"> Grid25 is a high-level strategy outlining how EirGrid intends to undertake the development of the electricity transmission grid in the short, medium and longer terms, to support a long-term sustainable and reliable electricity supply. The Grid25 Implementation Programme (IP) is a practical strategic overview of how the early stages of Grid25 are intended to be implemented. 	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Landscape Strategy 2015	<ul style="list-style-type: none"> Aims to implement the European Landscape Convention in Ireland by providing for specific measures to promote the protection, management and planning of the landscape. 	<p>The objectives of the National Landscape Strategy are to:</p> <ul style="list-style-type: none"> Recognise landscapes in law Develop a National Landscape Character Assessment; Develop Landscape Policies; Increase Landscape Awareness; Identity Education, Research and Training Needs; and Strengthen Public Participation. 	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Rural Development Programme 2014-2020	<ul style="list-style-type: none"> The National Rural Development Programme, prepared by the Department of Agriculture, Fisheries and Food, sets out a national programme based on the EU framework for rural development and prioritises improving the competitiveness of agriculture, improving the environment and improving the quality of life in rural areas 	<p>At a more detailed level, the programme also:</p> <ul style="list-style-type: none"> Supports structural change at farm level including training young farmers and encouraging early retirement, support for restructuring, development and innovation; Aims to improve the environment, biodiversity and the amenity value of the countryside by support for land management through funds such as Natura 2000 payments etc.; and Aims to improve quality of life in rural areas and encouraging diversification of economic activity through the implementation of local development strategies such as non-agricultural activities 	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management

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National Forestry Programme 2014-2020	<ul style="list-style-type: none"> Represents Ireland's proposals for 100% State aid funding for a new Forestry Programme for the period 2014 – 2020. 	<p>Measures include the following:</p> <ul style="list-style-type: none"> Afforestation and Creation of Woodland NeighbourWood Scheme Forest Roads Reconstitution Scheme Woodland Improvement Scheme Native Woodland Conservation Scheme Knowledge Transfer and Information Actions Producer Groups Innovative Forest Technology Forest Genetic Reproductive Material Forest Management Plans 	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Peatlands Strategy (draft/in preparation)	<ul style="list-style-type: none"> This Draft Strategy, prepared by the National Parks and Wildlife Service, will, when finalised, establish principles in relation to Irish peatlands in order to guide Government policy. The Draft Strategy aims to provide a framework for which all of the peatlands within the State can be managed responsibly in order to optimise their social, environmental and economic contribution. 	not applicable	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Biodiversity Action Plan	<ul style="list-style-type: none"> This Action Plan sets out an integrated strategy for collective delivery of the potential benefits of bioenergy resources across the agriculture, enterprise, transport, environment and energy sectors. 	Includes detailed actions for the electricity sector, transport fuel sector, heat sector, research and development sector.	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Flood Risk Management Plans arising from National Catchment Flood Risk Assessment and Management Programme (draft/in preparation)	<ul style="list-style-type: none"> The national Catchment Flood Risk Assessment and Management (CFRAM) programme commenced in Ireland in 2011 and is being overseen by the Office of Public Works. The CFRAM Programme is intended to deliver on core components of the National Flood Policy, adopted in 2004, and on the requirements of the EU Floods Directive. 	<p>CFRAM Studies are being undertaken for all River Basin Districts.</p> <p>The studies are focusing on areas known to have experienced flooding in the past and areas that may be subject to flooding in the future either due to development pressures or climate change. In 2015, draft flood risk maps were published. These were finalised in 2016 and CFRAM Plans are currently being finalised for the areas most at risk. These Plans will define the current and future flood risk in the River Basin Districts and set out how this risk can be managed.</p>	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Food Harvest 2020	<ul style="list-style-type: none"> Sets out a vision and recommendations for the agri-food industry based on factual information, figures and trends in order to allow for further productivity, prosperity and sustainability within this sector. 	<ul style="list-style-type: none"> Seeks for the improvement of all agricultural sectors at all levels in terms of sustainability, environmental consideration and marketing development. 	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management

Regional and Inter-County				
Plan / Programme / Guidelines	High Level Aim/ Purpose/ Objective	Lower level relevant objectives , actions etc.	Relevant legislation in Ireland	Relevance to the CDP
Regional Planning Guidelines for the South East Region 2010 -2022	<ul style="list-style-type: none"> The Guidelines provide a planning framework for the future physical, economic and social development of the South East Region which includes County Carlow 	<ul style="list-style-type: none"> Aim to give regional effect to the National Spatial Strategy Guide the Development Plans and lower tier plans of planning authorities 	Requirement of the Planning and Development Act (2000), as amended	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
The South East River Basin Management Plan and associated Programmes of Measures	<ul style="list-style-type: none"> Establish a framework for the protection of water bodies at River Basin District (RBD) level Preserve, prevent the deterioration of water status and where necessary improve and maintain “good status” of water bodies in that RBD Promote sustainable water usage 	<ul style="list-style-type: none"> Aim to protect and enhance all water bodies in the RBD and meet the environmental objectives outlined in Article 4 of the Water Framework Directive Identify and manages water bodies in the RBD Establish a programme of measures for monitoring and improving water quality in the RBD Involve the public through consultations 	Requirement of the Water Framework Directive (2000/60/EC) European Communities (Water Policy) Regulations, 2003 (SI No. 722) (as amended) Guidelines for the Establishment of River Basin District Advisory Councils (RBDAC)	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Water Quality Management Plans	<ul style="list-style-type: none"> Ensure that the quality of waters covered by the plan is maintained Maintain and improve the quantity and quality of water included in the Plan scope 	<ul style="list-style-type: none"> Monitoring of water bodies against quality standards Outlines management programmes for water catchments Purpose is to maintain and improve the quantity and quality of groundwater 	Water Pollution Acts 1977 to 1990	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Management Plans for Natura 2000 sites (note that no Management Plans which have been prepared for Natura 2000 sites relevant to the Plan)	Article 6(1) of the Habitats Directive requires that Member States establish the necessary conservation measures for Special Area of Conservation involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans.	Integrated Management Plans can be practical, achievable and sustainable and have regard to all relevant ecological, cultural, social and economic considerations and with special regard to local communities.	Habitats Directive	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management

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<p>Outputs from the South Eastern Catchment Flood Risk Assessment and Management Programme</p>	<ul style="list-style-type: none"> The national Catchment Flood Risk Assessment and Management (CFRAM) programme commenced in Ireland in 2011 and is being overseen by the Office of Public Works. The CFRAM Programme is intended to deliver on core components of the National Flood Policy, adopted in 2004, and on the requirements of the EU Floods Directive. The Programme is being implemented through CFRAM Studies which are being undertaken for each of the six river basin districts in Ireland. 	<p>CFRAM Studies are being undertaken for all River Basin Districts. The studies are focusing on areas known to have experienced flooding in the past and areas that may be subject to flooding in the future either due to development pressures or climate change. In 2015, draft flood risk maps were published. These were finalised in 2016 and CFRAM Plans are currently being finalised for the areas most at risk. These Plans will define the current and future flood risk in the River Basin Districts and set out how this risk can be managed.</p>	<p>not applicable</p>	<p>To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management</p>
<p>Southern Region Waste Management Plan 2015-2021</p>	<p>The regional plan provides the framework for waste management for a period of six years and sets out a range of policies and actions in order to meet specified mandatory and performance targets. The strategic vision of the regional waste plan is to rethink our approach to managing waste, by viewing our waste streams as valuable material resources, leading to a healthier environment and sustainable commercial opportunities for our economy.</p>	<p>Strategic objectives:</p> <ul style="list-style-type: none"> Policy & Legislation Prevention Resource Efficiency Coordination Infrastructure Planning Enforcement & Regulations Protection Other Wastes 	<p>European Directive (2008/98/EC) on Waste (Waste Framework Directive); Council Decision (200/532/EC) establishing a list of wastes; and Regulation (1013/2006) on the shipments of waste</p>	<p>To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management</p>
<p>Freshwater Pearl Mussel Basin Management Plans</p>	<ul style="list-style-type: none"> Identifies the current status of the species and the reason for loss or decline Identifies measure required to improve or restore current status 	<ul style="list-style-type: none"> Identifies pressures on Freshwater Pearl Mussels for each of the designated populations in Ireland Outlines restoration measures required to ensure favourable conservation status 	<p>Requirement of Water Framework Directive (2000/60/EC) and Habitats Directive (92/43/EEC) European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003) European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011) The Wildlife Act 1976 and the Wildlife (Amendment) Act 2000</p>	<p>To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management</p>

County and Local				
Plan / Programme / Guidelines	High Level Aim/ Purpose/ Objective	Lower level relevant objectives , actions etc.	Relevant legislation in Ireland	Relevance to the CDP
County Development Plans, Local Area Plans and associated documents in the following authorities: Carlow, Kilkenny, Wexford, Wicklow, Kildare and Laois.	<ul style="list-style-type: none"> Statutory documents which provide detailed planning policies to ensure proper planning and sustainable development of area Set out objectives for future planning and development County Development Plans provide the key parameters for lower tier plans such as the future population and housing targets and sets out the broad strategy for the future economic and social development of these towns. 	<ul style="list-style-type: none"> Identify issues of relevance to the area and outlines principles for future development of area Is consistent with relevant County/Town Development Plans, National Spatial Strategy and Regional Planning Guidelines 	Planning and Development Act 2000 (as amended)	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
County Carlow 2021 Local Economic & Community Plan 2016-2021	The LECP is to set out, for a six year period, the objectives and actions needed to promote and support the economic development and the local and community development of the local authority area, both by itself directly and in partnership with other economic and community development stakeholders.	The LECP and County Development Plan are closely linked. The LECP must be consistent with the Core Strategy of the development plan and the development plan will need to underpin the aims of the LECP where there are 'land use' or 'development' related objectives contained in the LECP. The development plan gives effect to the objectives of the LECP.	Local Government Reform Act 2014	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management

SEA STATEMENT

FOR THE

MUINE BHEAG/ ROYAL OAK LOCAL AREA PLAN 2017-2023

STRATEGIC ENVIRONMENTAL ASSESSMENT

for: Carlow County Council

Athy Road
Carlow
County Carlow



by: CAAS Ltd.

2nd Floor, The Courtyard
25 Great Strand Street
Dublin 1



JANUARY 2017

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Section 1 Introduction

1.1 Terms of Reference

This is the SEA Statement for Draft Tullow Local Area Plan 2016-2022 Strategic Environmental Assessment (SEA).

1.2 SEA Definition

SEA is a systematic process of predicting and evaluating the likely environmental effects of implementing a plan, or other strategic action, in order to ensure that these effects are appropriately addressed at the earliest appropriate stage of decision-making on a par with economic and social considerations.

1.3 Legislative Context

Directive 2001/42/EC of the European Parliament and of the Council, of 27 June 2001, on the assessment of the effects of certain plans and programmes on the environment, referred to hereafter as the SEA Directive, introduced the requirement that SEA be carried out on plans and programmes which are prepared for a number of sectors, including land use planning.

The SEA Directive was transposed into Irish Law through the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (Statutory Instrument Number (SI No. 435 of 2004) and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No. 436 of 2004). Both sets of Regulations became operational on 21 July 2004. The Regulations have been amended by the European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011 (SI No. 200 of 2011) and the Planning and Development (SEA) (Amendment) Regulations 2011 (SI No. 201 of 2011).

Article 7 of the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No. 436 of 2004) as amended requires that Strategic Environmental Assessment is undertaken for the preparation of certain Development Plans.

Where SEA is undertaken, the Regulations require that a Statement available to the public and the competent environmental authorities after the making of a Development Plan. This Statement is referred to as an SEA Statement¹.

1.4 Content of the SEA Statement

The SEA Statement is required to include information summarising:

- a) how environmental considerations have been integrated into the Plan;
- b) how the following have been taken into account during the preparation of the Plan:
 - the environmental report,
 - submissions and observations made to the planning authority on the Draft Plan and Environmental Report, and
 - any transboundary consultations [this is not relevant to this SEA]
- c) the reasons for choosing the Plan in the light of the other reasonable alternatives dealt with; and
- d) the measures decided upon to monitor the significant environmental effects of implementation of the Plan.

¹ Department of Environment, Heritage and Local Government (2004) Implementation of SEA Directive (2001/42/EC): Guidelines for Regional Authorities and Planning Authorities, Dublin: Government of Ireland.

1.5 Implications for the Local Area Plan and the Planning Authority

Having considered the review and preparation of the Tullow Local Area Plan under Article 8 (14A) of the Planning and Development (SEA) Regulations (as amended), Carlow County Council, based on available information on both the expected content of the Plan and the existing environment, determined that the Plan would be likely, if unmitigated to have significant effects on the environment²

Furthermore, a Stage 2 Appropriate Assessment (AA) under the Habitats Directive has been undertaken on the LAP. The SEA Directive requires that SEA is undertaken where Stage 2 AA is being undertaken on plans, programmes or variations to these.

It therefore was determined that SEA was required to be undertaken on the Plan.

The findings of the SEA are expressed in the Environmental Report. This report has been altered to take account of both: recommendations contained in submissions; and changes that may be made to the Plan on foot of submissions. Elected members of Carlow County Council have taken into account the findings of this report and other related SEA output during their consideration of the Plan and before its adoption.

² It was identified as mitigation needed to be integrated into the LAP in order to ensure the protection of the Slaney River Valley Candidate Special Area of Conservation (Site Code 000781). This cSAC is designated for a number of species, including freshwater pearl mussel, which are highly protected and sensitive. A submission was made by the Department of Arts, Heritage and the Gaeltacht as part of the Plan preparation process that highlights the need to consider the protection of ecological sensitivities - including cSACs and protected species. Other issues for the Plan include those relating to wastewater treatment capacity and performance, water quality and flood risk.

Section 2 How Environmental Considerations were integrated into the Plan

2.1 Introduction

Environmental considerations were integrated into the Plan through:

- Consultations with environmental authorities;
- Communication of environmental sensitivities through the SEA and associated Appropriate Assessment (AA) and Strategic Flood Risk Assessment (SFRA) processes; and
- Suggestions of Plan provisions to mitigate effects.
- Strategic work undertaken by the Council to ensure contribution towards environmental protection and sustainable development.

2.2 Consultations

As environmental authorities identified under the Planning and Development (SEA) Regulations, as amended, the following authorities were sent SEA scoping notices indicating that submissions or observations in relation to the scope and level of detail of the information to be included in the environmental report could be made to the Council: Environmental Protection Agency, Department of Communications, Energy and Natural Resources, Department of the Environment, Community and Local Government, Department of Arts, Heritage and the Gaeltacht, Department of Agriculture, Fisheries and Food and adjoining planning authorities whose areas are contiguous to the administrative area of Carlow County Council.

Further detail on submissions made on foot of the SEA scoping notice is provided under Section 3.2.

Furthermore, submissions were made on the Plan and SEA Environmental Report while they were on public display and these resulted in updates being made to the SEA documents (see Section 3.3).

2.3 Communication of environmental sensitivities

2.3.1 Overview

Environmental considerations were integrated into the Plan before it was placed on public display. Environmental sensitivities were mapped in order to identify which areas of the County would be most sensitive to development and would suffer the most adverse effects if growth was to be accommodated in those areas unmitigated.

The sensitivities were communicated to the Plan-making team on a regular basis from the outset of the Plan preparation process. Identifying areas with the most limited carrying capacity within the Plan area helped future growth to be diverted away from these areas.

Sensitivities included the following:

- CORINE Land Cover Data;
- Special Protected Areas, Special Areas of Conservation, Natural Heritage Areas, proposed Natural Heritage Areas and River Basin Districts;
- Soil Type;
- Water Framework Directive (WFD) Status of Surface Waters;
- River Water Quality post 2004;
- River Water Quality pre-2004;
- WFD Status of Groundwater;
- Aquifer Vulnerability;
- Archaeological Heritage - Entries to the Record of Monuments and Places;
- Architectural Heritage - Entries to the Record of Protected Structures and Architectural Conservation Areas;
- Landscape Sensitivity; and
- View Points and Prospects

A number of these sensitivities are mapped on Figure 2.1, Figure 2.2 and Figure 2.3.

In order to identify where most sensitivities within the County occur, a number of the

environmental sensitivities listed above were weighted and mapped overlapping each other provides an overlay of environmental sensitivities for the County.

It is emphasised that the occurrence of environmental sensitivities does not preclude development; rather it flags at a strategic level that the mitigation measures - which have been integrated into the Plan - will need to be complied with in order to ensure that the implementation of the Plan contributes towards environmental protection.

The overlay mapping shows that the most sensitive areas Muine Bheag / Royal Oak are located along the watercourses through the Plan area (on account of the sensitivity of the River Barrow, fluvial flood risk and Natura 2000 site designations). Sensitivity ratings vary along the watercourse from medium to extreme. Other sensitive areas are also identified within the town (these largely relate to cultural heritage designations), however, these are of a comparatively lower rating in comparison to the sensitivities along the river.

Appropriate Assessment

A Stage 2 Appropriate Assessment (AA) has been undertaken alongside the preparation of the Plan. The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC). The AA concluded that the Plan will not have a significant adverse effect on European Sites, and that the integrity of the European Sites, in view of their conservation interests, will not be adversely affected.

The preparation of the Plan, SEA and AA has taken place concurrently and the findings of the AA have informed both the Plan and the SEA. All recommendations made by the AA were integrated into the Plan.

2.3.2 Strategic Flood Risk Assessment

A Strategic Flood Risk Assessment (SFRA) has been undertaken alongside the preparation of the Plan.

The requirement for SFRA is provided under 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (DEHLG, 2009).

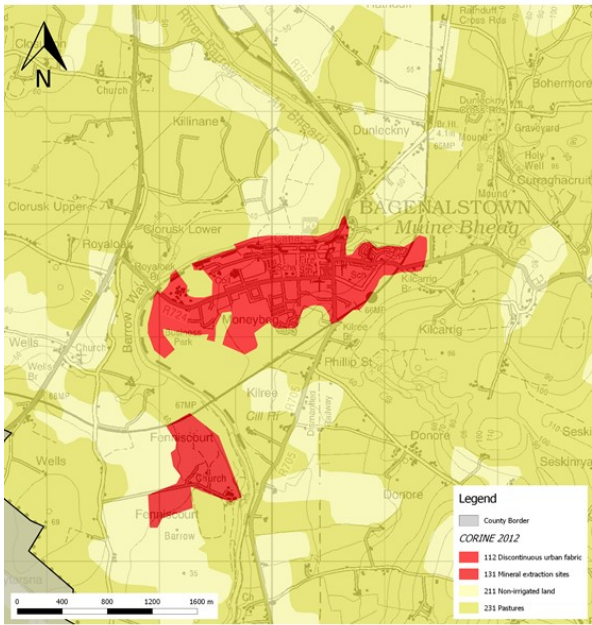
The SFRA has facilitated the integration of flood risk management considerations into the Plan.

2.4 Suggestions of Plan provisions to mitigate effects

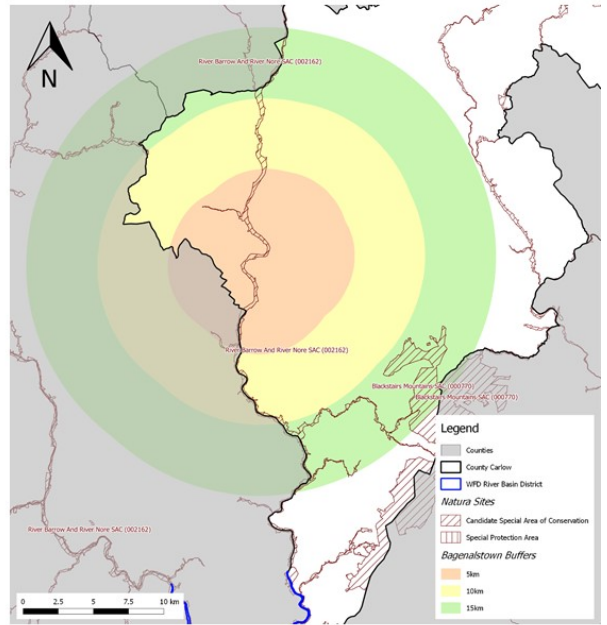
The SEA, AA and SFRA processes suggested various measures for integration into the Plan as provisions (policies and objectives) or parts of provisions in order to mitigate the effects of implementing the Plan and to contribute towards environmental protection and sustainable development.

Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the Plan.

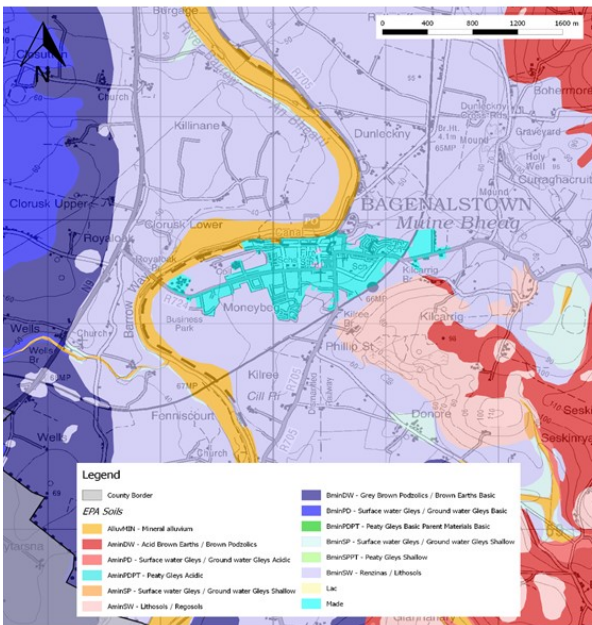
Table 2.1 details key mitigation measure(s) which have been integrated into the Plan under various environmental headings. The integration of these measures into the Plan occurred over a number of iterations and was informed by various communications through the SEA, AA and SFRA processes.



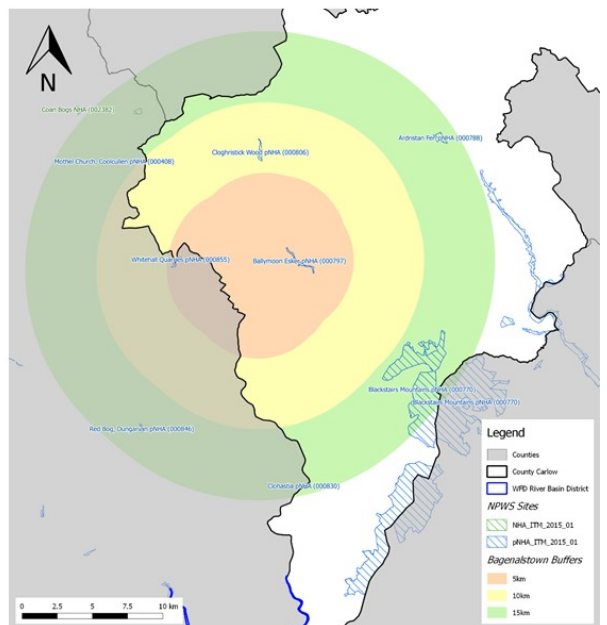
CORINE Land Cover Map



cSACs and SPAs in vicinity of Plan area

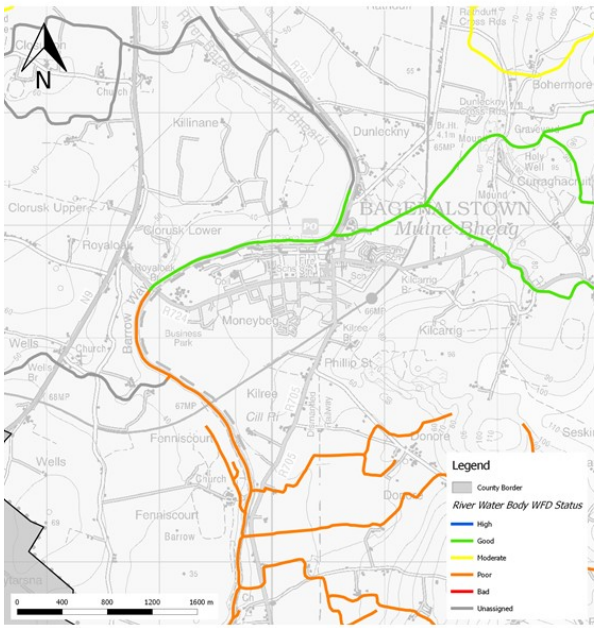


Soil

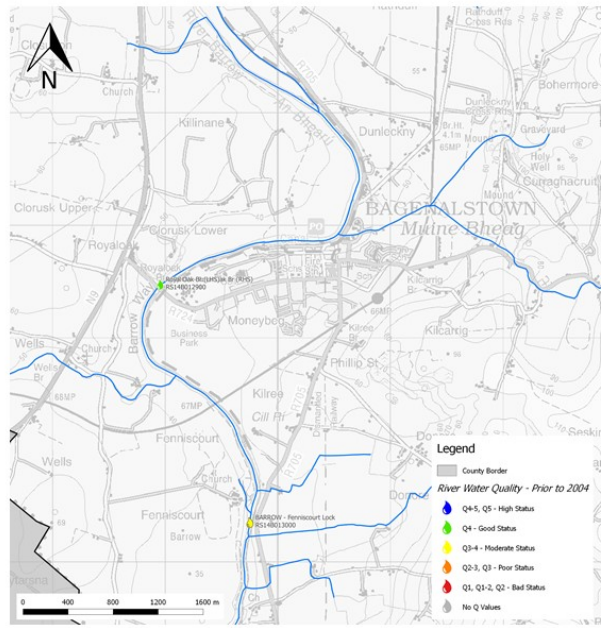


NHAs and pNHAs in the vicinity of the Plan area

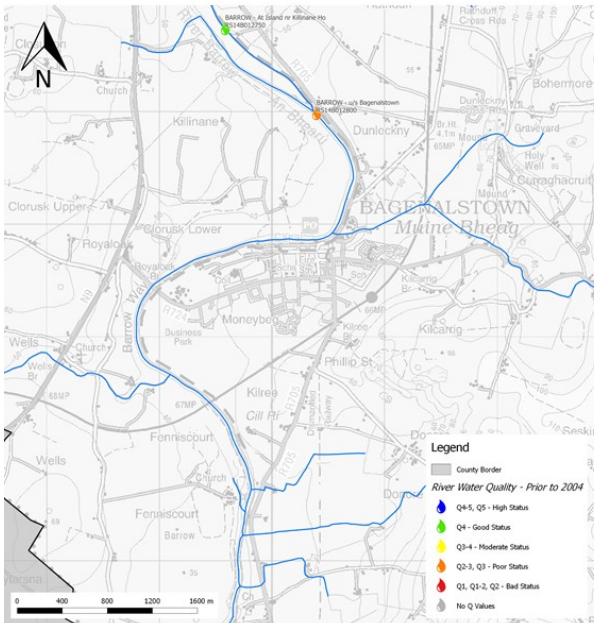
Figure 2.1 Selection of Environmental Sensitivities (1 of 3)



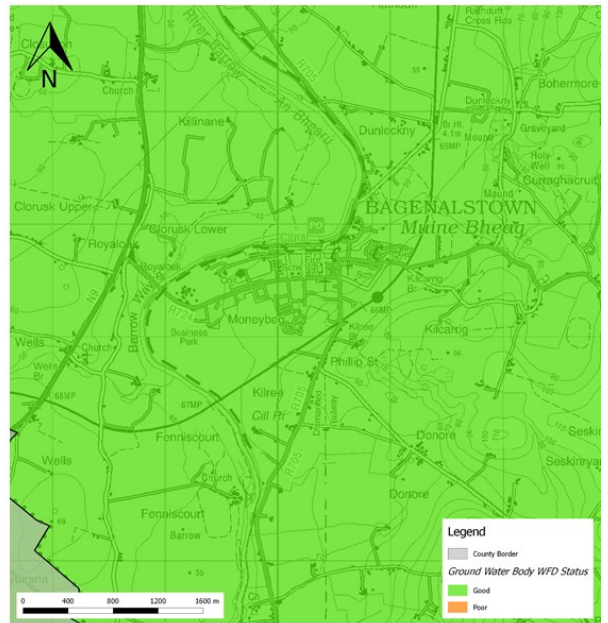
WFD Surface Water Status



Water Quality: Q-Values at Points on Rivers post 2004

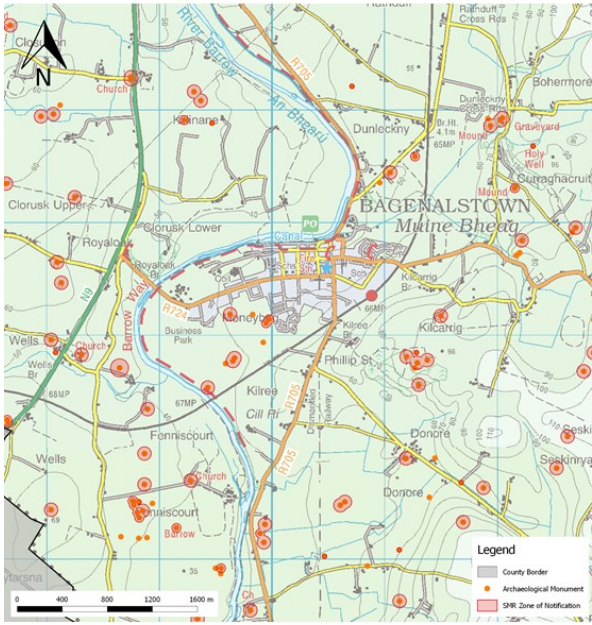


Water Quality: Q-Values on Points on Rivers pre-2004

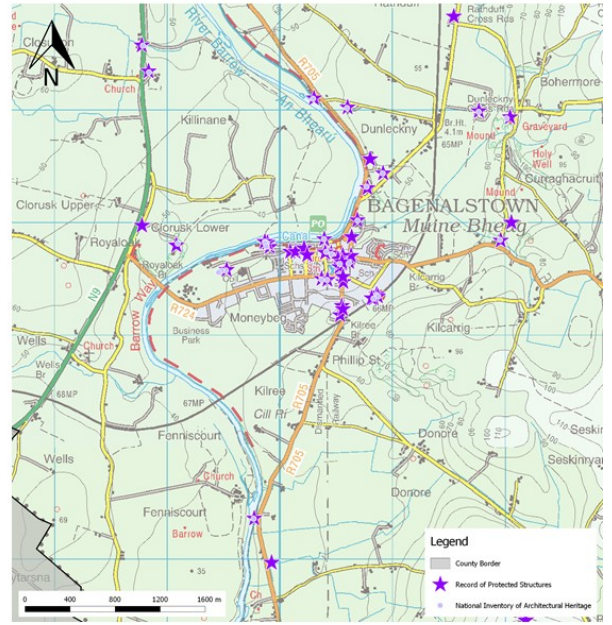


WFD Status of Groundwater

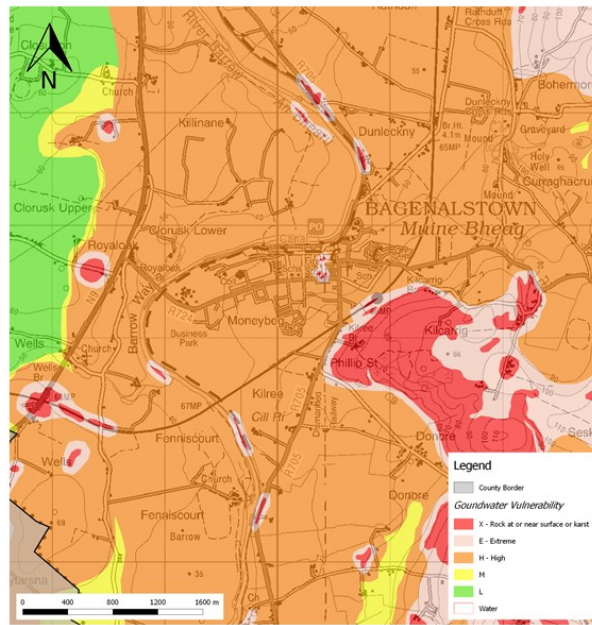
Figure 2.2 Selection of Environmental Sensitivities (2 of 3)



Archaeological Heritage



Architectural Heritage



Aquifer Vulnerability

Figure 2.3 Selection of Environmental Sensitivities (3 of 3)

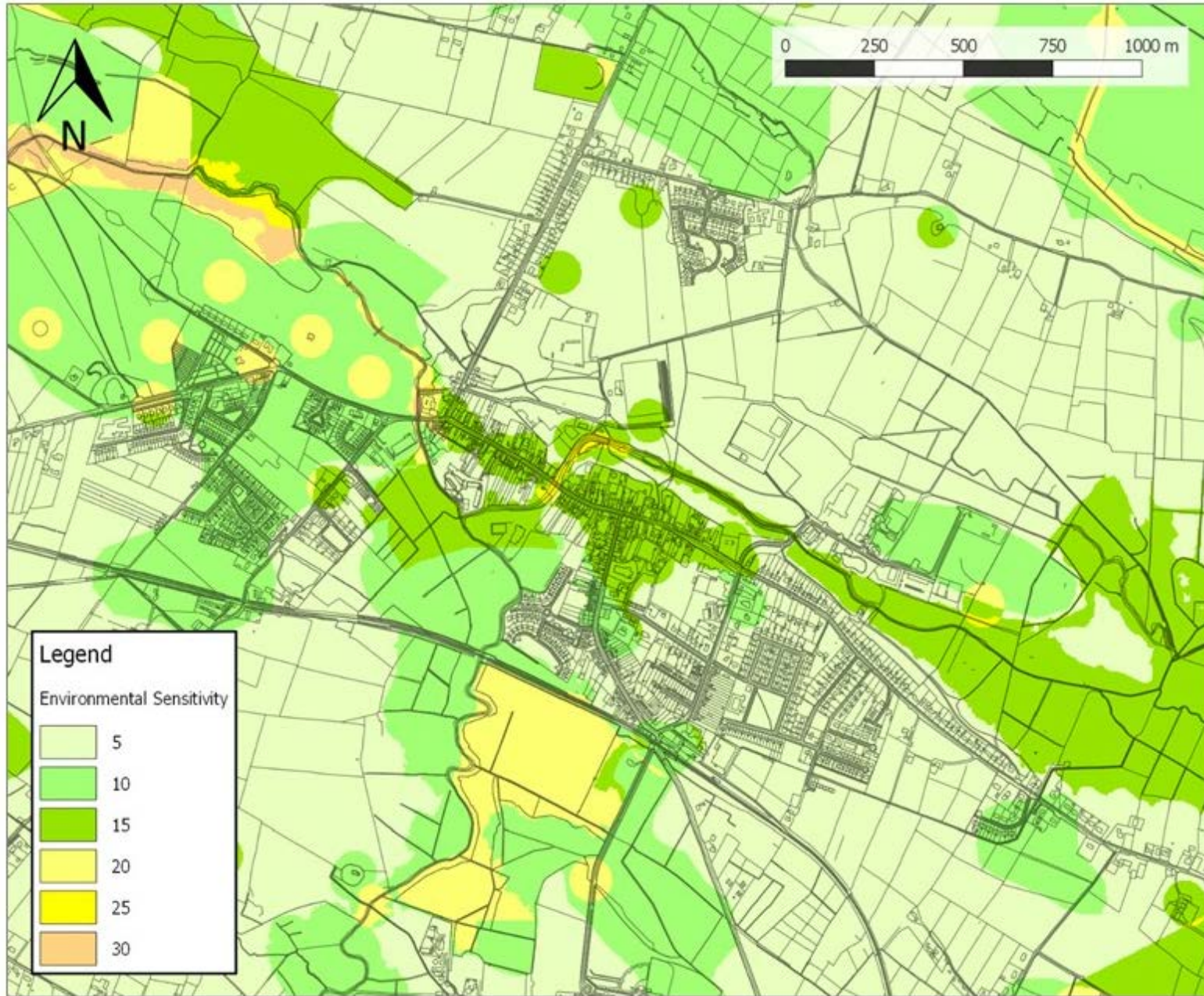


Figure 2.4 Overlay of Environmental Sensitivities Source: CAAS (2016)

Table 2.1 Mitigation Measures

Environmental Component	Potential Effect, if unmitigated	Mitigation Measures, including
Biodiversity and Flora and Fauna	<ul style="list-style-type: none"> Loss of biodiversity with regard to designated biodiversity and flora and fauna, ecological connectivity and stepping stones and non-designated biodiversity and flora and fauna 	<ul style="list-style-type: none"> Policies- HR 12B and HR 10, HR11, HR12, HR17, HP 21, HR23, HR14, FLO4, HR12B, TP7, LU8, SM4 and RC 2 Objectives- SMO3
Population and Human Health	<ul style="list-style-type: none"> Spatially concentrated deterioration in human health 	<ul style="list-style-type: none"> Objective PO1 and PO2.
Soil	<ul style="list-style-type: none"> Adverse impacts on the hydrological and ecological function of the soil resource 	<ul style="list-style-type: none"> Policy P5
Water	<ul style="list-style-type: none"> Adverse impacts upon the status and quality of water bodies 	<ul style="list-style-type: none"> Policy WSP1, WSP2
Material Assets	<ul style="list-style-type: none"> The need to provide adequate and appropriate water services, it is the function water to provide such needs 	<ul style="list-style-type: none"> Policies WSP3, WW1, WSP6, WW2 and Objectives WSO1, WWO1, WSO1, WSO4, WSO5.
Air and Climatic Factors	<ul style="list-style-type: none"> Failure to contribute towards sustainable transport and associated impacts (energy usage and emissions to air including noise and greenhouse gases) Increase in waste levels 	<ul style="list-style-type: none"> Overall development approach for the Plan, consolidating the town and providing for growth within and adjacent to the town centre. Also, Policy P1, Policy CCP1 and Objective CCO1 Policy WMP1, WMP2, WMP5.
Cultural Heritage	<ul style="list-style-type: none"> Potential effects on protected and unknown archaeology and protected architecture 	<ul style="list-style-type: none"> Policy HR1, HR2, HR3 and HR5.
Landscape	<ul style="list-style-type: none"> Occurrence of adverse visual impacts 	<ul style="list-style-type: none"> Policy L1

Section 3 Environmental Report and Submissions & Observations

3.1 Introduction

This section details how both the Environmental Report and submissions and observations made to the planning authority on the Environmental Report and SEA process have been taken into account during the preparation of the Plan.

3.2 SEA Scoping Submissions

3.2.1 Introduction

As environmental authorities identified under the Planning and Development (SEA) Regulations, as amended, the following authorities were sent SEA scoping notices indicating that submissions or observations in relation to the scope and level of detail of the information to be included in the environmental report could be made to the Council: Environmental Protection Agency, Department of Communications, Energy and Natural Resources, Department of Agriculture, Fisheries and Food, Department of the Environment, Community and Local Government, Department of Arts, Heritage and the Gaeltacht, Department of Agriculture, Fisheries and Food and adjoining planning authorities whose areas are contiguous to the administrative area of Carlow County Council.

Submissions were made by Environmental Protection Agency and the Department of Arts, Heritage and the Gaeltacht. These submissions influenced the scope of the assessments and were taken into account during the undertaking of the SEA, SFRA and AA.

Specific comments were provided in the submissions on:

- The need to be consistent with key relevant higher-level plans/programmes in the planning hierarchy and be set in the context of national SEA Regulations, Planning and Development Regulations and associated government Guidelines.
- Ensuring natural resources and environmental Conditions are

fundamental to the economic and social wellbeing of future generations and are protected and not degraded or exhausted.

- The provision of a safe and secure drinking water supply;
- The provision of adequate and appropriate waste water treatment;
- The protection of surface and ground water resources;
- The protection of Biodiversity at a wider aspect;
- Promoting the implementation of Noise Directive and associated national regulations;
- Promoting the integration of land use zoning and development to existing and planned availability of water infrastructure and capacity;
- Taking into account areas of high Radon concentrations;
- The protection of designated landscapes;
- The protection of designated Geological and Geomorphological NHAs/pNHAs;
- Promoting the development of Integrated Traffic Management Plans.
- Promoting the provision of adequate and appropriate critical service infrastructure, surface and storm water drainage, public transport, waste management, community services and amenities on a planned and phased basis.
- AA and the protection of ecology.
- The protection of the historic core of towns and villages.

All the above submissions influenced the scope of the SEA.

3.3 Submissions on the Environmental Report

Furthermore, submissions were made on the Draft Plan and SEA Environmental Report while they were on public display and these resulted in updates being made to the SEA documents.

These submissions included those made by the Environmental Protection Agency and the Geological Survey of Ireland. Updates made to the SEA Environmental Report (ER) on foot of these submissions included the following:

To include additional information in both the SEA Environmental Report main document and the SEA Environmental Report Non-Technical Summary on the findings of the Strategic Flood Risk Assessment.

3.4 Environmental Report

The Draft Plan and accompanying documents (including SEA Environmental Report and AA Natura Impact Report) were placed on public display, having integrated all recommendations arising from the SEA and AA processes.

Responses to submissions made on the Environmental Report during the period of public display were integrated into a Chief Executive's Report and considered by Carlow County Council.

Carlow County Council have taken into account the findings of all relevant SEA output during their consideration of the Local Area Plan and before the Plan was adopted.

On adoption of the Plan, the original Environmental Report which had been placed on public display alongside the Draft Local Area Plan was updated to become a final Environmental Report which is consistent with the adopted Plan, taking into account recommendations included in the submissions as well as changes that were made to the original Draft Plan that was placed on public display.

Section 4 Alternatives and the Plan

4.1 Introduction

The SEA Directive requires that reasonable alternatives (taking into account the objectives and the geographical scope of the plan or programme) are identified, described and evaluated for their likely significant effects on the environment.

The description of the environmental baseline (both maps and text) and Strategic Environmental Objectives (SEOs) are used in the evaluation of alternative development strategies.

4.2 Description of Alternatives

Carlow County Council in preparing the Local Area Plan 2017-2023 developed three Development Strategy Options for Muine Bheag/ Royal Oak. These are detailed on Table 4.1 below and mapped on Figure 4.1, Figure 4.2 and Figure 4.3.

Table 4.1 Description of Alternative Development Strategies

	Alternative Development Strategy 1	Alternative Development Strategy 2	Alternative Development Strategy 3
Summary	Development Scenario 1: A general continuation in accordance with the development objectives of the current 2010 – 2016 Plan.	Development Scenario 2: To provide high density residential, retail and employment development on vacant and key opportunity sites in the town only.	Development Scenario 3: To consolidate and strengthen the town centre and provide for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner.

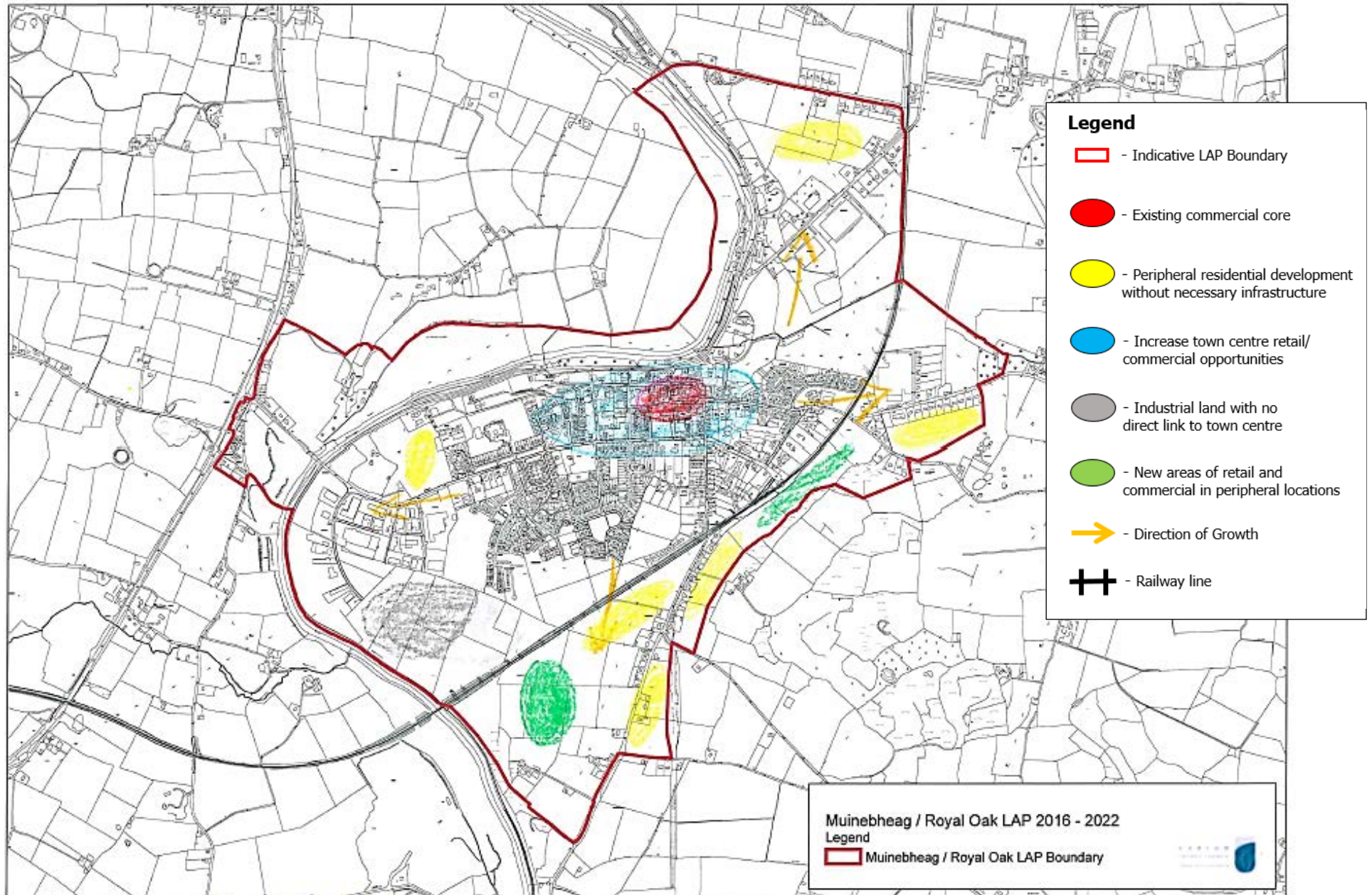


Figure 4.1 Alternative Development Strategy 1

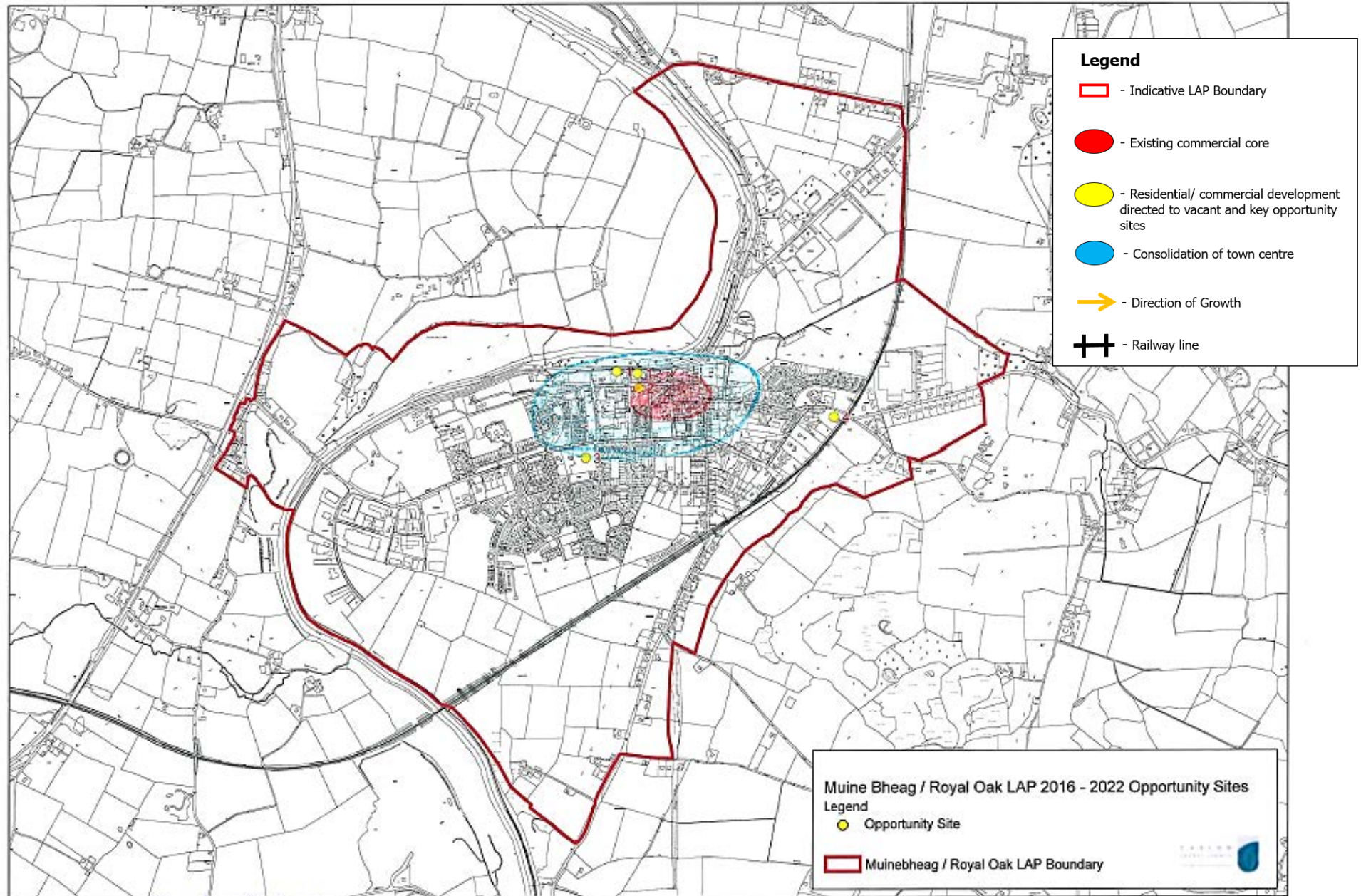


Figure 4.2 Alternative Development Strategy 2

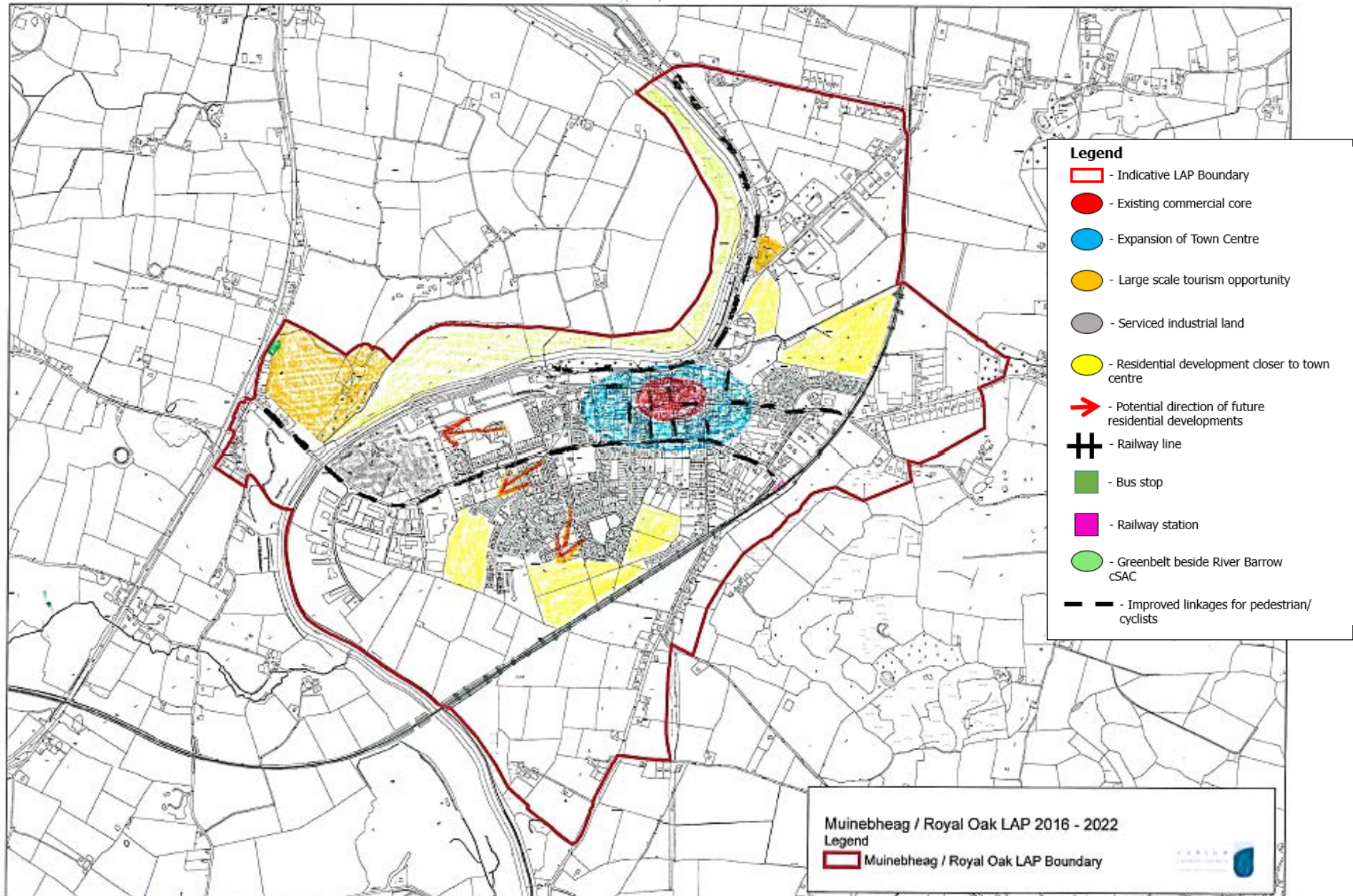


Figure 4.3 Alternative Development Strategy 3

4.3 Evaluation of Alternatives

A number of potentially significant adverse environmental effects that are common to all alternatives and are described on the Table below.

Environmental Component	Likely Significant Effect, if unmitigated
Biodiversity and Flora and Fauna	<ul style="list-style-type: none"> o Loss of biodiversity with regard to designated biodiversity and flora and fauna (including Natura 2000 Sites, proposed Natural Heritage Areas and Annexed habitats and species), ecological connectivity and stepping stones and non-designated biodiversity and flora and fauna (see baseline Section 4.2)
Population and Human Health	<ul style="list-style-type: none"> o Spatially concentrated deterioration in human health
Soil (especially soil on greenfield lands)	<ul style="list-style-type: none"> o Adverse impacts on the hydrogeological and ecological function of the soil resource
Water (including the River Barrow and its tributaries and underlying groundwater)	<ul style="list-style-type: none"> o Adverse impacts upon the status of water bodies arising from changes in quality, flow and/or morphology o Increase in flood risk
Material Assets (it is the function of Irish Water to provide for water services needs)	<ul style="list-style-type: none"> o Failure to provide adequate and appropriate waste water treatment o Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean o Increases in waste levels
Air and Climatic Factors	<ul style="list-style-type: none"> o Failure to contribute towards sustainable transport and associated impacts (energy usage and emissions to air including noise and greenhouse gases)
Cultural Heritage	<ul style="list-style-type: none"> o Effects on entries to the Record of Monuments and Places and other archaeological heritage o Effects on entries to the Records of Protected Structures and other architectural heritage
Landscape	<ul style="list-style-type: none"> o Occurrence of adverse visual impacts

Table 4.2 Potentially Significant Adverse Environmental Effects common to all alternatives

Alternative Development Strategy 1 would contribute towards efforts to improve sustainable mobility (and associated effects on energy, air, noise and human health) by improving existing pedestrian access, however: such a contribution would be outweighed by the overall direction of the Strategy which prefers an expansion of peripheral areas for residential, mixed use, industrial and commercial uses, some of which have no direct link to the town centre.

The extent of development provided for would have to be served by infrastructure and could affect flood risk.

By providing significant expansion of suburbs of the town and peripheral areas, this alternative would be likely to result in the greatest number and extent of residual adverse effects across the widest area. Such effects include loss of ecology (including non-designated ecology and ecological corridors and stepping-stones), the sealing of greenfield soils and threats to the status of waters. This Scenario would provide for various uses on greenfield lands in the peripheries of the plan area, adversely impacting upon the consolidation of the town and sustainable mobility. The visual appearance of peripheral greenfield areas within the LAP area would be most likely to change under this scenario.

By encouraging new retail/commercial development on vacant and brownfield sites, this alternative would somewhat contribute towards the protection and management of the environment elsewhere.

Alternative Development Strategy 2 directs new development to vacant and infill opportunities only. By consolidating the existing town centre and improving pedestrian links, this alternative would

contribute towards efforts to both improve sustainable mobility (and associated effects on energy, air, noise and human health), protect cultural heritage and improve the residential fabric within the town centre.

However, by restricting new development to high density to vacant and a number of key opportunity sites, this alternative would be likely to result in an increase of applications for development outside the LAP area thereby weakening the town centre. It would be a challenge to serve peripheral areas with the necessary infrastructure.

The increase in applications for development within the periphery to the LAP area would provide for the greatest number and extent of residual adverse effects beyond the LAP area as a result of greenfield development. Such effects include loss of ecology (including non-designated ecology and ecological corridors and stepping-stones), the sealing of greenfield soils and threats to the status of waters and changes to the visual appearance of lands

By encouraging an extent of development within the town centre, this alternative would somewhat contribute towards the protection and management of the environment elsewhere, however the higher densities of development would have the potential to adversely impact upon the character of the town including cultural heritage and its context.

Alternative Development Strategy 3 consolidates and strengthens the town centre and provides for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner.

Consolidation of the town centre, phasing of residential development, improvement of pedestrian links and public spaces are all provided for.

By providing for development in this manner, this alternative would maximise sustainable mobility (and associated effects on energy, air, noise and human health) and protect cultural heritage within the town centre. Overall, new development would be best served by existing and planned infrastructure under this scenario. By limiting development within the Plan area and on the periphery of the development envelope, this alternative would benefit the protection of various environmental components (e.g. ecology, water, visual sensitivities etc.) beyond the LAP area that could otherwise be threatened.

Potential conflicts with all environmental components (detailed under Table 4.2) would still have to be mitigated to ensure that significant adverse residual environmental effects do not occur.

This scenario provides for a greenbelt along the River Barrow that would contribute towards the protection of the status of the river including associated biodiversity.

Development of the strategic employment lands at Royal Oak in the west of the town would have the potential to adversely impact upon architectural and natural heritage.

Table 4.3 below provides a comparative evaluation of the environmental effects of alternative development strategies against Strategic Environmental Objectives. This is supported by the narrative above and by effects that are common to all alternatives detailed on Table 4.2.

Table 4.3 Comparative Evaluation of Alternative Development Strategies

Alternative Development Strategy	<u>Likely to Improve</u> status of SEOs <u>to a greater degree</u>	<u>Likely to Improve</u> status of SEOs <u>to a lesser degree</u>	<u>Least Potential Conflict</u> with status of SEOs - <u>likely to be mitigated to greater degree.</u> significant adverse effects less likely	<u>More Potential Conflict</u> with status of SEOs - <u>likely to be mitigated to an intermediate degree.</u> significant adverse effects more likely	Probable <u>Conflict</u> with status of SEOs- unlikely to be mitigated	<u>No significant interaction</u> with status of SEOs
Alternative Development Strategy 1		✓		✓		
Alternative Development Strategy 2		✓		✓		
Alternative Development Strategy 3	✓		✓			

4.4 Reasons for choosing the Draft Plan in light of the other alternatives dealt with

The Alternative Development Strategy that was selected and developed for the Plan was Strategy 3 - to consolidate and strengthen the town centre and provide for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner. The Plan includes Phase 1 Residential and Enterprise and Employment development adjacent and to the east of the train line. Potential adverse effects will be mitigated by various provisions that have been integrated into the Draft Plan (see Section 9).

The Plan has been developed by the Planning Team and adopted by the Council having regard to both:

1. The environmental effects which were identified by the SEA and are detailed above; and
2. Planning - including social and economic - effects that also were considered by the Council.

By complying with appropriate mitigation measures - including those that have been integrated into the Plan - potential adverse environmental effects that could arise as a result of implementing this scenario would be likely to be avoided, reduced or offset.

The Land Use Zoning map from the Plan that evolved from and which is consistent with Alternative Development Strategy 3 is shown on Figure 4.4 overleaf.

Also shown on this map is the constrained land use zoning objective (Policy HR 12B) for the River Barrow and River Nore cSAC. This Policy has been integrated into the Plan as there are a number of overlaps between the area which is designated as cSAC and existing uses. Policy HR 12B requires applications for development within the constrained land use zoning objective for the Natura 2000 site (Map 13 – as shown on Figure 4.4 overleaf) to undergo Appropriate Assessment and demonstrate that the proposal will not give rise to any effect on the Natura 2000 site in view of its qualification features and conservation objectives.

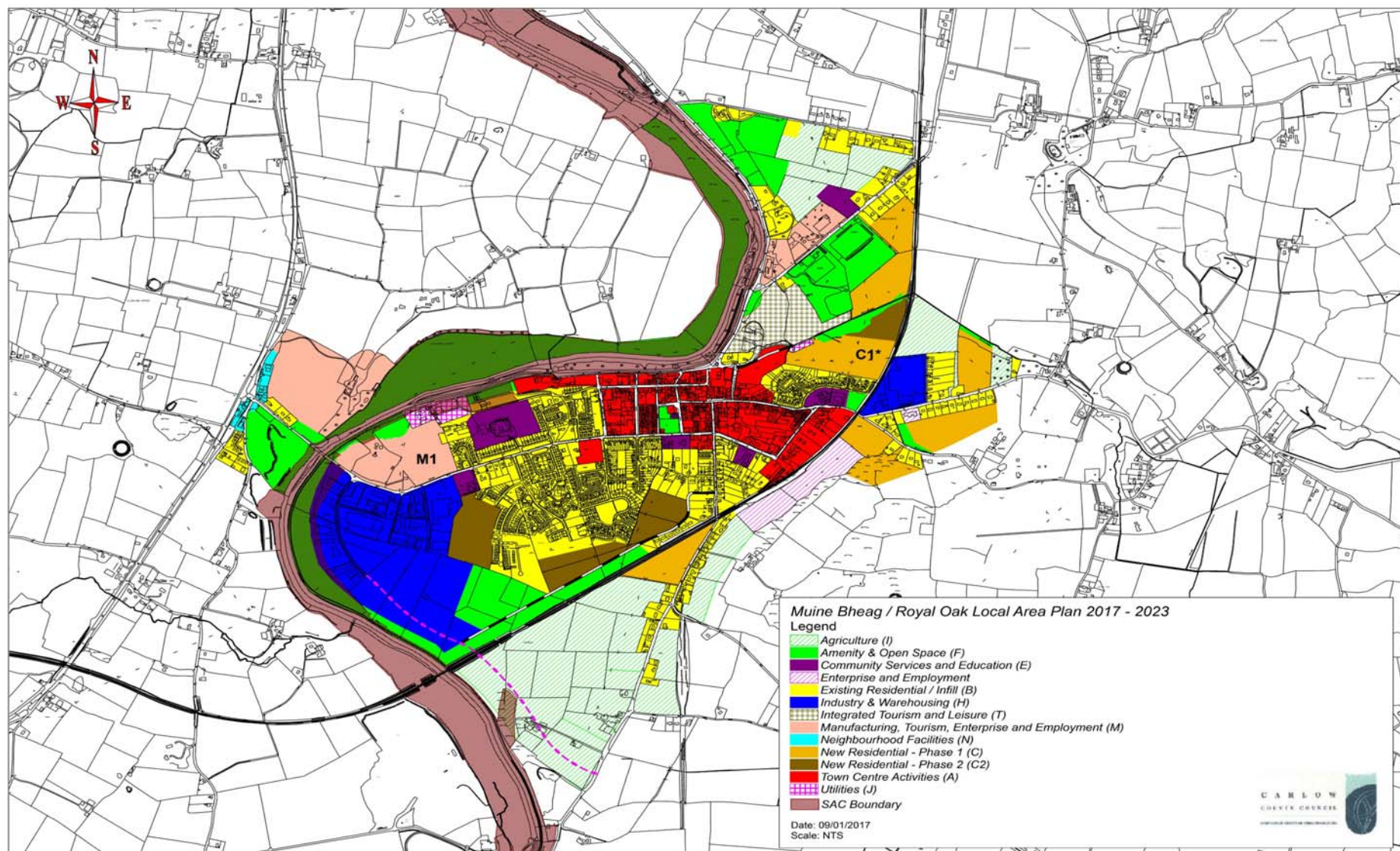


Figure 4.4 The Plan Land Use Zoning Map

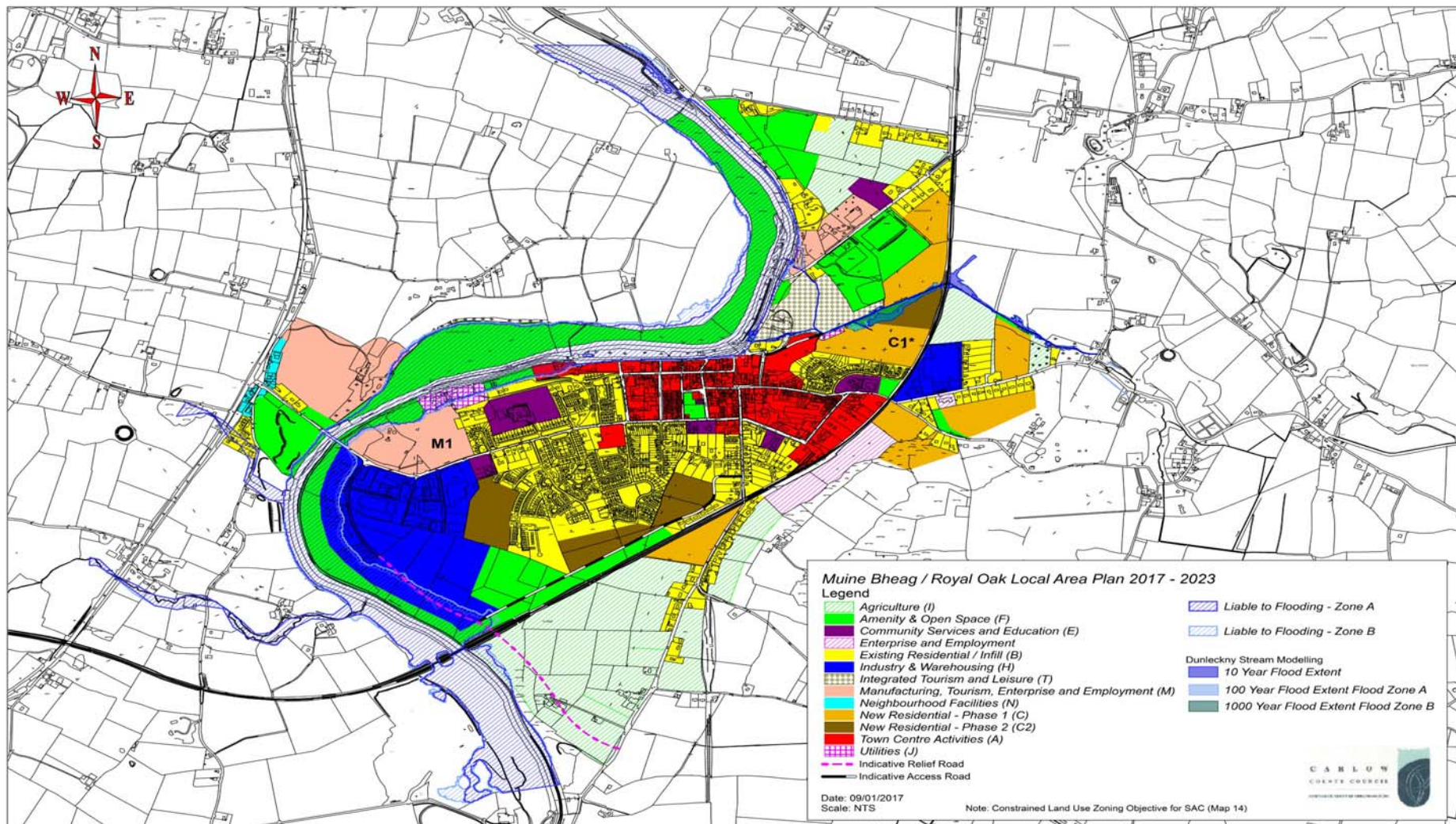


Figure 4.5 Local Area Plan Land Use Zoning Map (with flooding information)

Section 5 Monitoring Measures

5.1 Introduction

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored. This section details the measures that will be used in order to monitor the likely significant effects of implementing the Plan.

Monitoring can enable, at an early stage, the identification of unforeseen adverse effects and the undertaking of appropriate remedial action.

5.2 Indicators and Targets

Monitoring is based around indicators that allow quantitative measures of trends and progress over time relating to the Strategic Environmental Objectives that are detailed in the SEA Environmental Report and used in the evaluation. Each indicator to be monitored is accompanied by the target(s) that were identified with regard to the relevant strategic actions.

Table 5.1 overleaf shows the indicators and targets which have been selected for monitoring the likely significant environmental effects of implementing the Plan, if unmitigated.

The Monitoring Programme may be updated to deal with specific environmental issues - including unforeseen effects - as they arise. Such issues may be identified by the Council or identified to the Council by other agencies.

5.3 Sources

Measurements for indicators generally come from existing monitoring sources. Existing monitoring sources include those maintained by the Council and the relevant authorities e.g. the Environmental Protection Agency, the National Parks and Wildlife Service and the Central Statistics Office.

Internal monitoring of the environmental effects of grants of permission in the Council will provide monitoring of various indicators

and targets on a grant of permission by grant of permission³ basis. Where significant adverse effects - including positive, negative, cumulative and indirect - have the potential to occur upon, for example, entries to the RMP, entries to the RPS or ecological networks as a result of the undertaking of individual projects or multiple individual projects such instances should be identified and recorded and should feed into the monitoring evaluation.

5.4 Reporting and Responsibility

A stand-alone Monitoring Report on the significant environmental effects of implementing the Plan will be prepared in advance of the beginning of the review of the Plan. This report should address the indicators set out below.

The Council is responsible for the ongoing review of indicators and targets, collating existing relevant monitored data, the preparation of monitoring evaluation report(s), the publication of these reports and, if necessary, the carrying out of corrective action.

5.5 Thresholds

Thresholds at which corrective action will be considered include:

- The occurrence of flood events;
- Court cases taken by the Department of Arts, Heritage and the Gaeltacht regarding impacts upon archaeological heritage including entries to the RMP;
- Complaints received from statutory consultees regarding avoidable environmental impacts resulting from

³ The likely significant effects of development proposals on environmental sensitivities are further determined during the development management process. By documenting this determination (e.g. whether a proposed development will impact upon a Protected Structure or whether a proposed development can be adequately served with water services) while granting permissions, or at a later date, the requirement to monitor the effects of implementing the Plan can be achieved.

development which is granted
permission under the Plan;

- Boil notices on drinking water; and
- Fish kills.

Table 5.1 Selected Indicators, Targets and Monitoring Source

Environmental Component	Selected Indicator(s)	Selected Target(s)	Source (Frequency)
Biodiversity, Flora and Fauna	B1: Conservation status of habitats and species as assessed under Article 17 of the Habitats Directive	Maintenance of favourable conservation status for all habitats and species protected under national and international legislation to be unaffected by implementation of the Plan ⁴	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant). Department of Arts, Heritage and the Gaeltacht report of the implementation of the measures contained in the Habitats Directive - as required by Article 17 of the Directive (every 6 years). Consultations with the NPWS (at monitoring evaluation - see Section 5.4).
	B2: Percentage loss of functional connectivity without remediation resulting from development provided for by the Plan	B2: No significant ecological networks or parts thereof which provide functional connectivity to be lost without remediation resulting from development provided for in the Plan	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant). CORINE mapping resurvey (every c. 5 years).
	B3i: Number of significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Plan	B3i: Avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Plan	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant). Consultations with the NPWS (at monitoring evaluation - see Section 5.4).
	B3ii: Number of significant impacts on the protection of species listed on Schedule 5 of the Wildlife Act 1976	B3ii: No significant impacts on the protection of species listed on Schedule 5 of the Wildlife Act 1976	
Population and Human Health	PHH1: Occurrence (any) of a spatially concentrated deterioration in human health arising from environmental factors resulting from development provided for by the Plan, as identified by the Health Service Executive and Environmental Protection Agency	PHH1: No spatial concentrations of health problems arising from environmental factors as a result of implementing the Plan	<ul style="list-style-type: none"> Consultations with EPA and Health Service Executive (at monitoring evaluation - see Section 5.4).
Soil	S1: Soil extent and hydraulic connectivity	S1: To minimise reductions in soil extent and hydraulic connectivity	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant).
Water	W1: Classification of Overall Status (comprised of ecological and chemical status) under the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009)	W1: Not to cause deterioration in the status of any surface water or affect the ability of any surface water to achieve 'good status' ⁵	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant). Data issued under the Water Framework Directive Monitoring Programme for Ireland.
	W2: Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC	W2: Not to affect the ability of groundwaters to comply with Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant). Data issued under the Water Framework Directive Monitoring Programme for Ireland (multi-annual).
	W3: Number of incompatible developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk	W3: Minimise developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk in compliance with The Planning System and Flood Risk Management Guidelines for Planning Authorities	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant).

⁴ Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:

- no alternative solution available;
- imperative reasons of overriding public interest for the plan to proceed; and
- adequate compensatory measures in place.

⁵ Good status as defined by the WFD equates to approximately Q4 in the current national scheme of biological classification of rivers and mesotrophic in the trophic classification of lakes, as set out by the EPA.

SEA Statement for the Muine Bheag/Royal Oak Local Area Plan 2017-2023

Environmental Component	Selected Indicator(s)	Selected Target(s)	Source (Frequency)
Material Assets	M1: Number of new developments granted permission which can be adequately and appropriately served with waste water treatment over the lifetime of the Plan	M1: All new developments granted permission to be connected to and adequately and appropriately served by waste water treatment over the lifetime of the Plan	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant).
	M2: Number of non-compliances with the 48 parameters identified in the European Communities (Drinking Water) Regulations (No. 2) 2007 which present a potential danger to human health as a result of implementing the Plan	M2: No non-compliances with the 48 parameters identified in the European Communities (Drinking Water) Regulations (No. 2) 2007 which present a potential danger to human health as a result of implementing the Plan	<ul style="list-style-type: none"> EPA The Provision and Quality of Drinking Water in Ireland reports (multi-annual). EPA Remedial Action List (every quarter).
	M3i: Total collected and brought household waste	M3i: Minimise increases in and, where possible, reduce household waste generation	<ul style="list-style-type: none"> EPA National Waste Reports EPA Ireland's Environment Reports
	M3ii: Packaging recovered (t) by self-complying packagers	M3ii: Maximise increases in packaging recovered (t) by self-complying packagers	<ul style="list-style-type: none"> EPA Ireland's Environment Reports
Air and Climatic Factors	C1: Percentage of population travelling to work, school or college by public transport or non-mechanical means	C1: An increase in the percentage of the population travelling to work, school or college by public transport or non-mechanical means	<ul style="list-style-type: none"> CSO Population Data (every c. 5 years).
Cultural Heritage	CH1: Percentage of entries to the Record of Monuments and Places - and the context these entries within the surrounding landscape where relevant - protected from adverse effects resulting from development which is granted permission under the Plan	CH1: Protect entries to the Record of Monuments and Places - and the context of these entries within the surrounding landscape where relevant – protected from adverse effects resulting from development which is granted permission under the Plan	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant). Consultation with Department of Arts, Heritage and the Gaeltacht (at monitoring evaluation - see Section 5.4).
	CH2: Percentage of entries to the Record of Protected Structures and their context protected from adverse effects resulting from development which is granted permission under the Plan	CH2: Protect entries to the Record of Protected Structures and their context from adverse effects resulting from development which is granted permission under the Plan	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant). Consultation with Department of Arts, Heritage and the Gaeltacht (at monitoring evaluation - see Section 5.4).
Landscape	L1: Number of complaints received from statutory consultees regarding avoidable impacts on the landscape resulting from development which is granted permission under the Plan	L1: No developments permitted which result in avoidable impacts on the landscape resulting from development which is granted permission under the Plan	<ul style="list-style-type: none"> Internal monitoring of environmental effects of grants of permission (grant by grant).

AA CONCLUSION STATEMENT

IN SUPPORT OF THE
APPROPRIATE ASSESSMENT
OF THE
MUINE BHEAG / ROYAL OAK
LOCAL AREA PLAN 2017-2023

IN ACCORDANCE WITH THE REQUIREMENTS OF
ARTICLE 6(3) OF THE EU HABITATS DIRECTIVE

for: Carlow County Council

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JANUARY 2017

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Section 1 Introduction and Background

1.1 Introduction

This is the Appropriate Assessment (AA) Conclusion Statement for the Muine Bheag / Royal Oak Local Area Plan 2017-2023.

The obligation to undertake AA derives from Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC as transposed into Irish legislation by the European Communities (Birds and Natural Habitats) Regulations 2011 and the Planning and Development Act 2000, as amended. AA is a focused and detailed impact assessment of the implications of a strategic action (such as a plan or programme) or project, alone and in combination with other strategic actions and projects, on the integrity of any European Site in view of its conservation objectives.

This AA Conclusion Statement should be read in conjunction with the following documents which accompany the Statement:

- Strategic Environmental Report;
- Strategic Flood Risk Assessment; and
- Natura Impact Report (NIR), **including Appendix I** 'Summary details of European sites considered during the Appropriate Assessment'.

1.2 Legislative Requirements in relation to AA

In carrying out the AA for the Local Area Plan, the Part XAB of the Planning and Development Act 2000, as amended, requires, inter alia, that the Council take into account the matters arrayed in the first column on Table 1.1 below. The second column identifies how these issues have been addressed.

Table 1-1 Matters taken into account by the AA

Matter specified by the Regulations	How addressed by AA
(a) the NIR	A NIR accompanies this AA Conclusion Statement and the Strategy
(b) any other plans or projects that may, in combination with the plan or project under consideration, adversely affect the integrity of a European Site (see Section 2)	Throughout the NIR, particularly Section 2.5 of the NIR, as well as Section
(c) any supplemental information furnished in relation to any such report or statement	This AA Conclusion Statement supplements the NIR which is also accompanied by an Appendix (NIR Appendix I) which provides additional detail on European Sites
(d) if appropriate, any additional information sought by the authority and furnished by the applicant in relation to a Natura Impact Report	The Natura Impact Report has taken into account submissions received during the Plan/AA preparation process – see Section 2 of this Statement
(e) any information or advice obtained by the public authority	
(f) if appropriate, any written submissions or observations made to the public authority in relation to the application for consent for proposed plan or project	
(g) any other relevant information	

In addition to the above, the regulations require that the Council makes available for inspection a determination regarding the outcome of the assessment with respect to effects on the integrity of European Sites (such a determination is provided at Section 4 of this document).

1.3 AA Conclusion Statement

The Department of Arts, Heritage and the Gaeltacht's Non-Statutory AA guidance states that (Section 4.14) *it "is recommended that planning authorities include a clear and discrete AA Conclusion Statement as a distinct section in the written statement of the plan separate to the SEA statement."*

This guidance recommends that the following issues are addressed by the AA:

- Summary of how the findings of the AA were factored into the plan
- Reasons for choosing the plan as adopted, in the light of other reasonable alternatives considered as part of the AA process;
- A declaration that the plan as adopted will not have an adverse effect on the integrity of European Sites; and
- The Natura Impact Report.

As recommended, this AA Conclusion Statement addresses the above issues.

Section 2 How the findings of the AA were factored into the Local Area Plan

Various environmental sensitivities and issues have been communicated to the Council through the SEA and the AA. By integrating all related recommendations into the Plan, the Council have ensured that both the beneficial environmental effects of implementing the Plan have been and will be maximised and that potential adverse effects have been and will be avoided, reduced or offset.

Integration of AA considerations into the Plan was achieved through the:

1. Consultations

As environmental authorities identified under the Planning and Development (SEA) Regulations, as amended, the following authorities were sent Strategic Environmental Assessment (SEA) scoping notices indicating that submissions or observations in relation to the scope and level of detail of the information to be included in the environmental report could be made to the Council various submissions were received from the environmental authorities, including one from the Department of Arts, Heritage and the Gaeltacht (DAHG) provided information/suggestions **topics including 'legislative and procedural requirements for Habitats Directive', 'Habitats Directive AA Scoping' and the potential for adverse effects** arising from Local Area Plans, all of which were taken into account by the Appropriate Assessment.

Furthermore, submissions from the public and others were made on the Plan and AA Natura Impact Report while these documents were on public display and these resulted in updates being made to the documents. Changes to the provisions of the Plan made on foot of submissions were considered and did not change the conclusions of the AA. No comments **relating to the AA were made by the DAHG's submission on the Plan** and associated assessments.

2. Consideration of alternatives

Consideration of and integration of environmental considerations into alternatives, including sequencing, and ultimately into the Plan will contribute towards the protection and management of the environment over the lifetime of the Plan (see Section 3 of this Statement).

3. Integration of individual AA-related provisions into the Plan

Various provisions have been integrated into the text of the Plan through the iterative Plan-preparation with SEA and AA processes. These include AA-related measures that are part the Strategic Environmental Report. Objectives and policies within the Muine Bheag / Royal Oak LAP 2017-2023 that will act to protect European Sites include the following:

Policies Relating to Flooding

Policy FL 2

To have regard to the findings and recommendations of the current Strategic Flood Risk Assessment carried out for Muine Bheag / Royal Oak Local Area Plan area.

Policy FL 3

To implement the use of the sequential approach and application of the Justification Tests for Development Management and Development Plans, during the period of this plan, as set out in the Flood Risk Management Guidelines as follows: 1) Avoid development that will be at risk of flooding or that will increase the flooding risk elsewhere, where possible; 2) Substitute less vulnerable uses, where avoidance is not possible; and 3) Justify, mitigate and manage the risk, where avoidance and substitution are not possible. Development should only be permitted in areas at risk of flooding when there are no alternative, reasonable sites available in areas at lower risk that also meet the objectives of proper planning and sustainable development.

Policies Relating to Recreational Potential

Policy RC 1

To facilitate where practicable the provision of cycle-ways / walkways along the extent of the River Barrow and Canal in co-operation with landowners, Waterways Ireland and government departments. Any proposed cycling or walking routes along the River and Canal will be such to Appropriate Assessment in accordance with the Habitats Directive.

Policy RC 3

To continue to op-operate with community ad sports bodies in the development of the River Barrow and Canal for recreational uses. Projects shall have regard to the requirement for Appropriate Assessment in accordance with the Habitats Directive.

Policies Relating to Waste Management

Policy WMP 2

To safeguard the environment by seeking to ensure that residual waste is disposed of appropriately.

Objectives Relating to Waste Management

Objective WMO 2

To assess the feasibility of additional recycling, including composting facilities in the town or environs at a location(s) that will not adversely affect residential amenity or environmental quality.

Policies Relating to Designated Sites

Policy HR 9

To contribute, as appropriate, towards the protection of designated ecological sites including candidate Special Areas of Conservation (cSACs) and Special Protection Areas (SPAs); Wildlife Sites (including proposed Natural Heritage Areas); and Flora Protection Order sites.

Policy HR 10

To contribute towards compliance with relevant EU Environmental Directives and applicable National Legislation, Policies, Plans and Guidelines, including the following and any updated/superseding documents:

- EU Directives, including the Habitats Directive (92/43/EEC, as amended)^[1], the Birds Directive (2009/147/EC)^[2], the Environmental Liability Directive (2004/35/EC)^[3], the Environmental Impact Assessment Directive (85/337/EEC, as amended), the Water Framework Directive (2000/60/EC) and the Strategic Environmental Assessment Directive (2001/42/EC).
- National legislation, including the Wildlife Act 1976^[4], the European Communities (Environmental Impact Assessment) Regulations 1989 (SI No. 349 of 1989) (as amended), the Wildlife (Amendment) Act 2000, the European Union (Water Policy) Regulations 2003 (as amended), the Planning and Development Act 2000 (as amended), the European Communities (Birds and Natural Habitats) Regulations 2011 (SI No. 477 of 2011) and the European Communities (Environmental Liability) Regulations 2008^[5].
- National policy guidelines (including any clarifying Circulars or superseding versions of same), including the Landscape and Landscape Assessment Draft Guidelines 2000, the Environmental Impact Assessment Sub-Threshold Development Guidelines 2003, Strategic Environmental Assessment Guidelines 2004 and the Appropriate Assessment Guidance 2010.
- Catchment and water resource management Plans, including the relevant River Basin Management Plan.
- Biodiversity Plans and guidelines, including Actions for Biodiversity 2011-2016: **Ireland's 2nd National Biodiversity Plan** (including any superseding version of same).
- Freshwater Pearl Mussel Regulations (S.I. 296 of 2009) (including any associated designated areas or management plans).
- **Ireland's Environment 2014 (EPA, 2014, including any superseding versions of same), and to make provision where appropriate to address the report's goals and challenges.**

^[1] Including Annex I habitats, Annex II species and their habitats and Annex IV species and their breeding sites and resting places (wherever they occur).

^[2] Including Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur).

^[3] Including protected species and natural habitats.

^[4] Including species of flora and fauna and their key habitats.

^[5] Including protected species and natural habitats.

Policy HR 11

That all projects and plans arising from this plan¹ (including any associated improvement works or associated infrastructure) will be screened for the need to undertake Appropriate Assessment under Article 6 of the Habitats Directive. A plan or project will only be authorised after the competent authority has ascertained, based on scientific evidence, Screening for Appropriate Assessment, and a Stage 2 Appropriate Assessment where necessary, that:

(a) The Plan or project will not give rise to significant adverse direct, indirect or secondary effects on the integrity of any European site (either individually or in combination with other plans or projects); or

(b) The Plan or project will have significant adverse effects on the integrity of any European site (that does not host a priority natural habitat type/and or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000;

or © The Plan or project will have a significant adverse effect on the integrity of any European site (that hosts a natural habitat type and/or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons for overriding public interest, restricted to reasons of human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000.

Policy HR 12a

Not to permit projects giving rise to significant cumulative, direct, indirect or secondary impacts on Natura 2000 sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other on the basis of this plan (either individually or in combination with other plans or projects⁽⁶⁾).

Policy HR 13

To facilitate the conservation, protection and enhancement of the River Barrow including the adjacent wetlands and associated habitats and to ensure that development does not significantly adversely affect conservation values.

Policy HR 14

To seek the submission of an Ecological Impact Assessment for all development which may have a significant impact on the river and riparian habitats. This assessment should where appropriate suggest a minimum buffer of undisturbed vegetation to be retained to mitigate against pollution risks, reduce flooding potential, maintain habitats and provide an ecological corridor. The buffer zone shall, where possible be maintained free of development and hard surfaces. The assessment shall address protected species i.e. bats, otters including the requirement for derogation licences together with the cumulative impact of the proposed development.

Policy HR 15

To ensure that development does not have a significant adverse impact on plant species, animals and birds listed in the Flora Protection Order, Wildlife Act 1976 as amended, those listed in Annex IV of the Habitats Directive and those listed in Annex I of the Birds Directive.

Policies Relating to Green Infrastructure

Policy HR 17

To seek to contribute towards the protection and enhancement of biodiversity and ecological connectivity, including trees, hedgerows, rivers, streams, other landscape features and associated wildlife where these form part of the ecological network and/or may be considered as ecological corridors or stepping stones in the context of Article 10 of the Habitats Directive.

Objective HR 20

To promote the protection of trees, in particular native and broadleaf species, which are of conservation and/or amenity value. Development that requires the felling of mature trees of species interest will be discouraged.

¹ Such projects include but are not limited to those relating to: agriculture; amenity and recreation; contaminated sites; electricity transmission; flood alleviation and prevention; forestry; mineral extraction; renewable energy projects; roads; telecommunications; tourism; wastewater and discharges; and water supply and abstraction.

Objective HR 21

To promote the protection and [reservation of existing hedgerows. Where appropriate encourage planting of native hedgerow species

Objective HR 22

To contribute towards the protection of non-designated habitats and species which are of local biodiversity significance as appropriate.

Policies Relating to Invasive and Non-Native Species

Objective HR 23

To support as appropriate the National Parks and Wildlife Service's efforts to seek to control the spread of non-native species on land and water and where appropriate seek the submission of an invasive species management plan.

Policies Relating to Tourism

Policy TP 7

To seek to manage any increase in visitor numbers to avoid significant effects including loss of habitat and disturbance, any projects are a suitable distance from the water's edge and legislation relating to habitats, species, connectivity and designated sites is complied with.

Policies Relating to the Landscape

Policy L1

To contribute towards the protection of county and local level landscape designations from incompatible developments. Proposals for development that have the potential to significantly adversely impact upon these designations shall be accompanied by an assessment of the potential landscape and visual impacts of the proposed development - demonstrating that landscape impacts have been anticipated and avoided to a level consistent with the sensitivity of the landscape and the nature of the designation.

As there are a number of overlaps between the area which is designated as cSAC and existing land use zoning objectives, Policy HR 11B was integrated into the Plan in order to require applications for development within a constrained land use zoning objective area for the European Site to undergo Appropriate Assessment and demonstrate that the proposal will not give rise to any effect on the European Site in view of its qualification features and conservation objectives. This benefits the protection of the River Barrow and River Nore cSAC.

Policy HR 11b

HR 11B: To require applications for development within the constrained land use zoning objective for the Natura 2000 site (Map 14) to undergo Appropriate Assessment and demonstrate that the proposal will not give rise to any effect on the Natura 2000 site in view of its qualification features and conservation objectives.

Policies and objectives within the Plan that will act to protect the water quality and quantity with those European Sites against the potential impacts identified include the following:

Policies Relating to Water Supply and Quality

Policy WSP 1

To contribute towards the protection of existing and potential water resources, and their use by humans and wildlife, including rivers, streams, groundwater and associated habitats and species in accordance with the requirements and guidance in the EU Water Framework Directive 2000 (2000/60/EC), the European Union (Water Policy) Regulations 2003 (as amended), the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009), the Groundwater Directive 2006/118/EC and the European Communities Environmental Objectives (groundwater) Regulations, 2010 (S.I. No. 9 of 2010) and other relevant EU Directives, including associated national legislation and policy guidance (including any superseding versions of same). To also support the application and implementation of a catchment planning and management approach to development and conservation, including the implementation of Sustainable Drainage System techniques for new development.

Policy WSP 2

To support the implementation of the relevant recommendations and measures as outlined in the relevant River Basin Management Plan, and associated Programmes of Measures, or any such plans that may supersede same during the lifetime of the plan, as well as relevant recommendations contained in the Water Quality in Ireland 2010 – 2012 (EPA, 2015, and any updated/superseding document). Proposals for development would not have an unacceptable impact on the water environment, including surface waters, groundwater quality and quantity, river corridors and associated woodlands. Also to have cognisance of, where relevant, the EU's Common Implementation Strategy Guidance Document No. 20 which provides guidance on exemptions to the environmental objectives of the Water Framework Directive.

Policy WSP 8

To protect surface water and ground water resources and their associated habitats and species including fisheries and in particular Annex II listed species.

Objective Relating to Water Supply and Quality

Objective WSO 8

To ensure that all proposals for the development of an upgrade to the water supply system will be screened for Appropriate Assessment in accordance with Article 6(3) of the Habitats Directive and where significant impacts are identified, a Natura Impact Statement will be prepared.

Policy Relating to Waste Water

Policy WW 4

To ensure the changeover from septic tanks to mains connections in all cases where this is feasible, and that all new developments utilise and connect to the existing wastewater infrastructure. The provision of individual septic tanks and treatment plants within the Plan boundary will be strongly discouraged to minimise the risk of groundwater pollution. Where such facilities are permitted, full compliance with the 2009 EPA Code of Practice - Code of Practice Wastewater treatment and Disposal Systems serving single houses (p.e. ≤ 10), is required.

Objective Relating to Waste Water

Objective WWO 3

To ensure that any proposals for the development and /or upgrade of the Muine Bheag waste water treatment plant and waste water network will be subject to Appropriate Assessment in accordance with Article 6(3) and 6(4) of the EU Habitats Directive.

Objective Relating to Flooding

Objective FLO 4

To protect water bodies and watercourses within the plan area from inappropriate development, including the river, canal, streams, associated undeveloped riparian strips, wetlands and natural floodplains. A 10 metre strip on either side of such channel will be retained, where required, to facilitate access thereto. In addition, promote the sustainable management and uses of water bodies and avoid culverting or realignment of these features.

Policy Relating to Soil

Policy P 5

To ensure that adequate soil protection measures are undertaken where appropriate. Appropriate investigations shall be carried out into the nature of any soil and groundwater contamination and the risks associated with site development works.

Section 3 Appraisal Process of Alternatives Considered with Reference to the AA

3.1 Summary Description of Alternatives

As per the requirements of the SEA Directive, this SEA considers reasonable alternatives, which are capable of being implemented for the Local Area Plan, taking into account the objectives and policies of all higher-level Plans. These alternatives were assessed through the SEA process with reference to the specific requirements of the EU Habitats Directive and European Sites. An iterative process was undertaken between the SEA, AA and Local Area Plan design/development. The alternatives and their evaluation is detailed below:

- Development Scenario 1: A general continuation in accordance with the development objectives of the current 2010 – 2016 Plan;
- Development Scenario 2: To provide high density residential, retail and employment development on vacant and key opportunity sites in the town only; and
- Development Scenario 3: To consolidate and strengthen the town centre and provide for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner.

Alternatives	Summary	Features
Development Scenerio 1	Development Scenario 1: A general continuation in accordance with the development objectives of the current 2010 – 2016 Plan.	<ul style="list-style-type: none"> • Expansion on the suburbs of the town of residential, mixed use and industrial zoning with no direct link to the town centre. • Encourage new retail / commercial development, in a sequential manner, to existing vacant and brownfield sites. However, where sequential tests have exhausted these development opportunities, facilitate retail / commercial development on other appropriate sites within the town. • Opportunities for new residential development provided to the north and south of the town. • New areas of residential and commercial on the periphery of the development envelope. • Improvement of existing pedestrian provision within the town and also to the town centre from peripheral areas, where pedestrian access is limited, from southern side of town across Kilree Bridge and from eastern side of town across Kilcarrig Bridge, both too narrow for pedestrian access.
Development Scenerio 2	Development Scenario 2: To provide high density residential, retail and employment development on vacant and key opportunity sites in the town only.	<ul style="list-style-type: none"> • Expansion of the town due to focus of new development on key vacant sites throughout the town. • Consolidation of the existing town centre by encouraging the development of vacant or underutilised sites such as along the quays and on Regent Street (formerly Bargain City Carpets) in a sensitive and appropriate manner. • Encourage new retail / commercial development, in a sequential manner, to existing vacant and brownfield sites. • New areas of residential or commercial on key vacant and opportunity sites throughout the development envelope. These lands provide an opportunity to provide appropriate residential development including a range of different dwelling types in close proximity to the town centre, educational facilities and recreational areas.

		<ul style="list-style-type: none"> • Seek improvement of pedestrian links to enhance the character and accessibility within the town by greater linkages throughout.
Development Scenario 3	Development Scenario 3: To consolidate and strengthen the town centre and provide for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner.	<ul style="list-style-type: none"> • Consolidation of mixed uses in Town Centre zoning encouraging the development of underutilised sites in a sensitive and appropriate manner. • Residential development is phased outward from the town centre with opportunities for new residential development provided closer to the town centre. No new areas of residential or commercial on the periphery of the development envelope. • Encourage new retail / commercial development within the town centre. • Seek improvement of pedestrian links to enhance the character and accessibility within the town by greater linkages throughout. • Maximising the potential of the River Barrow, through the creation of a mix of uses, high quality public realm and public spaces. • Creation of a strategic employment land bank to the west of the town and its associated road / transport network, and the expansion of the existing Business Park and Industrial Estate.

3.1.1 Development Scenario 1

Development Scenario 1 would contribute towards efforts to improve sustainable mobility² (and associated effects on energy, air, noise and human health) by improving existing pedestrian access, however: such a contribution would be outweighed by the overall direction of the Strategy which prefers an expansion of peripheral areas for residential, mixed use, industrial and commercial uses, some of which have no direct link to the town centre.

The extent of development provided for would have to be served by infrastructure³ and could affect flood risk⁴.

By providing significant expansion of suburbs of the town and peripheral areas, this alternative would be likely to result in the greatest number and extent of residual adverse effects across the widest area. Such effects include loss of ecology (including non-designated ecology and ecological corridors and stepping-stones), the sealing of greenfield soils and threats to the status of waters⁵. This Scenario would provide for various uses on greenfield lands in the peripheries of the plan area, adversely impacting upon the consolidation of the town and sustainable mobility. The visual appearance of peripheral greenfield areas within the LAP area would be most likely to change under this scenario⁶.

By encouraging new retail/commercial development on vacant and brownfield sites, this alternative would somewhat contribute towards the protection and management of the environment elsewhere⁷.

3.1.2 Development Scenario 2

This scenario directs new development to vacant and infill opportunities only. By consolidating the existing town centre and improving pedestrian links, this alternative would contribute towards efforts to both improve sustainable mobility⁸ (and associated effects on energy, air, noise and human health), protect cultural heritage⁹ and improve the residential fabric within the town centre.

However, by restricting new development to high density to vacant and a number of key opportunity sites, this alternative would be likely to result in an increase of applications for development outside the LAP area

² SEOs C1 PHH1

³ SEOs M1 M2 M3

⁴ SEOs W3 PHH1

⁵ SEOs B1 B2 B3 S1 PHH1 W1 W2 W3

⁶ SEOs CH1 CH2 L1

⁷ SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1

⁸ SEOs C1 PHH1

⁹ SEOs CH1 CH2 L1

thereby weakening the town centre. It would be a challenge to serve peripheral areas with the necessary infrastructure¹⁰.

The increase in applications for development within the periphery to the LAP area would provide for the greatest number and extent of residual adverse effects beyond the LAP area as a result of greenfield development. Such effects include loss of ecology (including non-designated ecology and ecological corridors and stepping-stones), the sealing of greenfield soils and threats to the status of waters¹¹ and changes to the visual appearance of lands¹².

By encouraging an extent of development within the town centre, this alternative would somewhat contribute towards the protection and management of the environment elsewhere¹³, however the higher densities of development would have the potential to adversely impact upon the character of the town including cultural heritage and its context¹⁴.

3.1.3 Development Scenario 3

Scenario 3 consolidates and strengthens the town centre and provides for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner.

Consolidation of the town centre, phasing of residential development, improvement of pedestrian links and public spaces are all provided for.

By providing for development in this manner, this alternative would maximise sustainable mobility¹⁵ (and associated effects on energy, air, noise and human health) and protect cultural heritage¹⁶ within the town centre. Overall, new development would be best served by existing and planned infrastructure under this scenario¹⁷. By limiting development within the Plan area and on the periphery of the development envelope, this alternative would benefit the protection of various environmental components (e.g. ecology, water, visual sensitivities etc.) beyond the LAP area that could otherwise be threatened¹⁸.

Potential conflicts with all environmental components¹⁹ (detailed under Table 3-1) would still have to be mitigated to ensure that significant adverse residual environmental effects do not occur.

This scenario provides for a greenbelt along the River Barrow that would contribute towards the protection of the status of the river including associated biodiversity²⁰.

Development of the strategic employment lands at Royal Oak in the west of the town would have the potential to adversely impact upon architectural and natural heritage if unmitigated²¹.

3.1.4 Summary Evaluation of Alternatives

A number of potentially significant adverse environmental effects that are common to all alternatives and are described on the Table below taken from the SEA.

Table 3-1 Potentially Significant Adverse Environmental Effects common to all alternatives

Environmental Component	Likely Significant Effect, if unmitigated
Biodiversity and Flora and Fauna	<ul style="list-style-type: none"> Loss of biodiversity with regard to designated biodiversity and flora and fauna (including European Sites, proposed Natural Heritage Areas and Annexed habitats and species), ecological connectivity and stepping stones and non-designated biodiversity and flora and fauna

¹⁰ SEOs M1 M2 M3

¹¹ SEOs B1 B2 B3 S1 PHH1 W1 W2 W3

¹² SEO L1

¹³ SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1

¹⁴ SEOs CH1 CH2 L1

¹⁵ SEOs C1 PHH1

¹⁶ SEOs CH1 CH2 L1

¹⁷ SEOs M1 M2 M3

¹⁸ SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1

¹⁹ B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1

²⁰ SEOs B1 B2 B3

²¹ B1 B2 B3 S1 CH2 L1

Population and Human Health	<ul style="list-style-type: none"> Spatially concentrated deterioration in human health
Soil (especially soil on greenfield lands)	<ul style="list-style-type: none"> Adverse impacts on the hydrogeological and ecological function of the soil resource
Water (including the River Barrow and its tributaries and groundwater)	<ul style="list-style-type: none"> Adverse impacts upon the status of water bodies arising from changes in quality, flow and/or morphology Increase in flood risk
Material Assets (it is the function of Irish Water to provide for water service's needs)	<ul style="list-style-type: none"> Failure to provide adequate and appropriate waste water treatment Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean Increases in waste levels
Air and Climatic Factors	<ul style="list-style-type: none"> Failure to contribute towards sustainable transport and associated impacts (energy usage and emissions to air including noise and greenhouse gases)
Cultural Heritage	<ul style="list-style-type: none"> Effects on entries to the Record of Monuments and Places and other archaeological heritage Effects on entries to the Records of Protected Structures and other architectural heritage
Landscape	<ul style="list-style-type: none"> Occurrence of adverse visual impacts

Table 3-2 below provides a comparative evaluation of the environmental effects of alternative development strategies against Strategic Environmental Objectives. This is supported by the narrative above and by effects that are common to all alternatives detailed on Table 3-1.

Table 3-2 Comparative Evaluation of Alternative Development Strategies

Alternative Development Strategy	<u>Likely to Improve</u> status of SEOs <u>to a greater degree</u>	<u>Likely to Improve</u> status of SEOs <u>to a lesser degree</u>	<u>Least Potential Conflict</u> with status of SEOs - <u>likely to be mitigated to greater degree.</u> significant adverse effects less likely	<u>More Potential Conflict</u> with status of SEOs - <u>likely to be mitigated to an intermediate degree.</u> significant adverse effects more likely	Probable <u>Conflict</u> with status of SEOs- unlikely to be mitigated	<u>No significant interaction</u> with status of SEOs
Alternative Development Strategy 1		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		
Alternative Development Strategy 2		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		
Alternative Development Strategy 3	B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1		B1 B2 B3 PHH1 S1 W1 W2 W3 C1 M1 M2 M3 CH1 CH2 L1			

3.2 Considerations of Cumulative Impacts/In-Combination Effects

Both the SEA and NIR account for potential interactions with other Plans and Projects. These include interactions resulting from the Plan and Projects such as:

- Other land use Plans (e.g. the Carlow County Development Plan);
- Water services, transport and energy infrastructure plans (e.g. Irish Water's Water Services Strategic Plan and associated Capital Investment Plan 2014-2016, Grid25 and associated Implementation Programme) and the County Carlow 2021 Local Economic & Community Plan 2016-2021; and
- Environmental protection and management plans (e.g. South East River Basin Management Plans and flood risk management plans).

Such potential effects include the following (note that mitigation measure and provisions to account for these effects have been integrated into the Plan):

- Contributions towards reductions in travel related greenhouse gas and other emissions to air (in combination with plans and programmes from all sectors, including transport and land use planning) as a result of consolidating development and facilitating sustainable mobility/a shift from motorised transport modes to more sustainable and non-motorised transport modes.
- Contributions towards travel related greenhouse gas and other emissions to air (in combination with plans and programmes from all sectors, including transport and land use planning) as a result of facilitating development that must be accompanied by road capacity.
- Facilitation of new development that is accompanied by appropriate levels of water services thereby contributing towards environmental protection.
- Need for and use of water and wastewater treatment capacity arising from new developments and associated potential adverse effects.
- Potential cumulative effects upon surface and ground water status as a result of development including housing and employment – loadings and abstractions;
- Potential cumulative effects (habitat damage, enhancing ecological connectivity, contributing towards sustainable mobility) arising from linear developments, such as those relating to Green Infrastructure;
- Potential cumulative effects on flood risk by, for example, development of greenfield lands;
- **Potential cumulative visual impact of development at the interface between the LAP boundary and the surrounding area of the County which is subject to the provisions of the County Development Plan; and**
- In combination with plans and programmes from all sectors potential adverse effects on all environmental components arising from all development in greenfield and brownfield areas (e.g. infrastructural, residential, economic, agricultural etc.). The type of these effects is consistent with those described on Table 3-1. These plans and programmes from other sectors undergo SEA and comply with environmental legislation while projects are subject to EIA and AA, as relevant.

3.3 Emerging Preferred Option

Following the comparative evaluation process which is detailed in full in Section 7 of the SEA Scenario 3 was selected as the emerging preferred option as it emerged as the least constrained option in terms of ecological and environmental constraints. This was to consolidate and strengthen the town centre and provide for the limited expansion of Muine Bheag to the west of the town centre in a phased sustainable manner. The Plan includes Phase 1 Residential development and Enterprise and Employment. A summary of the likely significant effects and potentially significant effects (if unmitigated) to European Sites that could arise from the Plan can be found in Table 3-3 (as taken from the NIR). Where likely is above 95% chance of occurrence and probable is between 50-95% chance.

Table 3-3 Summary of Effects Arising from the Selected Alternative

Environmental Component	Likely Significant Effect, if unmitigated	Potentially Significant Effect, If unmitigated
Biodiversity and flora and fauna	Loss of biodiversity with regard to designated biodiversity and flora and fauna (including European Sites, proposed Natural Heritage Areas and Annexed habitats and species), ecological connectivity and stepping stones and non-designated biodiversity and flora and fauna.	Loss / reduction of habitat area (e.g. due to the development of new projects). Disturbance to Key Species (e.g. increased public access to protected sites, or during the construction phase of infrastructure projects). Habitat or species fragmentation. Reduction in species density. Changes in key indicators of conservation value such as decrease in water quality / quantity (e.g. through inadequate wastewater treatment, run-off of pollutants during construction and operation of developments, agricultural runoff)
Water	Adverse effects upon the status of water bodies arising from changes in quality, flow and/or morphology. Increase in flood risk.	Changes in key indicators of conservation value such as decrease in water quality / quantity (e.g. through inadequate wastewater treatment, run-off of pollutants during construction and operation of developments, agricultural runoff). Increase in flood risk

Section 4 Determination

**Appropriate Assessment Determination under:
the Planning and Development Act 2000 (as amended)
for the:
Muine Bheag / Royal Oak Local Area Plan 2017-2023.**

An Appropriate Assessment (AA) determination has been made by Carlow County Council regarding the Muine Bheag / Royal Oak Local Area Plan 2017-2023.

Section 20 (3) (f) of the Planning and Development Act 2000 (as amended), requires, inter alia, a determination to be made as to whether Proposed Material Alterations to the Local Area Plan warrant the undertaking of AA. An Appropriate Assessment determination [pursuant to Article 6(3) of the Habitats Directive as to whether or not a plan or project would adversely affect the integrity of a European site and the Planning and Development Act 2000 (as amended)] is being made by Carlow County Council.

In carrying out this Appropriate Assessment, the Council is taking into account the relevant matters specified under Part XAB of the Planning and Development Act 2000 (as amended), including:

- Written submissions made on the Plan and associated documents while they were placed on public display; and
- The Natura Impact Report (which considers other plans and projects and has taken into account changes arising from submissions and observations received during public display).

It is determined that the risks to the safeguarding and integrity of the qualifying interests and conservation objectives of all European Sites have been addressed by the inclusion of achievable mitigation measures that will prioritise the avoidance of effects in the first place and will reliably mitigate these effects where these cannot be avoided. In addition, any lower level plans and projects arising through the implementation of the Plan will themselves be subject to relevant stages of Appropriate Assessment when further details of design and location are known.

Having incorporated these mitigation commitments; it is considered that the Muine Bheag / Royal Oak Local Area Plan 2017-2023 is not foreseen to have any likely significant effects to any European Site²².

²² Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:

- a) no alternative solution available,
- b) imperative reasons of overriding public interest for the plan to proceed; and
- c) Adequate compensatory measures in place.

**Appropriate Assessment Determination under:
the Planning and Development Act 2000 (as amended)
for the:
Muine Bheag / Royal Oak Local Area Plan 2017-2023.**

An Appropriate Assessment (AA) determination has been made by Carlow County Council regarding the Muine Bheag / Royal Oak Local Area Plan 2017-2023.

Section 20 (3) (f) of the Planning and Development Act 2000 (as amended), requires, inter alia, a determination to be made as to whether Proposed Material Alterations to the Local Area Plan warrant the undertaking of AA. An Appropriate Assessment determination [pursuant to Article 6(3) of the Habitats Directive as to whether or not a plan or project would adversely affect the integrity of a European site and the Planning and Development Act 2000 (as amended)] is being made by Carlow County Council.

In carrying out this Appropriate Assessment, the Council is taking into account the relevant matters specified under Part XAB of the Planning and Development Act 2000 (as amended), including:

- Written submissions made on the Plan and associated documents while they were placed on public display; and
- The Natura Impact Report (which considers other plans and projects and has taken into account changes arising from submissions and observations received during public display).

It is determined that the risks to the safeguarding and integrity of the qualifying interests and conservation objectives of all European Sites have been addressed by the inclusion of achievable mitigation measures that will prioritise the avoidance of effects in the first place and will reliably mitigate these effects where these cannot be avoided. In addition, any lower level plans and projects arising through the implementation of the Plan will themselves be subject to relevant stages of Appropriate Assessment when further details of design and location are known.

Having incorporated these mitigation commitments; it is considered that the Muine Bheag / Royal Oak Local Area Plan 2017-2023 is not foreseen to have any likely significant effects to any European Site¹.

Signed: _____
Signatory
Approved Officer

¹ Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:
a) no alternative solution available,
b) imperative reasons of overriding public interest for the plan to proceed; and
c) Adequate compensatory measures in place.

NATURA IMPACT REPORT - APPENDIX I

SUMMARY DETAILS OF ALL EUROPEAN SITES CONSIDERED DURING THE APPROPRIATE ASSESSMENT

IN SUPPORT OF THE

APPROPRIATE ASSESSMENT

OF THE

MUINE BHEAG / ROYAL OAK LOCAL AREA PLAN 2017-2023

IN ACCORDANCE WITH THE REQUIREMENTS OF
ARTICLE 6(3) OF THE EU HABITATS DIRECTIVE

for: Carlow County Council

Athy Road
Carlow
County Carlow



by: CAAS Ltd.

2nd Floor, The Courtyard
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Dublin 1



JANUARY 2017

Introduction

This appendix presents background summary data relating to each European site (cSACs and SPAs) that was considered during the Appropriate Assessment of the Muine Bheag / Royal Oak Local Area Plan 2017-2023. Data presented has been collated from various sources made available by the National Parks and Wildlife Service (NPWS) of the Department of Arts, Heritage and the Gaeltacht.

All sites within each list are sorted according to NPWS Site Code.

The principal sources of information include the following:

- *Site Synopses*
- *NATURA 2000 Standard Data Forms*
- *Conservation Objective (Generic Versions)*
- *Detailed Site Specific Conservation Objectives and supporting documents (where available)*¹

Data presented on each site includes:

- *Site Name*
- *Site Code*
- *County*
- *SSCO Published or not (as of February 2017)*
- *SSCO Version reference used during AA*
- *Location relevant to the Strategy area*
- *Previously reported threats*
- *Qualifying Interests (QIs) in the case of SACs:*
 - *Listed Annex I habitats for which site is selected - abbreviated version as used by NPWS (2013)*²
 - *Listed Annex II species for which site is selected - common English name*

¹ Site-Specific Detailed Conservation Objectives List for designated sites is available at: <http://www.npws.ie/protected-sites/conservation-management-planning/conservation-objectives> (20/05/2016).

² NPWS (2013). The Status of EU Protected Habitats and Species in Ireland. Overview Volume I. Unpublished Report, National Parks and Wildlife Services.

European Sites which occur within 15 Km of the Plan Area

Site Name:	Blackstairs Mountains cSAC
Site Code:	770
County(s):	Carlow, Wexford
SSCO's Published:	No
Location:	Occurs ca 10.5km south-east of Muine Bheag/ Royal Oak.
Threats:	Grazing is considered to be one of the main threats to the site. Lower slopes of the site which contains upland grassland has been heavily grazed. Although sheep numbers are low overall, there are pockets where high numbers are found, which has resulted in patches of bare ground. The site is also vulnerable to the burning of Heather, which appears to be carried out on a rotational basis. Bogland present in the area is reduced to fragments bordering improved grassland and forestry.
SSCO Version:	NPWS (2015) Conservation objectives for Blackstairs Mountains SAC [000770]. Generic Version 4.0. Department of Arts, Heritage and the Gaeltacht.
Habitat QI's (Annex I Habitats):	<ul style="list-style-type: none"> • Wet Heath; • Dry Heath
Species QI's (Annex II Species):	

Site Name:	River Barrow and River Nore cSAC
Site Code:	2162
County(s):	Carlow, Kildare, Kilkenny, Laois, Offaly, Tipperary, Waterford, Wexford
SSCO's Published:	Yes
Location:	Runs through the area of Muine Bheag/ Royal Oak.
Threats:	The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, over-grazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel (<i>Prunus laurocerasus</i>) and Rhododendron (<i>Rhododendron ponticum</i>). The water quality of the site remains vulnerable. Good quality water is necessary to maintain the populations of the Annex II animal species listed above. Good quality is dependent on controlling fertilisation of the grasslands, particularly along the Nore. It also requires that sewage be properly treated before discharge. Drainage activities in the catchment can lead to flash floods which can damage the many Annex II species present. Capital and maintenance dredging within the lower reaches of the system pose a threat to migrating fish species such as lamprey and had. Land reclamation also poses a threat to the salt meadows and the populations of legally protected species therein.
SSCO Version:	NPWS (2011) Conservation Objectives: River Barrow and River Nore SAC 002162. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Habitat QI's (Annex I Habitats):	<ul style="list-style-type: none"> • Estuaries; • Tidal Mudflats and Sandflats; • Salicornia Mud; • Atlantic Salt Meadows; • Mediterranean Salt Meadows; • Floating River Vegetation; • Dry Heath; • Hydrophilous Tall Herb Communities; • Petrifying Springs*; • Old Oak Woodlands; • Alluvial Forests*
Species QI's (Annex II Species):	<ul style="list-style-type: none"> • Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>); • Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>); • White-clawed Crayfish (<i>Austropotamobius pallipes</i>); • Sea Lamprey (<i>Petromyzon marinus</i>); • Brook Lamprey (<i>Lampetra planeri</i>); • River Lamprey (<i>Lampetra fluviatilis</i>); • Twaite Shad (<i>Alosa fallax</i>); • Atlantic Salmon (<i>Salmo salar</i>); • Otter (<i>Lutra lutra</i>); • Killarney Fern (<i>Trichomanes speciosum</i>);

	<ul style="list-style-type: none"> • Nore Freshwater Pearl Mussel (<i>Margaritifera durrovensis</i>)
--	---------------------------------------------------------------------------------------------------------------------

European Sites that occur beyond 15 km of the Plan Boundary but are Hydrologically Connected to the Plan Area

Site Name:	Lower River Suir cSAC
Site Code:	2137
County(s):	Kilkenny, Tipperary, Waterford
SSCO's Published:	No
Location:	Occurs approximately 42 km south-west of the LAP boundary (ca 67 km downstream).
Threats:	The main land uses at the site consist largely of agricultural activities which generates pressure on the site from grazing, silage production, fertilising and land reclamation. The grassland is intensively managed and the rivers are therefore vulnerable to pollution from run-off of fertilisers and slurry. Forestry is also seen as a lesser threat to the site. Both commercial and leisure fishing takes place on the rivers and is a main tourist attraction on stretches of the Suir and some of its tributaries – this is identified as a pressure on the site. Other recreational activities such as boating, golfing and walking can extend pressures on the SAC. Several industrial developments, which discharge into the river, border the site including three dairy related operations and a tannery.
SSCO Version:	NPWS (2015) Conservation objectives for Lower River Suir SAC [002137]. Generic Version 4.0. Department of Arts, Heritage and the Gaeltacht.
Habitat QI's (Annex I Habitats):	<ul style="list-style-type: none"> • Atlantic Salt Meadows; • Mediterranean Salt Meadows; • Floating River Vegetation; • Hydrophilous Tall Herb Communities; • Old Oak Woodlands; • Alluvial Forests*; • Yew Woodlands*
Species QI's (Annex II Species):	<ul style="list-style-type: none"> • Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>); • White-clawed Crayfish (<i>Austropotamobius pallipes</i>); • Sea Lamprey (<i>Petromyzon marinus</i>); • Brook Lamprey (<i>Lampetra planeri</i>); • River Lamprey (<i>Lampetra fluviatilis</i>); • Twait Shad (<i>Alosa fallax</i>); • Atlantic Salmon (<i>Salmo salar</i>); • Otter (<i>Lutra lutra</i>)

NATURA IMPACT REPORT

IN SUPPORT OF THE
APPROPRIATE ASSESSMENT
OF THE
MUINE BHEAG / ROYAL OAK
LOCAL AREA PLAN 2017-2023

IN ACCORDANCE WITH THE REQUIREMENTS OF
ARTICLE 6(3) OF THE EU HABITATS DIRECTIVE

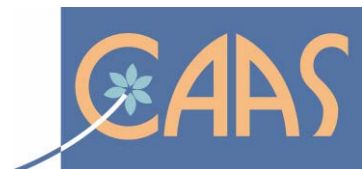
for: Carlow County Council

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County Carlow



by: CAAS Ltd.

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JANUARY 2017

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Section 1 Introduction

1.1 Background

This is the Natura Impact Report in support of the Appropriate Assessment of the Muine Bheag / Royal Oak Local Area Plan (LAP) 2017-2023 in accordance with the requirements of Article 6(3) of the EU Habitats Directive¹.

This report is divided into the following five sections:

- Section 1 Introduction
- Section 2 Stage 1 Screening
- Section 3 Stage 2 Appropriate Assessment
- Section 4 Mitigation Measures
- Section 5 Conclusion

1.2 Legislative Context

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, **better known as "The Habitats Directive"**, provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000. In Ireland, these are candidate Special Areas of Conservation (cSACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/ECC), hereafter referred to as European sites.

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect Natura 2000 sites. Article 6(3) establishes the requirement for AA:

"Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

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

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

¹ Directive 92/43/EEC

These requirements are implemented in the Republic of Ireland by the European Communities (Birds and Natural Habitats) Regulations 2011. These regulations consolidate the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats) (Control of Recreational Activities) Regulations 2010, as well as addressing transposition failures identified in judgements of the Court of Justice of the European Union (CJEU).

1.3 Stages of Appropriate Assessment

This Natura Impact Report has been prepared in accordance with the following guidance:

- *Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, 2010.*
- *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, European Commission Environment DG, 2002.*
- *Managing Natura 2000 sites: The Provisions of Article 6 of the Habitats Directive 92/43/EEC: European Commission, 2000.*

AA comprises up to four successive stages:

Stage One: Screening

The process which identifies the likely impacts upon a European site of a project or plan, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant.

Stage Two: Appropriate Assessment

The consideration of the impact on the integrity of the European site of the project or plan, **either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives.** Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts. If adequate mitigation is proposed to ensure no significant adverse impacts on European sites, then the process may end at this stage. However, if the likelihood of significant impacts remains, then the process must proceed to Stage 3.

Stage Three: Assessment of Alternative Solutions

The process that examines alternative ways of achieving the objectives of the project or plan that avoids adverse impacts on the integrity of the European site.

Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain

An assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed.

The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures. First, the plan should aim to avoid any impacts on European sites by identifying possible impacts early in the plan-making process and writing the plan in order to avoid such impacts. Second, mitigation measures should be applied, if necessary, during the AA process to the point where no adverse impacts on the site(s) remain. If the plan is still likely to result in impacts on European sites, and no further practicable mitigation is possible, then it must be rejected. If no alternative solutions are identified and the plan is required for imperative reasons of overriding public interest (IROPI test) under Article 6(4) of the Habitats Directive, then compensation measures are required for any remaining adverse effect.

In the case of this Natura Impact Report, it was found that the Plan required assessment to Stage 2 AA.

Section 2 Stage 1 Screening

2.1 Muine Bheag / Royal Oak Area

Muine Bheag / Royal Oak is located in the south of County Carlow and is an important urban centre, which services a large agricultural hinterland. The town provides a range of residential, community, commercial and employment functions.

Muine Bheag / Royal Oak is located approximately 20km from Carlow town and approximately 23km from Kilkenny on the R705 Leighlinbridge / Carlow to Borris / New Ross regional road. The town is also located on the R724 regional road to Kildavin and Bunclody. It is also served by a railway station and is strategically located proximate to the R448 and the M9 Dublin to Waterford motorway.

The historical development of the town has left a significant built heritage characterised by historic street patterns, building groups and various features of architectural and historical significance.

The town is sited primarily to the east of the River Barrow with the exception of Royal Oak village to the west of the town and is bounded by the rail line to the east and south of the town.

2.2 Description of the Plan

The main aim of the LAP is to set out a framework for the physical development of the Muine Bheag / Royal Oak area so that growth may take place in a coordinated, sensitive and orderly manner, while at the same time being sensitive to the environment.

Policies and objectives outlined in the LAP are in addition to the policies and objectives contained in the Carlow County Development Plan 2015-2021. It is acknowledged that not all strategic objectives will be achieved during the six-year LAP timeframe; however it is important to identify these objectives to ensure commitment to achieving them in the longer term.

2.2.1 Plan Vision

Carlow County Council's Vision for the town is as follows:

To build on Muine Bheag / Royal Oaks unique strengths including its distinct character of built and natural heritage and to provide a focused approach to planning for future growth in a coherent, sustainable, spatial fashion. The Plan aims to achieve a more consolidated urban form that facilitates a sustainable economic base and creates sustainable and integrated communities while balancing future development with the conservation and enhancement of the towns natural and built environment.

2.2.2 Strategic Objectives for the LAP

The Strategic Objectives of the Muine Bheag / Royal Oak LAP are as follows:

1. To create an attractive town with a compact urban form which contributes to the natural and built heritage amenities of the town and provides a vibrant and vital mixed-use environment.
2. To facilitate the creation of a sustainable vibrant and vital economy which maximises the unique attributes of the town.
3. To create a town of well-connected sustainable neighbourhoods and socially inclusive communities.

2.2.3 Relationship with other Relevant Plans and Programmes

The Muine Bheag / Royal Oak LAP sits within a hierarchy of land use forward planning strategic actions. The Plan must comply with relevant higher-level strategic actions and may, in turn, guide lower level strategic actions. The Plan also forms part of the Carlow County Development Plan along with other Local Area Plans in the County.

The National Spatial Strategy 2002-2020

The National Spatial Strategy (NSS) is the national planning framework for Ireland to achieve a better balance of social, economic and physical development as well as balanced population growth between the regions. The aim of the Strategy is to utilise urban land sensitively and efficiently, reduce dereliction and encourage refurbishment.

Regional Planning Guidelines (South East Region 2010-2022)

Ireland was divided into eight regional forward planning regions, Dublin, Midlands, Mid East, Mid-West, South East, South West, West and Border, each with its own regional planning authority composed of Elected Members selected by the constituent local government councils. Regional planning authorities were required, under the Planning and Development (Regional Planning Guidelines) Regulations 2003 (SI No. 175 of 2003), to draw up Regional Planning Guidelines (RPGs), long term strategic planning frameworks, for their relevant region. Since 2015, three new regional assemblies (the Northern and Western, Southern and Eastern and Midland Regional Assemblies) undertake the work previously undertaken by the Regional Authorities, including the implementation of the Regional Planning Guidelines. Carlow County Council was part of the South East Region Authority and is now part of the Southern and Eastern Regional Assembly.

County Carlow, including Muine Bheag / Royal Oak, is subject to the Regional Planning Guidelines for the South East 2010-2022 that provide a framework for the long-term strategic development of the South Eastern Region. The Guidelines do this through setting out goals, policies and objectives in relation to population targets, housing, infrastructure, economic development, environment, amenities, social infrastructure and community development, ensuring the successful implementation of the NSS at regional, county and local level.

The RPGs have allocated a population target of 63,536 for County Carlow by 2022. This represents a population increase of 4,085 from the 2016 population target of 59,451. Applying an average allocation per annum, this amounts to a population of 680 per annum between 2016 and 2022. The allocation for Muine Bheag to 2022 is therefore calculated as 10.6% of the population target (72 pop / average household size (2.7) = 27 units with 75% over zoning = 47 additional units). Adding this to the 2021 housing target (275) gives a revised target of 322 housing units for Muine Bheag / Royal Oak for the period 2016-2022.

Carlow County Development Plan 2015-2021

The Carlow County Development Plan provides the overall statutory framework for the beneficiary of **the town's** influence. Currently Muine Bheag is a district town and is identified as containing well-developed services and community facilities and have the capacity to accommodate additional growth (subject to certain physical infrastructural investments). The Core Strategy and the County Development Plan will reinforce developments in the Muine Bheag / Royal Oak area.

County Carlow Wind Energy Strategy

Carlow County Council recognises the importance of renewable energy. County Carlow has the potential to harness an extensive amount of renewable energy resources, primarily from wind. A Wind Energy Strategy was prepared by Carlow County Council, which explores the potential of wind energy in County Carlow.

County Carlow Retail Strategy

A Retail Strategy for County Carlow was undertaken as part of the preparation of Carlow County Development Plan 2015-2021. The Retail Planning Guidelines for Planning Authorities, issued by the Department of the Environment, Community and Local Government in April 2012, require Local Authorities to prepare a retail strategy and provide policies for retail development in development plans. Carlow County Council recognises that the retail sector has a key role to play in relation to economic and social activity, employment and the continued vitality of the towns and villages throughout the county.

County Carlow Housing Strategy

A Housing Strategy was prepared for County Carlow as part of the preparation of the Carlow County Development Plan 2015 – 2021. This Strategy is also applicable to the Muine Bheag / Royal Oak LAP. It sets out a framework for the supply of land to meet the housing needs arising in the county. It outlines what the anticipated social and affordable housing need for County Carlow between 2015 and 2021.

Smarter Travel 2009

“Smarter Travel, A Sustainable Transport Future, A New Transport Policy for Ireland 2009 - 2020” is the Government’s action plan to free towns and cities from traffic congestion, substantially cut CO2 emissions, encourage car based commuters to leave their cars at home, and encourage a shift toward walking, cycling and greater public transport usage.

2.2.1 Environmental Protection Objectives

The Muine Bheag / Royal Oak LAP is subject to a number of high-level environmental protection policies and objectives with which it must comply. Examples of Environmental Protection Objectives include the aims of the EU Habitats Directive which is to contribute towards ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora in the European territory of Member States and the purpose of the Water Framework Directive which is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater which, among other things, prevents deterioration in the status of all water bodies and protects, enhances and restores all waters with the aim of achieving good status.

2.3 European sites in and within 15 km and those hydrologically linked to the Plan Area

This section of the screening process describes the European Sites within a 15 km potential zone of influence of the Plan Area. The distance of 15 km is currently recommended in the DoE document *Appropriate Assessment of Plans and Projects - Guidance for Planning Authorities*, however, sites beyond this distance should also be considered where there are hydrological linkages or other pathways that extend beyond 15 km thereby ensuring that all potentially affected European Sites are included in the screening process.

Those European sites that occur within 15km of the LAP Area are listed in Table 2.1 and illustrated in Figure 1 below while those sites which occur beyond 15km but are located downstream of the Plan Area are listed in Table 2.2 and illustrated in Figure 2 below.

Based on the above approach, a total of three European sites, comprising three SACs, require consideration in the AA process. No SPAs require consideration.

In order to determine the potential for effects from the LAP, information on the qualifying features, known vulnerabilities and threats to site integrity pertaining to any potentially affected European sites was reviewed and is presented in Appendix I. This information was derived from a number of sources including the following:

- *Ireland's Article 17 Report to the European Commission "Status of EU Protected Habitats and Species in Ireland" (NPWS, 2013).*
- *Site Synopses.*
- *NATURA 2000 Standard Data Forms.*

cSAC and SPA sites are selected for a range of different habitats and species listed on Annex I and Annex II of the habitats directive, known as Qualifying Interests (QIs) or Special Conservation Interests (SCI's). In summary, those QIs/SCIs for which European Sites are selected are presented in Table 2.1 and Table 2.2.

Since the conservation objectives for the European sites focus on maintaining the favourable conservation condition of the qualifying interests of each site, the screening process concentrated on assessing the potential implications of the Muine Bheag / Royal Oak LAP against the qualifying interests of each site.

Table 2.1 European Sites which occur within 15 km of the Plan Area, Relevant Qualifying Features and Site Vulnerability

Site Code	Site Name	Qualifying Features	Location and Site Vulnerability
000770	Blackstairs Mountains cSAC	Wet Heath; Dry Heath	This SAC occurs ca 10.5 km southeast of Muine Bheag / Royal Oak. Grazing is considered to be one of the main threats to the site. Lower slopes of the site which contains upland grassland has been heavily grazed. Although sheep numbers are low overall, there are pockets where high numbers are found, which has resulted in patches of bare ground. The site is also vulnerable to the burning of Heather, which appears to be carried out on a rotational basis. Bogland present in the area is reduced to fragments bordering improved grassland and forestry.
002162	River Barrow and River Nore cSAC	Estuaries; Tidal Mudflats and Sandflats; Salicornia Mud; Atlantic Salt Meadows; Mediterranean Salt Meadows; Floating River Vegetation; Dry Heath; Hydrophilous Tall Herb Communities; Petrifying Springs*; Old Oak Woodlands; Alluvial Forests* Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>); Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>); White-clawed Crayfish (<i>Austropotamobius pallipes</i>); Sea Lamprey (<i>Petromyzon marinus</i>); Brook Lamprey (<i>Lampetra planeri</i>); River Lamprey (<i>Lampetra fluviatilis</i>); Twaiite Shad (<i>Alosa fallax</i>); Atlantic Salmon (<i>Salmo salar</i>); Otter (<i>Lutra lutra</i>); Killarney Fern (<i>Trichomanes speciosum</i>); Nore Freshwater Pearl Mussel (<i>Margaritifera durrovensis</i>)	This SAC runs through the area of Muine Bheag / Royal Oak and continues downstream as far as Creadun Head in Waterford. The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, over-grazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel (<i>Prunus laurocerasus</i>) and Rhododendron (<i>Rhododendron ponticum</i>). The water quality of the site remains vulnerable. Good quality water is necessary to maintain the populations of the Annex II animal species listed above. Good quality is dependent on controlling fertilisation of the grasslands, particularly along the Nore. It also requires that sewage be properly treated before discharge. Drainage activities in the catchment can lead to flash floods which can damage the many Annex II species present. Capital and maintenance dredging within the lower reaches of the system pose a threat to migrating fish species such as lamprey and had. Land reclamation also poses a threat to the salt meadows and the populations of legally protected species therein.

Table 2.2 European Sites which occur beyond 15 km of the Plan Boundary but are Hydrologically Connected to the Plan Area

Site Code	Site Name	County	Qualifying Features	Location and Site Vulnerability
002137	Lower River Suir cSAC	Kilkenny; Tipperary; Waterford	Atlantic Salt Meadows; Mediterranean Salt Meadows; Floating River Vegetation; Hydrophilous Tall Herb Communities; Old Oak Woodlands; Alluvial Forests*; Yew Woodlands*; Freshwater Pearl Mussel (Margaritifera margaritifera); White-clawed Crayfish (Austropotamobius pallipes); Sea Lamprey (Petromyzon marinus); Brook Lamprey (Lampetra planeri); River Lamprey (Lampetra fluviatilis); Twaite Shad (Alosa fallax); Atlantic Salmon (Salmo salar); Otter (Lutra lutra)	<p>The cSAC occurs approximately 42 km south-west of the LAP boundary (ca 67 km downstream). The main land uses at the site consist largely of agricultural activities which generates pressure on the site from grazing, silage production, fertilising and land reclamation. The grassland is intensively managed and the rivers are therefore vulnerable to pollution from run-off of fertilisers and slurry. Forestry is also seen as a lesser threat to the site. Both commercial and leisure fishing takes place on the rivers and is a main tourist attraction on stretches of the Suir and some of its tributaries – this is identified as a pressure on the site. Other recreational activities such as boating, golfing and walking can extend pressures on the SAC. Several industrial developments, which discharge into the river, border the site including three dairy related operations and a tannery.</p> <p>The Lower River Suir and associated cSAC designation meets the River Barrow and its associated cSAC designation to the east of Waterford City.</p>

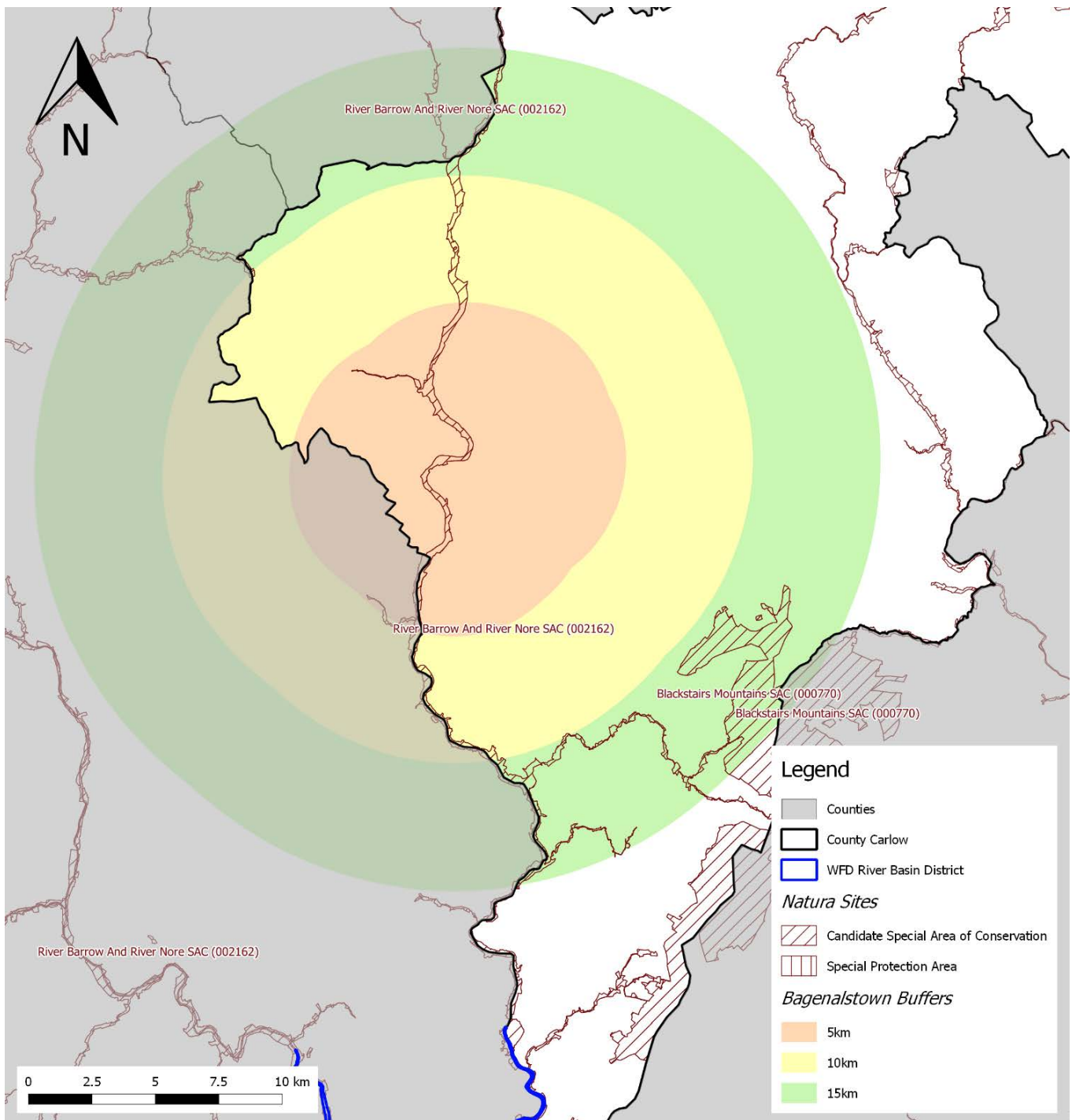


Figure 1 European sites within 15 km of the Plan Area

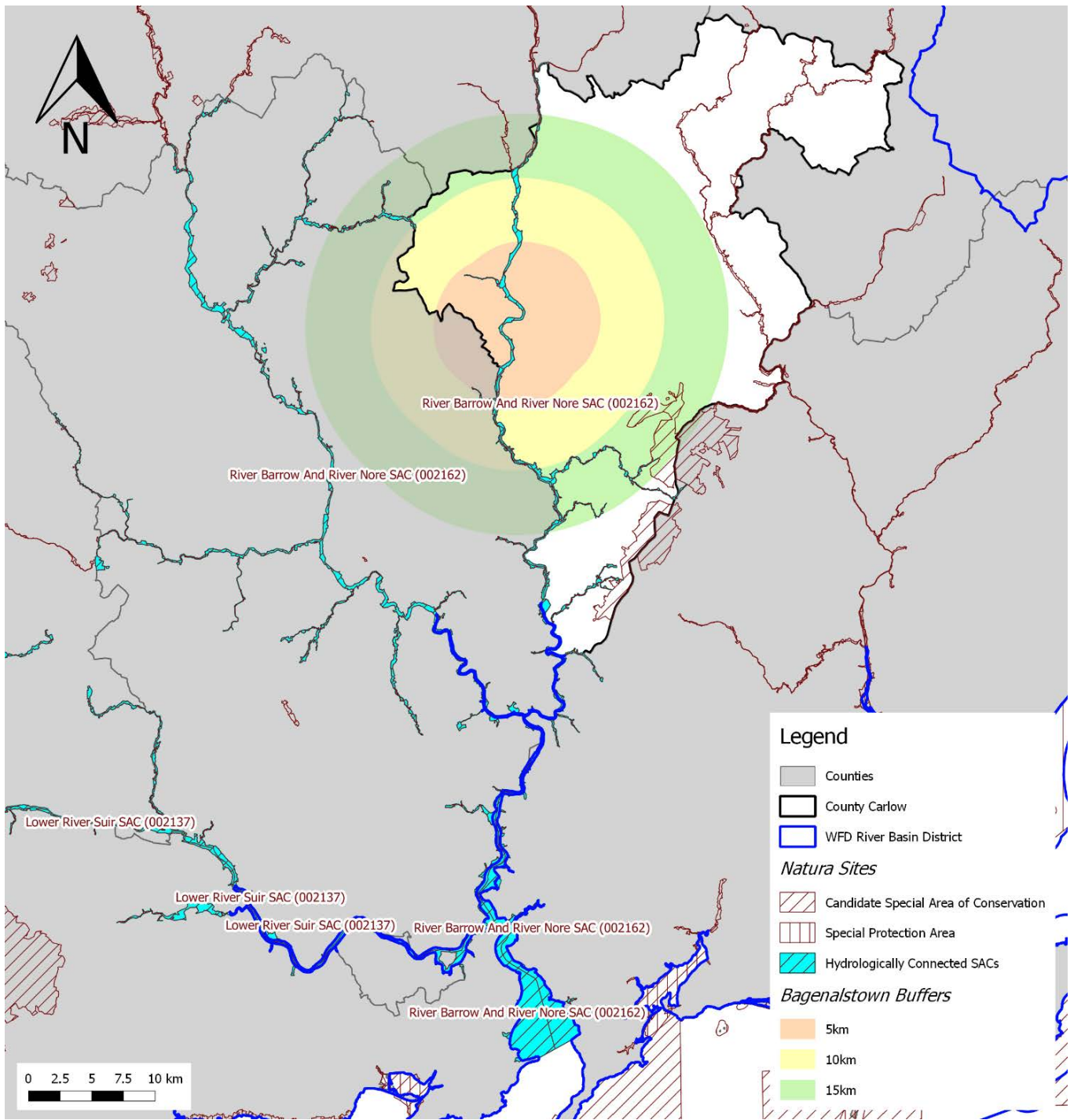


Figure 2 European sites occurring downstream but beyond 15 km

2.4 Assessment Criteria

2.4.1 Is the Plan Necessary to the Management of European Sites?

Under the Habitats Directive, Plans that are directly connected with or necessary to the management of a European site do not require AA. For this exception to apply, management is required to be interpreted narrowly as nature conservation management in the sense of Article 6(1) of the Habitats Directive. This refers to specific measures to address the ecological requirements of annexed habitats and species (and their habitats) present on a site(s). The relationship should be shown to be direct and not a by-product of the plan, even if this might result in positive or beneficial effects for a site(s).

The primary purpose of the Muine Bheag / Royal Oak LAP is not the nature conservation management of European sites but to provide for development within the Muine Bheag / Royal Oak area. Therefore, the LAP is not considered by the Habitats Directive to be directly connected with or necessary to the management of European designated sites.

2.4.2 Elements of the Plan with Potential to Give Rise to Significant Effects

This screening assessment process identifies whether the changes brought about by the LAP are likely to cause any direct, indirect or secondary impacts (either alone or in combination with other plans or projects) on the European Sites. During this assessment a number of factors were taken into account **including the sites' conservation objectives and known threats. The overall aim of the assessment is to attempt to predict the consequences that can be reasonably foreseen by implementation of a policy or objective.**

It should be noted that the policies and objectives that make up the Plan are strategic in nature and therefore the impact assessment can at best be generalised.

No projects giving rise to significant adverse direct, indirect, or secondary impacts on the integrity of any European Sites having regard to their conservation objectives, arising from their size or scale, shall be permitted on the basis of the Plan (either individually or in combination with other plans or projects). The following provisions could, in the absence of mitigation, potentially give rise to significant effects:

- Tourism related development;
- The development of cultural facilities in the town;
- Improvements to pedestrian access and connectivity throughout the Plan Area, particularly towards community, commercial and recreational lands and facilities;
- Recreational and tourism related development including proposed development of recreational and tourism infrastructure and facilities in the area, including the expansion and linkages of existing and new walkways and cycle ways within the town and its surroundings, and wider extent of the county and the development of the recreational potential of the River Barrow;
- The upgrading of roads and transport links;
- New industrial and local enterprise development;
- Wastewater disposal, water supply and surface water disposal developments and upgrades;
- The upgrading, maintenance and expansion of waste management facilities in the area;
- The development of renewable energy sources;
- The extension of telecommunications infrastructure; and
- Land use zoning objectives and associated provisions including those relating to: including those relating to Utilities, Enterprise and Employment, Existing Residential/Infill, Industry & Warehousing Existing Residential / Infill, Town Centre Activities and Amenity and Open Space.

2.4.3 Identification of Potential Likely Significant Effects

This section documents the final stage of the screening process. It has used the information collected on the sensitivity of each European site and describes any likely significant effects resulting from the implementation of the LAP. This assumes the absence of any controls, conditions, or mitigation measures. In determining the potential for significant effects, a number of factors have been taken into account. Firstly, the sensitivity and reported threats to the European site. Secondly, the individual elements of the Plan and the potential effect they may cause on the site were considered. The elements of the Plan with potential to cause adverse impacts on European sites is presented in Table 2.3 below.

Sites are screened out based on one or a combination of the following criteria:

- where it can be shown that there are no hydrological links between activities in Muine Bheag / Royal Oak and the site to be screened;
- where the site is located at such a distance from Muine Bheag / Royal Oak that effects are not foreseen;
- where it is that known threats or vulnerabilities at a site cannot be linked to potential effects that may arise from implementation of the Plan.

The screening of individual European sites within 15km of Muine Bheag / Royal Oak is presented in

Table 2.4 below (sites sorted by distance from the LAP boundary) and screening of those European site which occur outside 15 km of the LAP boundary are presented in Table 2.5.

Table 2.3 Elements of the Plan and the Potential for Significant Effects on European Sites

Element of the Plan	Potential effects
Provisions relating to tourism and cultural heritage development including: <u>Policies in relation to Tourism</u> EC 13 LU 6 TP 6 <u>Objectives in relation to Tourism</u> TO 1 TO 4 <u>Policies in relation to Cultural facilities</u> HR 6	The provision for the expansion of tourism and associated infrastructure may potentially lead to the run-off of silt and other harmful pollutants to watercourse in the town and its environs. This may lead to adverse impacts on those water dependant European sites which occur downstream of the town. Development along the rivers may also potentially lead to disturbance to those habitats and species for which SAC's in the area that are designated. This provision may potentially lead to: <ul style="list-style-type: none"> • Changes in indicators of conservation value (water quality) • Disturbance of key species and habitats
Provisions relating to improvements to pedestrian access and connectivity throughout the Plan Area, particularly towards community, commercial and recreational lands and facilities, including: <u>Policies in relation to Land Uses</u> LUO 1 <u>Objectives in relation to Streets and Movement</u> SMO 3 ² <u>Policies in relation to Public Space and Public Realm</u> PR 2 <u>Policies in relation to Transport</u> TP 2	Works to the pedestrian network in the town may potentially lead to the run-off of silt and other harmful pollutants to watercourse within the town. This may potentially lead to adverse impacts on water dependant European sites downstream of the Plan. Development along the rivers may also potentially lead to disturbance to those habitats and species for which SACs in the area are designated. This provision may potentially lead to: <ul style="list-style-type: none"> • Changes in key indicators of conservation value (water quality) • Disturbance of key species and habitats
Proposed development and maintenance of new and existing recreational and tourism infrastructure and facilities in the area, including the expansion and linkages of existing and new walkways and cycle ways within the town and its surroundings, and wider extent of the county	The provision to develop recreational facilities and areas in the town may potentially lead to the run-off of silt and other harmful pollutants to the watercourse within the town. This may lead to adverse impacts on those waters.

² Note: Objective SMO 3 has been subject to change, resulting from the mitigation process, in order to comply with environmental considerations.

Element of the Plan	Potential effects
<p><u>Policies in relation to Land Uses</u> LU 8³</p> <p><u>Policies in relation to Streets and Movement</u> SM 3 SM 4⁴</p> <p><u>Policies in relation to Sports, Recreation and Play</u> SP 1 SP 2</p> <p><u>Policies in relation to Recreational Potential of the River Barrow</u> RC 1 RC 2⁵ RC 3</p> <p><u>Policies in relation to Green Infrastructure</u> HR 17</p> <p><u>Built and Natural Heritage Objectives</u> HO 6</p>	<p>Recreational area works may also potentially lead to the disturbance to those habitats and species for which SACs in the area are designated.</p> <p>This provision may potentially lead to:</p> <ul style="list-style-type: none"> • Changes in indicators of conservation value (water quality) • Disturbance to key species and habitats
<p>The upgrading of roads and transport links</p> <p><u>Objectives in relation to Public Spaces and Public Realm</u> PRO 1</p> <p><u>Objectives in relation to Transport Infrastructure</u> TO 4 TO 5</p>	<p>Roads and transport upgrade works in the area may potentially lead to the run-off of silt and other harmful pollutants into the watercourse in the town, potentially leading to adverse impacts on those water dependant European sites which occur downstream of the town.</p> <p>Roads and transport upgrade works may also potentially lead to the disturbance of habitats and species for which SACs in the area are designated.</p> <p>This provision may potentially lead to:</p> <ul style="list-style-type: none"> • Changes in indicators of conservation value (water quality) • Disturbance to key species and habitats
<p>New industrial development and Local Enterprise</p> <p><u>Economic Policies for Muine Bheag / Royal Oak</u> EC 2</p> <p><u>Economic Objectives for Muine Bheag / Royal Oak</u> ECO 1</p>	<p>The provision for industrial developments may potentially lead to the run-off of silt and other harmful pollutants to watercourse in the town and its environs. This may lead to adverse impacts on those water dependant European sites which occur downstream of the town.</p> <p>Development along the rivers may also potentially lead to disturbance to those habitats and species for which SACs in the area are designated.</p> <p>This provision may potentially lead to:</p> <ul style="list-style-type: none"> • Changes in indicators of conservation value (water quality) • Disturbance of key species and habitats
<p>Wastewater disposal, water supply and surface water disposal developments and upgrades</p> <p><u>Policies in relation to Water Supply and Quality</u> WSP 3</p> <p><u>Objectives relating to Water Supply and Quality</u> WSO 2 WSO 7 WSO 9</p> <p><u>Policies in relation to Waste Water</u> WW 5</p> <p><u>Objectives in relation to Waste Water</u> WVO 1 WVO 2</p>	<p>Works to the water supply and wastewater treatment facilities within the town may potentially lead to the run-off of silt and other harmful pollutants to watercourses within the town. This may potentially lead to adverse impacts on water dependant European sites which occur downstream of the town.</p> <p>Development along the rivers may also potentially lead to disturbance to those habitats and species for which SACs in the area are designated.</p> <p>This provision may potentially lead to:</p> <ul style="list-style-type: none"> • Changes in indicators of conservation value (water quality) • Disturbance of key species and habitats
<p>The upgrading, maintenance and expansion of waste management facilities in the area</p> <p><u>Policies in relation to Waste Management</u> WMP 3</p>	<p>Works to waste management facilities within the town may potentially lead to the run-off of silt and other harmful pollutants to watercourses within the town. This may potentially lead to adverse impacts on water dependant European sites which occur downstream of the town.</p>

³ Note: Objective LU 8 has been subject to change, resulting from the mitigation process, in order to comply with environmental considerations.

⁴ Note: Objective SM 4 has been subject to change, resulting from the mitigation process, in order to comply with environmental considerations.

⁵ Note: Objective RC 2 has been subject to change, resulting from the mitigation process, in order to comply with environmental considerations.

Element of the Plan	Potential effects
	<p>This provision may potentially lead to:</p> <ul style="list-style-type: none"> • Changes in indicators of conservation value (water quality)
<p>The development of renewable energy sources</p> <p><u>Economic policies for Muine Bheag / Royal Oak</u> EC 6 <u>Policies in relation to Energy and Communications</u> ECP 1 <u>Objectives in relation to Energy and Communications</u> ECO 4</p>	<p>Renewable energy development in the town may potentially lead to the run-off of silt and other harmful pollutants into the watercourse in the town, potentially leading to adverse impacts on those water dependant European sites which occur downstream of the town.</p> <p>Renewable energy works may also potentially lead to the disturbance of habitats and species for which SACs in the area are designated.</p> <p>This provision may potentially lead to:</p> <ul style="list-style-type: none"> • Changes in indicators of conservation value (water quality) • Disturbance to key species and habitats
<p>The extension of energy and communications infrastructure</p> <p><u>Policies in relation to Energy and Communications</u> ECP 1 <u>Objectives in relation to Energy and Communications</u> ECO 1 ECO 2 ECO 6</p>	<p>The development of telecommunications infrastructure in the environs of the town may potentially lead to the run-off of silt and other harmful pollutants to the watercourse within the town. This may lead to adverse impacts on those water dependant European sites downstream of the town.</p> <p>Telecommunication works may also potentially lead to the disturbance of habitats and species for which SACs in the area are designated.</p> <p>This provision may potentially lead to:</p> <ul style="list-style-type: none"> • Changes in indicators of conservation value (water quality) • Disturbance to key species and habitats
<p>Land use zoning objectives and associated provisions including those relating to: including those relating to Utilities, Enterprise and Employment, Existing Residential/Infill, Industry & Warehousing Existing Residential / Infill, Town Centre Activities and Amenity and Open Space</p>	<p>New development throughout the Plan Area may potentially lead to the potential run-off of silt and / or other harmful pollutants to watercourse within the Plan Area. The provisions for development may potentially lead to adverse impacts on those European sites which occur downstream of the Plan Area.</p> <p>This provision may potentially lead to:</p> <ul style="list-style-type: none"> • Changes in indicators of conservation value (water quality) <p>In addition, there are a number of overlaps between the area which is designated as cSAC and existing land use zoning objectives. If unmitigated, such overlaps could result in the full range of effects including:</p> <ul style="list-style-type: none"> • Loss / Reduction of Habitat Area • Disturbance to Key Species • Habitat / Species Fragmentation • Reduction in Species Density • Changes in Key Indicators of Conservation Value

Table 2.4 Screening of European Sites within 15 km of the LAP Boundary

Site Name	Potential for likely significant effects	Stage 2 Appropriate Assessment required
Blackstairs Mountains cSAC	Blackstairs Mountains cSAC occurs ca 10.5km south-east of the LAP boundary. Blackstairs Mountain SAC is designated for its Wet Heath and Dry Heath. Given that the site is not directly hydrologically connected to Muine Bheag / Royal Oak and the QIs of the cSAC, adverse impacts are not foreseen. No pathways for effects.	No
River Barrow and River Nore cSAC	The River Barrow and River Nore SAC runs through the Muine Bheag / Royal Oak area and continues downstream as far as Creadun Head in Waterford. The River Barrow and River Nore SAC is directly hydrologically linked to Muine Bheag / Royal Oak and is designated for a wide variety of habitats and species due to the extent of the site. Given that the LAP is directly linked to the SAC it is deemed that these habitats and species may come under influence from the directions outlined in the LAP. Taking a precautionary approach Stage 2 AA is required to be undertaken in order to ensure potential effects are addressed.	Yes

Table 2.5 Screening of European Sites which occur outside 15 km of the LAP Boundary but are Hydrologically Linked to the LAP Boundary

Site Name	Potential for likely significant effects	Stage 2 Appropriate Assessment required
Lower River Suir cSAC	Although lower River Suir is located ca 67 km downstream of the LAP boundary, impacts via hydrological links between the Plan area and the site cannot be ruled out at this stage and taking a precautionary approach Stage 2 AA is required to be undertaken in order to ensure potential effects are addressed.	Yes

2.5 Other Plans and Programmes

Article 6(3) of the Habitats Directive requires an assessment of a plan or project to consider other plans or programmes that might, in combinations with the plan or project, have the potential to adversely impact upon European Sites. Table 2.6 outlines plans or projects that may interact with the LAP to cause in-combination effects to European sites. The plans or projects are listed according to a spatial hierarchy of International, National, Regional/Local Projects and Plans.

Given the uncertainties that exist with regard to the scale and location of developments facilitated by the LAP, it is recognised that the identification of cumulative impacts is limited and that the assessment of in-combination effects will need to be undertaken in a more comprehensive manner at the project-level.

Table 2.6 Plans & Projects Likely to Cause In-Combination Effects

Directive	Purpose	Interactions resulting in Cumulative Impacts
International		
EU Water Framework Directive (2000/60/EC)	Objectives seek to maintain and enhance the quality of all surface waters in the EU.	No risk of likely significant in-combination effects will result as the primary purpose of the Directive is to improve environmental quality.
EU Freshwater Fish Directive (78/659/EEC)	Objectives seek to protect those fresh water bodies identified by Member States as waters suitable for sustaining fish populations. For those waters it sets physical and chemical water quality objectives for salmonid waters and cyprinid waters.	No risk of likely significant in-combination effects will result as the primary purpose of the Directive is to improve environmental quality.
EU Groundwater Directive (2006/118/EC)	This directive establishes a regime, which sets underground water quality standards and introduces measures to prevent or limit inputs of pollutants into groundwater.	No risk of likely significant in-combination effects will result as the primary purpose of the Directive is to improve environmental quality.
EU Floods Directive (2007/60/EC)	The Floods Directive applies to river basins and coastal areas at risk of flooding. With trends such as climate change and increased domestic and economic development in flood risk zones, this poses a threat of flooding in coastal and river basin areas.	Potential in-combination impacts may arise where there is a requirement to provide for new infrastructure such as flood walls or flood defences. Avoidance on, or near protected areas should be implemented or where this is not possible, favouring infrastructure that carries a lower risk of damage to protected areas should be emphasised in the plan.
Nitrates Directive (91/676/EEC)	This Directive has the objective of reducing water pollution caused or induced by nitrates from agricultural sources and preventing further pollution.	No risk of likely significant in-combination effects will result as the primary purpose of the Directive is to improve environmental quality.
The Urban Wastewater Treatment Directive (91/271/EEC)	The primary objective is to protect the environment from the adverse effects of discharges of urban wastewater, by the provision of urban wastewater collecting systems (sewerage) and treatment plants for urban centres. The Directive also provides general rules for the sustainable disposal of sludge arising from wastewater treatment.	No risk of likely significant in-combination effects will result as the primary purpose of the Directive is to improve environmental quality.
Sewage Sludge Directive (86/278/EEC)	Objective is to encourage the appropriate use of sewage sludge in agriculture and to regulate its use in such a way as to prevent harmful effects on soil,	No risk of likely significant in-combination effects will result as the primary purpose of the Directive is to improve environmental quality.

Directive	Purpose	Interactions resulting in Cumulative Impacts
	vegetation, animals and man. To this end, it prohibits the use of untreated sludge on agricultural land unless it is injected or incorporated into the soil.	
The Integrated Pollution Prevention Control Directive (96/61/EC)	Objective is to achieve a high level of protection of the environment through measures to prevent or, where that is not practicable, to reduce emissions to air, water and land from industrial sources.	No risk of likely significant in-combination effects will result as the primary purpose of the Directive is to improve environmental quality.
National		
National Spatial Strategy 2002-2020	Objectives of the NSS are to achieve a better balance of social, economic and physical development across Ireland, supported by more effective planning.	Potential in-combination impacts may arise where there is a requirement to provide for new infrastructure. Provision of infrastructure may result in: <ul style="list-style-type: none"> • Habitat loss • Alteration of hydrology • Deterioration in water quality • Disturbance during construction / operation.
EirGrid Transmission Development Plan 2012 - 2022	This ten year plan presents those components of the overall long-term development of the transmission system where there is a high level of certainty. In addition, other likely areas where development projects may soon be required are also discussed.	Potential in-combination impacts may arise where there is a requirement to provide for new infrastructure. Provision of infrastructure may result in: <ul style="list-style-type: none"> • Habitat loss • Alteration of hydrology • Deterioration in water quality • Disturbance during construction / operation
Ireland's First National Cycle policy Framework (2009)	<ul style="list-style-type: none"> • Outlines objectives and actions aimed at developing a strong cycle network in Ireland • Sets out 19 specific objectives, and details the 109 actions, aimed at ensuring that a cycling culture is developed 	Potential for in-combination impacts may arise where there is a requirement to provide for new transport infrastructure, or increase capacity of existing infrastructure/services. Provisions for the development of transport infrastructure may potentially result in: <ul style="list-style-type: none"> • Habitat loss • Alteration of hydrology • Deterioration in water quality • Disturbance during construction / operation
Energy Policy framework 2007-2020, Governments White Paper	This policy states that the Government is committed to delivering a significant growth in renewable energy as a contribution to fuel diversity in power generation with a 2020 target of 33% electricity consumption	Potential in-combination impacts may arise where new wind energy infrastructure is being provided. Provision of infrastructure may result in: <ul style="list-style-type: none"> • Habitat loss • Alteration of hydrology • Deterioration in water quality • Disturbance during construction / operation
Irish Water's Water Services Strategic Plan 2015 and associated Proposed Capital Investment Plan 2014-2016	This Water Services Strategic Plan sets out strategic objectives for the delivery of water services over the next 25 years up to 2040. It details current and future challenges which affect the provision of water services and identifies the priorities to be tackled in the short and medium term.	Potential in-combination impacts may arise where there is a requirement to provide for new water and waste water infrastructure and capacity. Meeting additional potable water demands and waste water treatment demands arising from the proposed increase in population has the potential to adversely affect, in the case of abstractions from and effluent discharges to surface waters, the ecological status of surface waters and, in the case of groundwater abstractions, the quantitative status of groundwaters. Such demands would occur in-combination with those in adjoining counties. Adverse effects on the ecological status of surface waters and on the quantitative status of groundwaters would have the potential to impact upon protected species and habitats. Provision of infrastructure and increases in capacity may result in: <ul style="list-style-type: none"> • Habitat loss • Alteration of hydrology • Deterioration in water quality • Disturbance during construction / operation
Regional		
Regional Planning Guidelines For the South	Policy document which aims to direct the future growth of the South Eastern Area over the medium to long term and works	Potential in-combination impacts may arise where there is a requirement to provide for new infrastructure.

Directive	Purpose	Interactions resulting in Cumulative Impacts
Eastern Region 2010 – 2022.	to implement the strategic planning framework set out in the National Spatial Strategy (NSS)	Provision of infrastructure may result in: <ul style="list-style-type: none"> • Habitat loss • Alteration of hydrology • Deterioration in water quality • Disturbance during construction / operation
Transport Strategy for the Greater Dublin Area 2016-2035	The Strategy outlines transport development objectives for the Greater Dublin Area over a twenty year period.	Potential for in-combination impacts may arise where there is a requirement to provide for new transport infrastructure, or increase capacity of existing infrastructure/services. Provisions for the development of transport infrastructure may potentially result in: <ul style="list-style-type: none"> • Habitat loss • Alteration of hydrology • Deterioration in water quality • Disturbance during construction / operation
County		
Carlow County Development Plan (CDP) 2015-2021 Wexford CDP 2013-2019 Kilkenny CDP 2014 – 2020 Laois CDP 2011 – 2017 Kildare CDP 2011 – 2017 Wicklow CDP 2016 - 2022	Overall strategies for the proper planning and sustainable development of the administrative area of the relevant Local Authorities. Include provisions relating to housing, economic (including tourism), community, transport (including cycling) and infrastructural development.	Provision of infrastructure may result in: <ul style="list-style-type: none"> • Habitat loss • Alteration of hydrology • Deterioration in water quality • Disturbance during construction / operation
Local		
Tullow Local Area Plan (LAP) Ballinabranagh Raheendoran LAP Ballon LAP Borris LAP Carrickduff LAP Clonegal LAP Grabe Killerig LAP Hacketstown LAP Kildavin LAP Leighlinbridge LAP Palatine LAP Rathoe LAP Rathvilly LAP Tinnahinch LAP Tinryland LAP	Local Area Plans sets out policies and objectives to guide how and where development will take place over the lifetime of the Plan. It provides an integrated, coherent spatial framework to ensure the area is developed in an inclusive way which improves the quality of life for its citizens. Include provisions relating to housing, economic (including tourism), community, transport (including cycling) and infrastructural development.	Potential for in-combination impacts may arise where there is a requirement to provide for new transport infrastructure, or increase capacity of existing infrastructure/services. Provisions for the development of transport infrastructure may potentially result in: <ul style="list-style-type: none"> • Habitat loss • Alteration of hydrology • Deterioration in water quality • Disturbance during construction / operation Provision of infrastructure may result in: <ul style="list-style-type: none"> • Habitat loss • Alteration of hydrology • Deterioration in water quality Disturbance during construction / operation

2.6 Conclusions

The likely effects that could arise from the LAP have been examined in the context of a number of factors that could potentially affect the integrity of European Sites. On the basis of the findings of this Screening for AA, it is concluded that the LAP:

- is not directly connected with or necessary to the management of a European site; and
- may have significant effects on European Sites.

Therefore, applying the precautionary principle and in accordance with Article 6(3) of the Habitats Directive, a Stage 2 AA is required. That stage is set out in Section 3 of this report.

Section 3 Stage 2 Appropriate Assessment

3.1 Introduction

The main objective of this stage (Stage 2) in the AA is to determine whether the proposed Muine Bheag / Royal Oak LAP would result in significant adverse impacts on the integrity of any European site with respect to the site's structure, function, and/or conservation objectives.

The Stage 1 Screening presented above has identified two European Sites with potential to be affected by the proposed Muine Bheag / Royal Oak LAP (see Table 3.1). Therefore, taking a precautionary approach, Stage 2 AA is required. The potential adverse effects considered at this stage will either be effects occurring as a result of the implementation of the LAP alone or in-combination with other plans, programmes, and/or projects.

Detailed information relevant to the sites that has been reviewed to inform the AA includes the following:

- *NPWS Site Synopsis*
- *Natura 2000 Standard Data Form*
- *Conservation Objectives and supporting documents*

Table 3.1 European Sites Potentially Impacted upon by the Muine Bheag / Royal Oak LAP

SAC's	SPA's
Rivers with associated habitats and species including downstream aquatic ecological receptors	
<ul style="list-style-type: none"> - River Barrow and River Nore SAC - Lower River Suir SAC 	None

3.2 Potential Significant Effects

As outlined in the European Commission Environment DG document "*Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*", impacts that could potentially occur through the implementation of the Plan can be categorised under a number of headings:

- Loss / reduction of habitat area (e.g. due to the development of new projects)
- Disturbance to Key Species (e.g. increased public access to protected sites, or during the construction phase of infrastructure projects)
- Habitat or species fragmentation
- Reduction in species density
- Changes in key indicators of conservation value such as decrease in water quality / quantity (e.g. through inadequate wastewater treatment, run-off of pollutants during construction and operation of developments, agricultural runoff)

The LAP provides a framework for sustainable development within Muine Bheag / Royal Oak. The Plan also prescribes particular locations (site specific) of developments of infrastructure. Overall, the Plan underpins the development of housing, tourism, communities and the town centre with supporting infrastructure and services within the Muine Bheag / Royal Oak area including those related to transport, water, energy, and communication infrastructure.

3.2.1 Reduction of Habitat Area

There is a potential that the designated site within the functional area of the Plan may be adversely affected through the implementation of the Plan. Development either in isolation or in combination with

other similar developments can potentially lead to significant adverse impacts on the environment with long term consequences. The development of different land uses and the upgrading of networks could lead to loss of habitats if inappropriately located within the boundaries of the River Barrow and River Nore cSAC. Indirectly, habitat loss may also occur through draining of development lands adjacent to the cSAC that support wetlands.

Although the LAP is overlapping with a European Site, due to the nature of the likely developments that may arise, direct or indirect habitat loss resulting from the implementation of the Plan is not foreseen.

There are a number of overlaps between the area which is designated as cSAC and existing land use zoning objectives. If unmitigated, such overlaps could result in the full range of effects including:

- Loss / Reduction of Habitat Area
- Disturbance to Key Species
- Habitat / Species Fragmentation
- Reduction in Species Density
- Changes in Key Indicators of Conservation Value

A constrained land use zoning objective for European Sites has been integrated into the LAP which mitigates this potential (mitigation is detailed under Section 4 below).

3.2.2 Fragmentation

Habitat and species fragmentation can occur through the breaking up of or loss of habitats resulting in interference with existing ecological features. Fragmentation can also result from impediments to the natural movements of species. This is relevant where important corridors for movement or migration are likely to be disrupted such as along river corridors when construction introduces a barrier to the free movement of species from one area of habitat to another.

Installation of linear infrastructure e.g. roads and other transportation links, water and wastewater pipelines, can have a negative impact over a wide distance where such infrastructure crosses designated Sites.

3.2.3 Disturbance to Key Species

Disturbance to species supported by a European Site is likely to occur where there is an increase in activity levels from recreation and amenity or from developments within or adjacent to designated areas. Sources of disturbance include noise, vibration, light, construction and operation activities or other sources of disturbance arising from recreation and amenity or from the inappropriate timing of works.

The Plan supports the development of infrastructural development and the development of tourism and recreation. These projects have the potential to cause disturbance impacts to key species if located in proximity to relevant European sites.

The European sites potentially affected include the River Barrow and River Nore cSAC and Lower River Suir cSAC, both of which have Otter designated as qualifying interests. Otter are vulnerable to disturbance due to construction works, aquaculture practices, and increased amenity uses along waterways arising from proposed developments as part of the Plan. Other species sensitive to disturbance are included on Table 3.2 below.

Table 3.2: European sites and QIs vulnerable to disturbance to key species from the implementation of the Plan

Site Code	Site Name	QI (s) Key Species potentially affected by disturbance
2162	River Barrow and River Nore cSAC	Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>); Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>); White-clawed Crayfish (<i>Austropotamobius pallipes</i>); Sea Lamprey (<i>Petromyzon marinus</i>);

Site Code	Site Name	QI (s) Key Species potentially affected by disturbance
		Brook Lamprey (<i>Lampetra planeri</i>); River Lamprey (<i>Lampetra fluviatilis</i>); Twaite Shad (<i>Alosa fallax</i>); Atlantic Salmon (<i>Salmo salar</i>); Otter (<i>Lutra lutra</i>); Killarney Fern (<i>Trichomanes speciosum</i>); Nore Freshwater Pearl Mussel (<i>Margaritifera durrovensis</i>)
2137	Lower River Suir cSAC	Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>); White-clawed Crayfish (<i>Austropotamobius pallipes</i>); Sea Lamprey (<i>Petromyzon marinus</i>); Brook Lamprey (<i>Lampetra planeri</i>); River Lamprey (<i>Lampetra fluviatilis</i>); Twaite Shad (<i>Alosa fallax</i>); Atlantic Salmon (<i>Salmo salar</i>); Otter (<i>Lutra lutra</i>)

3.2.4 Changes of Indicators of Conservation Value

Key indicators of conservation value for the two sites under consideration include surface water quality and quantity. Effects to these sites may occur due to the hydrological connection between the sites and the Plan Area. Implementation of the LAP could result in alterations to the hydrological regime or physical environment of the sites due to drainage, alteration of flow regime, and discharges of pollutants to watercourses.

Discharges of waste water or storm water runoff from the Plan Area to the River Barrow could potentially impact on downstream water quality within those sites occurring downstream of the Plan Area. Cumulative impacts through waste water discharges from the wider county and surrounding counties could also potentially affect these sites.

3.3 Conservation Objectives

The Habitats Directive requires the focus of the assessment at this stage to be on the integrity of the site as indicated by its Conservation Objectives. It is an aim of NPWS to draw up conservation management plans for all areas designated for nature conservation. These plans will, among other things, set clear objectives for the conservation of the features of interest within a site. No Conservation Management Plans have been prepared for any of those sites considered in Stage 2 of this appropriate assessment.

Site-specific conservation objectives (SSCOs) have been prepared for a number of European sites. These detailed SSCO aim to define favourable conservation condition for the qualifying habitats and species at that site by setting targets for appropriate attributes which define the character habitat. The maintenance of the favourable condition for these habitats and species at the site level will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a species can be described as being achieved when: 'population data on the species concerned indicate that it is maintaining itself, and the natural range of the species is neither being reduced or likely to be reduced for the foreseeable future, and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.'

Favourable conservation status of a habitat can be described as being achieved when: 'its natural range, and area it covers within that range, is stable or increasing, and the ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and the conservation status of its typical species is favourable.'

Generic Conservation Objectives for cSACs have been provided as follows:

- *To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.*

One generic Conservation Objective has been provided for SPAs as follows:

- *To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.*

SSCOs have been prepared for the River Barrow and River Nore SAC considered in Stage 2 of this assessment.

Section 4 Mitigation Measures

4.1 Introduction

Where it cannot be demonstrated that there will be no adverse effects from the implementation of the LAP, mitigation measures have been devised. The policies and objectives outlined below have been developed with input from the SEA and AA process in order to mitigate against identified potential impacts. The measures that are recommended are compatible with those proposed by the SEA environmental report and with other relevant plans and programmes e.g. Programme of Measures proposed by the River Basin Management Plan.

Based on the types of impacts identified above, the mitigation measures presented below are split into **two main categories, 'Measures to Protect Habitats and Species' and 'Measures to Protect Water Quality'**. The Muine Bheag / Royal Oak LAP is a lower tier Plan of the Carlow County Development Plan (CCDP), therefore

The Muine Bheag / Royal Oak LAP sits within a hierarchy of development plans in County Carlow and environmental protection measures included in the Carlow County Development Plan must be adhered to by applications for development under the LAP.

4.2 Measures to Protect Habitats and Species

As outlined in Section 3.2 of this assessment a number of significant effects that could impact on habitats and species have been identified. Following mitigation, no zoning or specific projects are proposed by the Plan would be likely to result in direct impacts on any European Site.

Measures have been included in the policies and objectives of the Plan that will ensure these impacts are avoided.

The Appropriate Assessment and Strategic Environmental Assessment of the Plan have facilitated the integration of a number of policies and objectives into the Plan to strengthen the protection afforded to European Sites.

Amongst other things, these policies and objectives will ensure that Appropriate Assessments are carried out where development projects are likely to have significant effects on designated European Sites. This will ensure that project level effects, which cannot be predicted at the Plan level, will be mitigated and effects to protected sites through inappropriate development will be avoided.

Objectives and policies within the Muine Bheag / Royal Oak LAP 2017-2023 that will act to protect European Sites include the following:

Policies Relating to Flooding

Policy FL 2

To have regard to the findings and recommendations of the current Strategic Flood Risk Assessment carried out for Muine Bheag / Royal Oak Local Area Plan area.

Policy FL 3

To implement the use of the sequential approach and application of the Justification Tests for Development Management and Development Plans, during the period of this plan, as set out in the Flood Risk Management Guidelines as follows: 1) Avoid development that will be at risk of flooding or that will increase the flooding risk elsewhere, where possible; 2) Substitute less vulnerable uses, where avoidance is not possible; and 3) Justify, mitigate and manage the risk, where avoidance and substitution are not possible. Development should only be permitted in areas at risk of flooding when there are no alternative, reasonable sites available in areas at lower risk that also meet the objectives of proper planning and sustainable development.

Policies Relating to Recreational Potential

Policy RC 1

To facilitate where practicable the provision of cycle-ways / walkways along the extent of the River Barrow and Canal in co-operation with landowners, Waterways Ireland and government departments. Any proposed cycling or walking routes along the River and Canal will be such to Appropriate Assessment in accordance with the Habitats Directive.

Policy RC 3

To continue to op-operate with community ad sports bodies in the development of the River Barrow and Canal for recreational uses. Projects shall have regard to the requirement for Appropriate Assessment in accordance with the Habitats Directive.

Policies Relating to Waste Management

Policy WMP 2

To safeguard the environment by seeking to ensure that residual waste is disposed of appropriately.

Objectives Relating to Waste Management

Objective WMO 2

To assess the feasibility of additional recycling, including composting facilities in the town or environs at a location(s) that will not adversely affect residential amenity or environmental quality.

Policies Relating to Designated Sites

Policy HR 9

To contribute, as appropriate, towards the protection of designated ecological sites including candidate Special Areas of Conservation (cSACs) and Special Protection Areas (SPAs); Wildlife Sites (including proposed Natural Heritage Areas); and Flora Protection Order sites.

Policy HR 10

To contribute towards compliance with relevant EU Environmental Directives and applicable National Legislation, Policies, Plans and Guidelines, including the following and any updated/superseding documents:

- EU Directives, including the Habitats Directive (92/43/EEC, as amended)^[1], the Birds Directive (2009/147/EC)^[2], the Environmental Liability Directive (2004/35/EC)^[3], the Environmental Impact Assessment Directive (85/337/EEC, as amended), the Water Framework Directive (2000/60/EC) and the Strategic Environmental Assessment Directive (2001/42/EC).
- National legislation, including the Wildlife Act 1976^[4], the European Communities (Environmental Impact Assessment) Regulations 1989 (SI No. 349 of 1989) (as amended), the Wildlife (Amendment) Act 2000, the European Union (Water Policy) Regulations 2003 (as amended), the Planning and Development Act 2000 (as amended), the European Communities (Birds and Natural Habitats) Regulations 2011 (SI No. 477 of 2011) and the European Communities (Environmental Liability) Regulations 2008^[5].
- National policy guidelines (including any clarifying Circulars or superseding versions of same), including the Landscape and Landscape Assessment Draft Guidelines 2000, the Environmental Impact Assessment Sub-Threshold Development Guidelines 2003, Strategic Environmental Assessment Guidelines 2004 and the Appropriate Assessment Guidance 2010.
- Catchment and water resource management Plans, including the relevant River Basin Management Plan.
- Biodiversity Plans and guidelines, including Actions for Biodiversity 2011-2016: Ireland's 2nd National Biodiversity Plan (including any superseding version of same).
- Freshwater Pearl Mussel Regulations (S.I. 296 of 2009) (including any associated designated areas or management plans).
- Ireland's Environment 2014 (EPA, 2014, including any superseding versions of same), and to make provision where appropriate to address the report's goals and challenges.

^[1] Including Annex I habitats, Annex II species and their habitats and Annex IV species and their breeding sites and resting places (wherever they occur).

^[2] Including Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur).

^[3] Including protected species and natural habitats.

^[4] Including species of flora and fauna and their key habitats.

^[5] Including protected species and natural habitats.

Policy HR 11

That all projects and plans arising from this plan⁶ (including any associated improvement works or associated infrastructure) will be screened for the need to undertake Appropriate Assessment under Article 6 of the Habitats Directive. A plan or project will only be authorised after the competent authority has ascertained, based on scientific evidence, Screening for Appropriate Assessment, and a Stage 2 Appropriate Assessment where necessary, that:

(a) The Plan or project will not give rise to significant adverse direct, indirect or secondary effects on the integrity of any European site (either individually or in combination with other plans or projects); or

(b) The Plan or project will have significant adverse effects on the integrity of any European site (that does not host a priority natural habitat type/and or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000; or

© The Plan or project will have a significant adverse effect on the integrity of any European site (that hosts a natural habitat type and/or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons for overriding public interest, restricted to reasons of human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000.

Policy HR 12a

Not to permit projects giving rise to significant cumulative, direct, indirect or secondary impacts on Natura 2000 sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other on the basis of this plan (either individually or in combination with other plans or projects^[6]).

Policy HR 13

To facilitate the conservation, protection and enhancement of the River Barrow including the adjacent wetlands and associated habitats and to ensure that development does not significantly adversely affect conservation values.

Policy HR 14

To seek the submission of an Ecological Impact Assessment for all development which may have a significant impact on the river and riparian habitats. This assessment should where appropriate suggest a minimum buffer of undisturbed vegetation to be retained to mitigate against pollution risks, reduce flooding potential, maintain habitats and provide an ecological corridor. The buffer zone shall, where possible be maintained free of development and hard surfaces. The assessment shall address protected species i.e. bats, otters including the requirement for derogation licences together with the cumulative impact of the proposed development.

Policy HR 15

To ensure that development does not have a significant adverse impact on plant species, animals and birds listed in the Flora Protection Order, Wildlife Act 1976 as amended, those listed in Annex IV of the Habitats Directive and those listed in Annex I of the Birds Directive.

Policies Relating to Green Infrastructure

Policy HR 17

To seek to contribute towards the protection and enhancement of biodiversity and ecological connectivity, including trees, hedgerows, rivers, streams, other landscape features and associated wildlife where these form part of the ecological network and/or may be considered as ecological corridors or stepping stones in the context of Article 10 of the Habitats Directive.

Objective HR 20

To promote the protection of trees, in particular native and broadleaf species, which are of conservation and/or amenity value. Development that requires the felling of mature trees of species interest will be discouraged.

⁶ Such projects include but are not limited to those relating to: agriculture; amenity and recreation; contaminated sites; electricity transmission; flood alleviation and prevention; forestry; mineral extraction; renewable energy projects; roads; telecommunications; tourism; wastewater and discharges; and water supply and abstraction.

Objective HR 21

To promote the protection and [reservation of existing hedgerows. Where appropriate encourage planting of native hedgerow species

Objective HR 22

To contribute towards the protection of non-designated habitats and species which are of local biodiversity significance as appropriate.

Policies Relating to Invasive and Non-Native Species

Objective HR 23

To support as appropriate the National Parks and Wildlife Service's efforts to seek to control the spread of non-native species on land and water and where appropriate seek the submission of an invasive species management plan.

Policies Relating to Tourism

Policy TP 7

To seek to manage any increase in visitor numbers to avoid significant effects including loss of habitat and disturbance, any projects are a suitable distance from the water's edge and legislation relating to habitats, species, connectivity and designated sites is complied with.

Policies Relating to the Landscape

Policy L1

To contribute towards the protection of county and local level landscape designations from incompatible developments. Proposals for development that have the potential to significantly adversely impact upon these designations shall be accompanied by an assessment of the potential landscape and visual impacts of the proposed development - demonstrating that landscape impacts have been anticipated and avoided to a level consistent with the sensitivity of the landscape and the nature of the designation.

As there are a number of overlaps between the area which is designated as cSAC and existing land use zoning objectives, Policy HR 11B was integrated into the Plan in order to require applications for development within a constrained land use zoning objective area for the European Site to undergo Appropriate Assessment and demonstrate that the proposal will not give rise to any effect on the European Site in view of its qualification features and conservation objectives. This benefits the protection of the River Barrow and River Nore cSAC.

Policy HR 11b

HR 11B: To require applications for development within the constrained land use zoning objective for the Natura 2000 site (Map 14) to undergo Appropriate Assessment and demonstrate that the proposal will not give rise to any effect on the Natura 2000 site in view of its qualification features and conservation objectives.

4.3 Measures to Protect Water Quality

Section 3.2 of this assessment identified that impacts on water quality to a number of downstream European Sites have potential to arise through, discharges of wastewater, and possible discharges of sediment and other pollutants from future development and associated works.

In addition, any newly proposed or upgraded wastewater treatment plants should fully comply with all Urban Waste Water Regulations requirements 2001 – 2004, and should furthermore comply with all wastewater discharge authorisation requirements as per 2007 Regulations and Urban Wastewater Regulations 2001.

Policies and objectives within the Plan that will act to protect the water quality and quantity with those European Sites against the potential impacts identified include the following:

Policies Relating to Water Supply and Quality

Policy WSP 1

To contribute towards the protection of existing and potential water resources, and their use by humans and wildlife, including rivers, streams, groundwater and associated habitats and species in accordance with the requirements and guidance in the EU Water Framework Directive 2000 (2000/60/EC), the European Union (Water Policy) Regulations 2003 (as amended), the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009), the Groundwater Directive 2006/118/EC and the European Communities Environmental Objectives (groundwater) Regulations, 2010 (S.I. No. 9 of 2010) and other relevant EU Directives, including associated national legislation and policy guidance (including any superseding versions of same). To also support the application and implementation of a catchment planning and management approach to development and conservation, including the implementation of Sustainable Drainage System techniques for new development.

Policy WSP 2

To support the implementation of the relevant recommendations and measures as outlined in the relevant River Basin Management Plan, and associated Programmes of Measures, or any such plans that may supersede same during the lifetime of the plan, as well as relevant recommendations contained in the Water Quality in Ireland 2010 – 2012 (EPA, 2015, and any updated/superseding document). Proposals for development would not have an unacceptable impact on the water environment, including surface waters, groundwater quality and quantity, river corridors and associated woodlands. Also to have cognisance of, where relevant, the EU's Common Implementation Strategy Guidance Document No. 20 which provides guidance on exemptions to the environmental objectives of the Water Framework Directive.

Policy WSP 8

To protect surface water and ground water resources and their associated habitats and species including fisheries and in particular Annex II listed species.

Objective Relating to Water Supply and Quality

Objective WSO 8

To ensure that all proposals for the development of an upgrade to the water supply system will be screened for Appropriate Assessment in accordance with Article 6(3) of the Habitats Directive and where significant impacts are identified, a Natura Impact Statement will be prepared.

Policy Relating to Waste Water

Policy WW 4

To ensure the changeover from septic tanks to mains connections in all cases where this is feasible, and that all new developments utilise and connect to the existing wastewater infrastructure. The provision of individual septic tanks and treatment plants within the Plan boundary will be strongly discouraged to minimise the risk of groundwater pollution. Where such facilities are permitted, full compliance with the 2009 EPA Code of Practice - Code of Practice Wastewater treatment and Disposal Systems serving single houses (p.e. ≤ 10), is required.

Objective Relating to Waste Water

Objective WWO 3

To ensure that any proposals for the development and /or upgrade of the Muine Bheag waste water treatment plant and waste water network will be subject to Appropriate Assessment in accordance with Article 6(3) and 6(4) of the EU Habitats Directive.

Objective Relating to Flooding

Objective FLO 4

To protect water bodies and watercourses within the plan area from inappropriate development, including the river, canal, streams, associated undeveloped riparian strips, wetlands and natural floodplains. A 10 metre strip on either side of such channel will be retained, where required, to facilitate access thereto. In addition, promote the sustainable management and uses of water bodies and avoid culverting or realignment of these features.

Policy Relating to Soil

Policy P 5

To ensure that adequate soil protection measures are undertaken where appropriate. Appropriate investigations shall be carried out into the nature of any soil and groundwater contamination and the risks associated with site development works.

4.4 Mitigation by amendments being made to Local Area Plan provisions

The AA and SEA processes facilitated the amendment of the Plan provisions including the following (recommended text which was inserted into the Plan is in **bold** and recommended deletions which were removed from the Plan are in ~~strikethrough~~):

LU 8: To **investigate the feasibility of** ~~encourage the development~~ **ing** of water-related activities, **subject to the requirements of the Habitats Directive**.

SM 4: To utilise existing features such as the River Barrow and canal tow path as the focus and basis for development walking routes connecting the town to its wider county context, **subject to the requirements of the Habitats Directive**.

SMO 3: To seek the rehabilitation of the existing footbridge at canal lock ~~and provide for a new footbridge over the canal at Hotel Street~~.

RC 2: To support the conservation ~~and development~~ of local angling waters and **investigate the feasibility of developing these waters and** associated infrastructure required to advance the sport in the town, **subject to the requirements of the Habitats Directive**.

Section 5 Conclusion

Stage 1 Screening and Stage 2 Appropriate Assessment of the Muine Bheag / Royal Oak Local Area Plan has been carried out. Implementation of the Plan, if unmitigated, has the potential to result in effects to the integrity of any European Sites.

The risks to the safeguarding and integrity of the qualifying interests and conservation objectives of the European Sites have been addressed by the inclusion of mitigation measures that will prioritise the avoidance of potential effects in the first place and mitigate effects where these cannot be avoided. In addition, all lower level plans and projects arising through the implementation of the Plan will themselves be subject to Appropriate Assessment when further details of design and location are known.

Having incorporated mitigation measures, it is considered that the Plan is not likely to have any significant adverse effect on the integrity of any European Sites⁷.

⁷ Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:

- a) no alternative solution available,
- b) imperative reasons of overriding public interest for the plan to proceed; and
- c) Adequate compensatory measures in place.



JBA
consulting

SFRA for the Muinebheag- Royal Oak Local Area Plan 2017-2023

Strategic Flood Risk Assessment

January 2017

CARLOW
COUNTY COUNCIL

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Contract

This report describes work commissioned by Fiona O' Neill, on behalf of Carlow County Council, by a letter dated 25th of February 2016. Carlow County Council's representative for the contract was Fiona O' Neill of Carlow County Council. Ross Bryant and Conor Quinlan of JBA Consulting carried out this work.

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Abbreviations

AEP	Annual Exceedance Probability
CFRAM	Catchment Flood Risk Assessment and Management
DoEHLG.....	Department of the Environment, Heritage and Local Government
EC	European Community
FRA	Flood Risk Assessment
LA.....	Local Authority
LAP	Local Area Plan
OPW	Office of Public Works
PFRA	Preliminary Flood Risk Assessment
SAC.....	Special Area of Conservation, protected under the EU Habitats Directive
SFRA	Strategic Flood Risk Assessment
SI.....	Site Investigation

1 Study Background

JBA Consulting was appointed by Carlow County Council to carry out the Strategic Flood Risk Assessment for the Muinebheag and Royal Oak Local Area Plan 2017-2023.

This report details the SFRA for this area and has been prepared in accordance with the requirements of the DoEHLG and OPW Planning Guidelines, The Planning System and Flood Risk Management; these guidelines were issued under the Planning and Development Act 2000, and recognise the significance of proper planning to manage flood risk.

1.1 Scope of Study

Under the "Planning System and Flood Risk Management" guidelines, the purpose for the FRA is detailed as being *"to provide a broad (wide area) assessment of all types of flood risk to inform strategic land-use planning decisions. SFRAs enable the LA to undertake the sequential approach, including the Justification Test, allocate appropriate sites for development and identify how flood risk can be reduced as part of the development plan process"*.

The Carlow County Development Plan 2015-2021 (CCDP) will be the key document for setting out a vision for the development of Muinebheag and Royal Oak during the plan period.

It is important that the LAP fulfils the requirements of the document "The Planning System and Flood Risk Management Guidelines for Planning Authorities" (OPW/DoEHLG, 2009) which states that flood risk management should be integrated into spatial planning policies at all levels to enhance certainty and clarity in the overall planning process.

In order to ensure that flood risk is integrated into the LAP, the main requirements of this document are to:

- Produce Flood Mapping.
- Prepare a Stage 2 - Flood Risk Assessment of Muinebheag and Royal Oak in particular in relation to location and type of zoning and land-use proposals.
- Prepare a Flood Risk Management Plan in compliance with OPW/DoEHLG – "The Planning System and Flood Risk Management –Guidelines for Planning Authorities (OPW/DoEHLG, 2009)" and Circular PL02/2014 (August 2014).
- Advise on zonings/land use-proposals, assess and report on any submissions received as part of both the preparation and the public consultation stage of the plan, as they relate to flood risk.

1.2 Report Structure

This study considers the development strategy that will form part of the Local Area Plan for Muinebheag & Royal Oak. The context of flood risk in Muinebheag & Royal Oak are considered with specific reference to the primary flood source, fluvial flooding, and secondary sources such as, pluvial, groundwater, sewer and artificial reservoirs.

A two stage assessment of flood risk was undertaken, as recommended in 'The Planning System and Flood Risk Management' guidelines, for the area that lies within the development boundary of the Local Area Plan. The first stage is to identify flood risk and is based primarily on the findings of the South Eastern Catchment Flood Risk Assessment and Management Study (SECFRAM). Historical records and recent events demonstrate that Muinebheag has a history of flooding in certain areas. The second stage and the main purpose of this SFRA report is to appraise the adequacy of existing information, to prepare an indicative flood zone map, based on available data, and to highlight potential development areas that require more detailed assessment on a site specific level.

Section 2 of this report provides an introduction to the study area and Section 3 discusses the concepts of flooding, Flood Zones and flood risk as they are incorporated into the Planning System and Flood Risk Management.

In Section 4 the available data related to flooding is summarised and appraised and outlines the sources of flooding to be considered, based on the review of available data.

Following this, Section 5 provides guidance and suggested approaches to managing flood risk to development; the contents of this section will be of particular use in informing the policies and objectives within the Local Area Plan.

In Section 6 the proposed zonings are reviewed, with specific responses to flood risk in relation to a number of key development sites within Muinebheag & Royal Oak.

Finally, triggers for the ongoing monitoring and future review of the SFRA are detailed in Section 7.

2 Muinebheag & Royal Oak Study Area

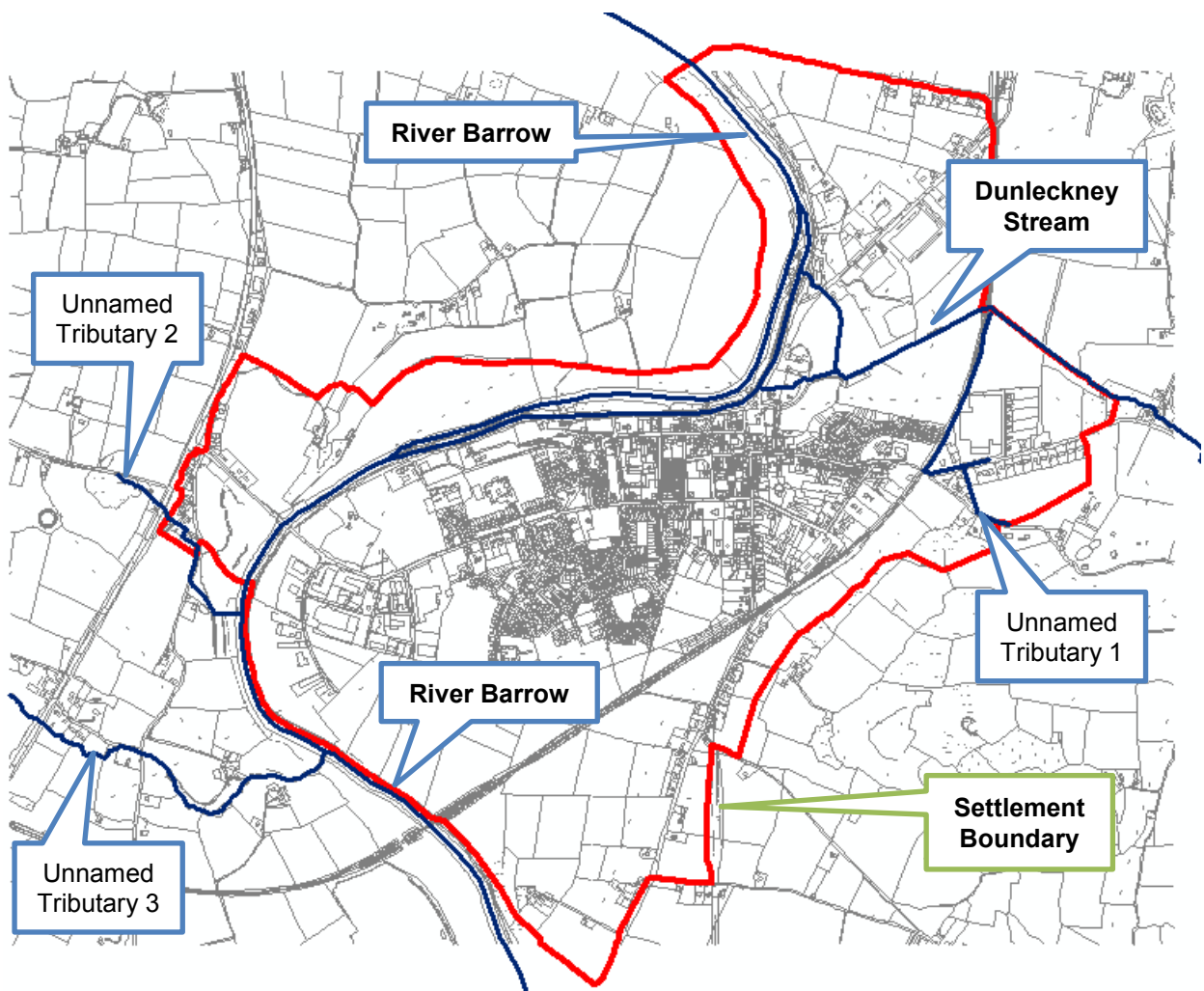
2.1 Introduction

The plan area comprises of the full extent of the town of Muinebheag and village of Royal Oak both are located in the Barrow Catchment.

2.2 Watercourses

The Barrow catchment covers an area of 3,067km², rising in and flowing down through Laois and Kildare before reaching Carlow. The river then flows through Carlow and Muinebheag before entering Kilkenny from where it flows on and forms the Waterford, Wexford border entering the sea in Waterford Harbour.

Figure 2-1 Watercourses flowing through Muinebheag & Royal Oak



The Barrow was a significant commercial canalised waterway right up to the 1950's with important river ports at Athy, Carlow, Graignamanagh and New Ross. Barges transported raw material to Dublin and finished products back down the river from the capital.¹

What made the Barrow suitable for barges was its conversion, in places, to a canal. The Barrow was made navigable by cutting channels parallel to it and building weirs across the natural river,

¹ <http://www.riverbarrow.net/history.html>
2016s4002 Muinebheag-Royal Oak SFRA v1.4

forcing flow of water into the side channels. Levels on the canal sections are managed by lock gates.²

The advent of rail transport signalled the decline of the river as a commercial highway. The Barrow is now more typically used for recreational and leisure activities.

Aside from the River Barrow and Dunleckney Stream there are three additional unnamed tributaries. These are small watercourses with catchment areas ranging from 11km² for tributary 3, to 16km² for Tributary 1 and the Dunleckney Stream, Tributary 2 has an area of approximately 1km². The tributaries (including the Dunleckney Stream) are generally steeply sloping with bed gradient in the region of 0.01m/m or steeper, by way of comparison the River Barrow has a bed slope of approximately 0.00042m/m. In contrast to the River Barrow the small tributaries are fast flowing and highly responsive to local rainfall and soil wetness conditions.

2.3 Environment

The River Barrow through Muinebheag has been designated a Special Area of Conservation (SAC) - Site 2162 River Barrow and River Nore SAC.

Under Article 6(3) of the EU Habitats Directive, an “appropriate assessment” (AA) is required where any plan or project, either alone or ‘in combination’ with other plans or projects, could have an adverse effect on the integrity of a Natura 2000 site.

The management of flood risk within such areas must have regard to potential negative impacts to this environment. Further information is provided in the full Strategic Environmental Assessment (SEA) and AA for the NDP.

2.4 Planning Policy

2.4.1 Carlow County Development Plan

The current plan covers the period 2015-2021. The plan sets out compliance with national spatial strategy and the West Regional Planning Guidelines, including; "policies for the protection of areas at risk from flooding."

The flood management policies of Carlow County Council, as laid out in the development plan include:

- Carry out flood risk assessment for the purpose of regulating, restricting and controlling development in areas at risk of flooding and to minimise the level of flood risk to people, business, infrastructure and the environment through the identification and management of existing and potential future flood risk;
- Lower tier plans shall undertake Strategic Flood Risk Assessment in accordance with the requirements of the Planning System and Flood Risk Management-Guidelines for Planning Authorities (DEHLG and OPW, 2009);
- Apply the sequential approach which is based on the principles of avoidance, reduction and mitigation of flood risks when preparing town development plans and local area plans and when assessing planning applications for development proposals;
- Require the use of Sustainable Urban Drainage Systems (SuDS) to minimise the extent of hard surfacing and paving and require the use of sustainable drainage for new development or extensions to existing developments;
- Ensure that all development proposals comply with the requirements of the Planning System and Flood Risk Management-Guidelines for Planning Authorities’ (DEHLG and OPW 2009) and to ensure that the Justification Test for Development Management is applied to required development proposals and in accordance with methodology set out in the guidelines;
- Preserve appropriately sized riparian strips alongside river channels free of development and of adequate width to permit access for river maintenance;
- Integrate as appropriate the recommendations of any relevant CFRAM Studies, Flood Risk Management Plans, future flood hazard maps or flood risk maps;

² <http://www.riverbarrow.net/history.html>
2016s4002 Muinebheag-Royal Oak SFRA v1.4

- Ensure that where flood protection or alleviation works take place that the natural and cultural heritage and rivers, streams and watercourses are protected and enhanced. Such works will be subject to Appropriate Assessment as required under Article 6 of the EU Habitats Directive;
- Ensure that development proposals in areas at moderate (Flood Zone B) or high (Flood Zone A) risk of flooding which are considered acceptable in principle demonstrate that appropriate mitigation measures can be put in place and that residual risks can be managed to acceptable levels;
- Site-specific Flood Risk Assessment (FRA) is required for all planning applications in areas at risk of flooding, even for developments appropriate to the particular Flood Zone. The detail of these site-specific FRAs will depend on the level of risk and scale of development. A detailed site-specific FRA should quantify the risks, the effects of selected mitigation and the management of any residual risks. The Council shall have regard to the results of any CFRAM Study in the assessment of planning applications;
- Support, in co-operation with the OPW, the implementation of the EU Flood Risk Directive (2007/60/EC), the Flood Risk Regulations (SI No. 122 of 2010) and the DEHLG/OPW publication The Planning System and Flood Risk Management Guidelines (2009) (and any updated/superseding legislation or policy guidance). Carlow County Council will also take account of the South Eastern Catchment Flood Risk Assessment and Management Study;
- Protect water bodies and watercourses within the County from inappropriate development, including rivers, streams, associated undeveloped riparian strips, wetlands and natural floodplains. This will include protection buffers in riverine and wetland areas as appropriate. For larger river channels (over 10m), the recommended width of the core riparian core (CZR) is 35-60m (18-30m on each side of the river) and may be larger where flood plains adjoin the riparian zone. For smaller channels (under 10m), a core riparian zone (CZR) of 20m or greater (minimum 10m on each side of the river) is recommended.

In addition, the Specific Objective for Flood Risk Management requires a detailed site-specific FRA for identified potential flood risk areas, taking into consideration findings of the CFRAM Study when completed.

2.4.2 Muinebheag-Royal Oak LAP 2017-2023

The LAP is consistent with the planning policy set out in the County Development Plan and under Chapter 9, Section 9.4.3 it sets out policy and objectives in relation to flooding and SUDs.

Table 2-1 Flooding and SUDs Policies & Objectives

Ref	Detail
FL 1	To support, in co-operation with the OPW, the implementation of the EU Flood Risk Directive (2007/60/EC), the Flood Risk Regulations (SI No. 122 of 2010) and the DoEHLG/OPW publication The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 and Departmental Circular PL2/2014 (or any updated/superseding legislation or policy guidance). Carlow County Council will also take account of the OPW Catchment Flood Risk Management Plans (CFRAMS) as appropriate, the Preliminary Flood Risk Assessment (PFRA) and the Strategic Flood Risk Assessment for County Carlow 2015 – 2021.
FL 2	To have regard to the findings and recommendations of the current Strategic Flood Risk Assessment carried out for Muine Bheag / Royal Oak Local Area Plan area.
FL 3	To implement the use of the sequential approach and application of the Justification Tests for Development Management and Development Plans, during the period of this plan, as set out in the Flood Risk Management Guidelines as follows: 1) Avoid development that will be at risk of flooding or that will increase the flooding risk elsewhere, where possible; 2) Substitute less vulnerable uses, where avoidance is not possible; and 3) Justify, mitigate and manage the risk, where avoidance and substitution are not possible. Development should only be permitted in areas at risk of flooding when there are no alternative, reasonable sites available in areas at lower risk that also meet the objectives of proper planning and sustainable development.
FL 4	To ensure that all developments have regard to the surface water management conditions contained within the SFRA and appropriate section of the Local Area Plan / County Development Plan.

FLO 1	To ensure the implementation of the DoEHLG/OPW publication The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 (including its accompanying Technical Appendices) and including the Department of the Environment, Community and Local Government's Circular PL 2/2014 (or any updated/superseding document) in relation to flood risk management within the plan area.
FLO 2	To undertake a review of the SFRA following any subsequent alteration of flood mapping produced as part of the CFRAM.
FLO 3	To ensure that Flood Risk Assessments are carried out for any development proposal, in accordance with the "Planning System and Flood Risk Management – Guidelines for Planning Authorities (DoECLG/OPW 2009). This assessment shall be appropriate to the scale and nature of risk to the potential development.
FLO 4	To protect water bodies and watercourses within the plan area from inappropriate development, including the river, canal, streams, associated undeveloped riparian strips, wetlands and natural floodplains. A 10 metre strip on either side of such channel will be retained, where required, to facilitate access thereto. In addition, promote the sustainable management and uses of water bodies and avoid culverting or realignment of these features.
SW 1	To require the use of Sustainable Urban Drainage Systems in all new developments where appropriate. The following measures will apply; <ul style="list-style-type: none"> • The infiltration into the ground through the development of porous paving, swales and detention basins. • The holding of water in storage areas through the construction of green roofs, rainwater harvesting, detention basins, ponds and wetlands. • The slowdown of the movement of water.
SWO 1	To improve and extend where technically feasible and economically viable the surface water disposal infrastructure to serve all zoned land, in order to facilitate development.

3 The Planning System and Flood Risk Management

3.1 Introduction

Prior to discussing the management of flood risk, it is helpful to understand what is meant by the term. It is also important to define the components of flood risk in order to apply the principles of the Planning System and Flood Risk Management in a consistent manner.

The Planning System and Flood Risk Management: Guidelines for Planning Authorities, published in November 2009, describe flooding as a natural process that can occur at any time and in a wide variety of locations. Flooding can often be beneficial, and many habitats rely on periodic inundation. However, when flooding interacts with human development, it can threaten people, their property and the environment.

This Section will firstly outline the definitions of flood risk and the Flood Zones used as a planning tool; a discussion of the principles of the planning guidelines and the management of flood risk in the planning system will follow.

3.2 Definition of Flood Risk

Flood risk is generally accepted to be a combination of the likelihood (or probability) of flooding and the potential consequences arising. Flood risk can be expressed in terms of the following relationship:

$$\text{Flood Risk} = \text{Probability of Flooding} \times \text{Consequences of Flooding}$$

The assessment of flood risk requires an understanding of the sources, the flow path of floodwater and the people and property that can be affected. The *source - pathway - receptor model*, shown below in Figure 3-1, illustrates this and is a widely used environmental model to assess and inform the management of risk.

Figure 3-1 Source Pathway Receptor Model

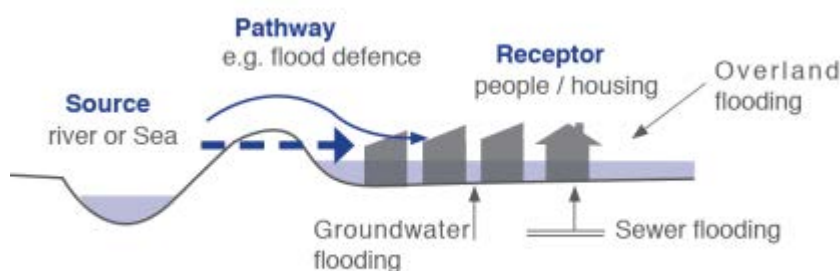


Fig. A1: Sources, pathways and receptors of flooding

Source: Figure A1 The Planning System and Flood Risk Management Guidelines Technical Appendices

Principal sources of flooding are rainfall or higher than normal sea levels while the most common pathways are rivers, drains, sewers, overland flow and river and coastal floodplains and their defence assets. Receptors can include people, their property and the environment. All three elements must be present for flood risk to arise. Mitigation measures, such as defences or flood resilient construction, have little or no effect on sources of flooding but they can block or impede pathways or remove receptors.

The planning process is primarily concerned with the location of receptors, taking appropriate account of potential sources and pathways that might put those receptors at risk.

3.2.1 Likelihood of Flooding

Likelihood or probability of flooding or a particular flood event is classified by its annual exceedance probability (AEP) or return period (in years). A 1% AEP flood indicates the flood event that will occur or be exceeded on average once every 100 years and has a 1 in 100 chance of occurring in any given year.

Return period is often misunderstood to be the period between large flood events rather than an average recurrence interval. Annual exceedance probability is the inverse of return period as shown in Table 3-1.

Table 3-1 Probability of Flooding

Return Period (Years)	Annual Exceedance Probability (%)
2	50
100	1
200	0.5
1000	0.1

Considered over the lifetime of development, an apparently low-frequency or rare flood has a significant probability of occurring. For example:

- A 1% flood has a 22% (1 in 5) chance of occurring at least once in a 25-year period - the period of a typical residential mortgage;
- And a 53% (1 in 2) chance of occurring in a 75-year period - a typical human lifetime.

3.2.2 Consequences of Flooding

Consequences of flooding depend on the hazards caused by flooding (depth of water, speed of flow, rate of onset, duration, wave-action effects, water quality) and the vulnerability of receptors (type of development, nature, e.g. age-structure, of the population, presence and reliability of mitigation measures etc.).

The 'Planning System and Flood Risk Management' provides three vulnerability categories, based on the type of development, which are detailed in Table 3.1 of the Guidelines, and are summarised as:

- **Highly vulnerable**, including residential properties, essential infrastructure and emergency service facilities;
- **Less vulnerable**, such as retail and commercial and local transport infrastructure;
- **Water compatible**, including open space, outdoor recreation and associated essential infrastructure, such as changing rooms.

3.3 Definition of Flood Zones

In the 'Planning System and Flood Risk Management', Flood Zones are used to indicate the likelihood of a flood occurring. These Zones indicate a high, moderate or low risk of flooding from fluvial or tidal sources and are defined below in Table 3-2.

It is important to note that the definition of the Flood Zones is based on an **undefended scenario** and does not take into account the presence of flood protection structures such as flood walls or embankments. This is to allow for the fact that there is a residual risk of flooding behind the defences due to overtopping or breach and that there may be no guarantee that the defences will be maintained in perpetuity.

It is also important to note that the Flood Zones indicate flooding from fluvial and tidal sources and do not take other sources, such as groundwater or pluvial, into account, so an assessment of risk arising from such sources should also be made.

Table 3-2 Definition of Flood Zones

Zone	Description
Zone A High probability of flooding.	This zone defines areas with the highest risk of flooding from rivers (i.e. more than 1% probability or more than 1 in 100) and the coast (i.e. more than 0.5% probability or more than 1 in 200).
Zone B Moderate probability of flooding.	This zone defines areas with a moderate risk of flooding from rivers (i.e. 0.1% to 1% probability or between 1 in 100 and 1 in 1000) and the coast (i.e. 0.1% to 0.5% probability or between 1 in 200 and 1 in 1000).
Zone C Low probability of flooding.	This zone defines areas with a low risk of flooding from rivers and the coast (i.e. less than 0.1% probability or less than 1 in 1000).

3.4 Objectives and Principles of the Planning Guidelines

The 'Planning System and Flood Risk Management' describes good flood risk practice in planning and development management. Planning authorities are directed to have regard to the guidelines in the preparation of Development Plans and Local Area Plans, and for development control purposes.

The objective of the 'Planning System and Flood Risk Management' is to integrate flood risk management into the planning process, thereby assisting in the delivery of sustainable development. For this to be achieved, flood risk must be assessed as early as possible in the planning process. Paragraph 1.6 of the Guidelines states that the core objectives are to:

- *"avoid inappropriate development in areas at risk of flooding;*
- *avoid new developments increasing flood risk elsewhere, including that which may arise from surface run-off;*
- *ensure effective management of residual risks for development permitted in floodplains;*
- *avoid unnecessary restriction of national, regional or local economic and social growth;*
- *improve the understanding of flood risk among relevant stakeholders; and*
- *ensure that the requirements of EU and national law in relation to the natural environment and nature conservation are complied with at all stages of flood risk management".*

The guidelines aim to facilitate *'the transparent consideration of flood risk at all levels of the planning process, ensuring a consistency of approach throughout the country.'* SFRAs therefore become a key evidence base in meeting these objectives.

The 'Planning System and Flood Risk Management' works on a number of key principles, including:

- Adopting a staged and hierarchical approach to the assessment of flood risk;
- Adopting a sequential approach to the management of flood risk, based on the frequency of flooding (identified through Flood Zones) and the vulnerability of the proposed land use.

3.5 The Sequential Approach and Justification Test

Each stage of the FRA process aims to adopt a sequential approach to management of flood risk in the planning process.

Where possible, development in areas identified as being at flood risk should be avoided; this may necessitate de-zoning lands within the plan boundary. If de-zoning is not possible, then rezoning from a higher vulnerability land use, such as residential, to a less vulnerable use, such as open space may be required.

Figure 3-2 Sequential Approach Principles in Flood Risk Management



Source: The Planning System and Flood Risk Management (Figure 3.1)

Where rezoning is not possible, exceptions to the development restrictions are provided for through the Justification Test. Many towns and cities have central areas that are affected by flood risk and have been targeted for growth. To allow the sustainable and compact development of these urban centres, development in areas of flood risk may be considered necessary. For development in such areas to be allowed, the Justification Test must be passed.

The Justification Test has been designed to rigorously assess the appropriateness, or otherwise, of such developments. The test is comprised of two processes; the Plan-making Justification Test, and the Development Management Justification Test. The latter is used at the planning application stage where it is intended to develop land that is at moderate or high risk of flooding for uses or development vulnerable to flooding that would generally be considered inappropriate for that land.

Table 3-3 shows which types of development, based on vulnerability to flood risk, are appropriate land uses for each of the Flood Zones. The aim of the SFRA is to guide development zonings to those which are 'appropriate' and thereby avoid the need to apply the Justification Test.

Table 3-3 Matrix of Vulnerability versus Flood Zone

	Flood Zone A	Flood Zone B	Flood Zone C
Highly vulnerable development (Including essential infrastructure)	Justification Test	Justification Test	Appropriate
Less vulnerable development	Justification Test	Appropriate	Appropriate
Water-compatible development	Appropriate	Appropriate	Appropriate

Source: Table 3.2 of The Planning System and Flood Risk Management

3.6 Scales and Stages of Flood Risk Assessment

Within the hierarchy of regional, strategic and site-specific flood-risk assessments, a tiered approach ensures that the level of information is appropriate to the scale and nature of the flood-risk issues and the location and type of development proposed, avoiding expensive flood modelling and development of mitigation measures where it is not necessary. The stages and scales of flood risk assessment comprise:

- **Regional Flood Risk Appraisal (RFRA)** – a broad overview of flood risk issues across a region to influence spatial allocations for growth in housing and employment as well as to identify where flood risk management measures may be required at a regional level to support the proposed growth. This should be based on readily derivable information and undertaken to inform the Regional Planning Guidelines.
- **Strategic Flood Risk Assessment (SFRA)** – an assessment of all types of flood risk informing land use planning decisions. This will enable the Planning Authority to allocate appropriate sites for development, whilst identifying opportunities for reducing flood risk. This SFRA will revisit and develop the flood risk identification undertaken in the RFRA, and give consideration to a range of potential sources of flooding. An initial flood risk assessment, based on the identification of Flood Zones, will also be carried out for those areas which will be zoned for development. Where the initial flood risk assessment highlights the potential for a significant level of flood risk, or there is conflict with the proposed vulnerability of development, then a site specific FRA will be recommended, which will necessitate a detailed flood risk assessment.
- **Site Specific Flood Risk Assessment (FRA)** – site or project specific flood risk assessment to consider all types of flood risk associated with the site and propose appropriate site management and mitigation measures to reduce flood risk to and from the site to an acceptable level. If the previous tiers of study have been undertaken to appropriate levels of detail, it is highly likely that the site specific FRA will require detailed channel and site survey, and hydraulic modelling.

4 Data Collection

4.1 Overview

There are a number of sources of flood data available for the Muinebheag and Royal Oak area. The following table lists the core datasets used to compile the flood map for the Muinebheag and Royal Oak Local Area Plan and gives an assessment of the data quality and the confidence in its accuracy.

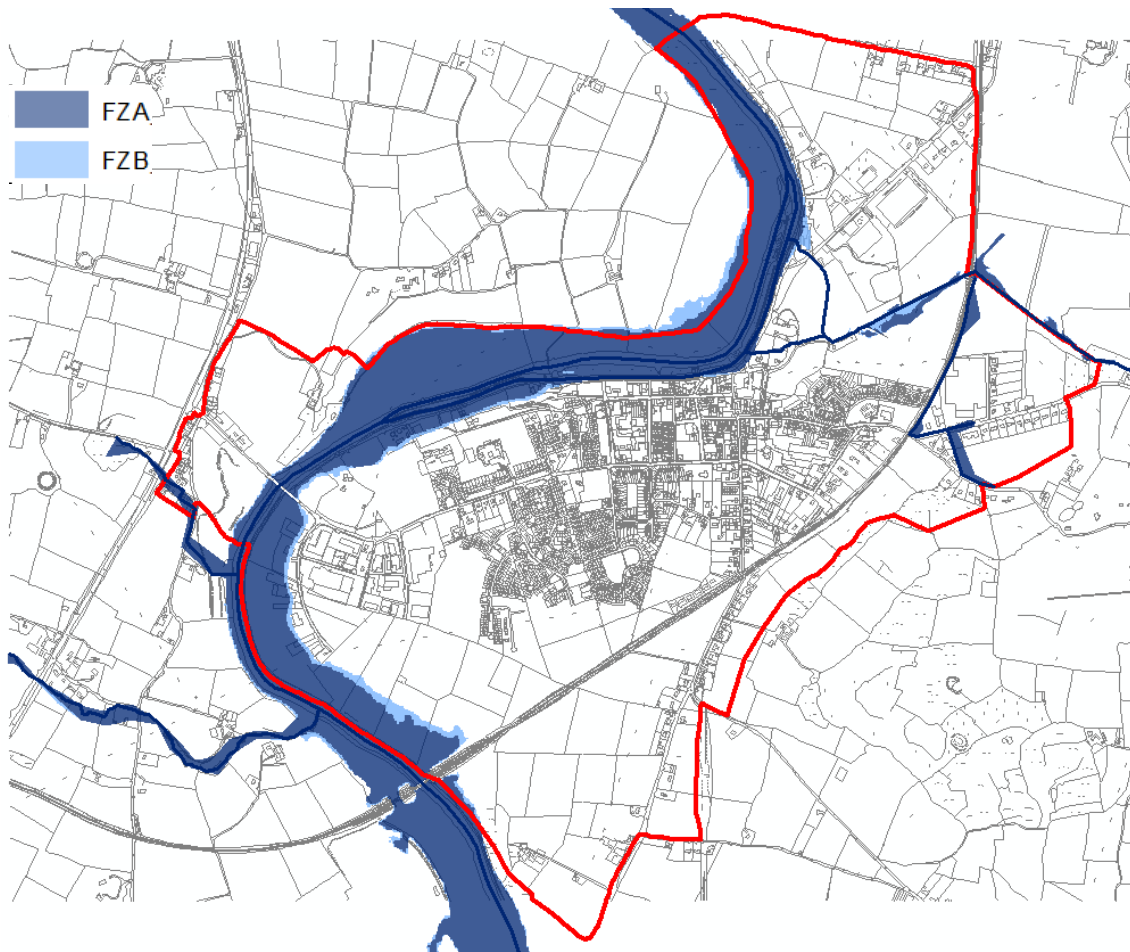
Table 4-1 Flood Data Used to Compile Flood Zone Mapping

Description	Coverage	Robustness	Comment on usefulness
South Eastern CFRAM Draft Flood Mapping	Covers the River Barrow only.	Moderate/High MPW status.	MPW status CFRAM model and is useful. Site verified by walkover and consultation with Local Authority.
Dunleckney Stream Flood Mapping (Carlow County Council)	Dunleckney Stream	Moderate/High	1D hydraulic model completed in 2016 to improve PFRA mapping on Dunleckney Stream.
OPW PFRA flood extent maps, as verified by CFRAM FRR	Covers minor watercourses draining into the Barrow.	Moderate	Used to define Flood Zones from non-CFRAM watercourses, useful. Again, verified by CFRAM FRR, JBA walkover and consultation with Local Authority.
Historical Flood Records and Consultation with Area Engineer	Spot coverage of whole LAP (Area Engineer specific input).	Moderate	Highly useful oversight of historic flooding issues provided by Local Authority.
Walkover Survey	Covers all significant watercourses.	Moderate	Walkover used to validate outlines, estimate new outlines and flow paths at key locations. Essential process in the Flood Zone process.

The Flood Zone mapping represents a combination of the above flood sources. The draft South Eastern CFRAM mapping, has formed the core source of the final Flood Zones for the River Barrow and it has been added to by OPW PFRA mapping for non-CFRAM watercourses. All flood mapping has been site verified by walkover and consultation with the Local Authority Area Engineer. There has also been a thorough review of historic flood records. The result is Flood Zone mapping that presents the best available data for the study area.

Figure 4-1 over the page presents an overview of the Flood Zones and watercourses. Each of the sources of flood information is discussed in more detail below.

Figure 4-1 Flood Zone mapping



4.2 National PFRA Study Fluvial Flood Outlines

The Preliminary Flood Risk Assessment (PFRA) is a national screening exercise that was undertaken by the OPW to identify areas at potential flood risk. The PFRA was a requirement of the EU Floods Directive and the publication of this work informed the more detailed assessment that is being undertaken as part of the Catchment Flood Risk Assessment and Management (CFRAM) studies. The PFRA study considered flooding from a number of sources; fluvial, tidal, pluvial and groundwater and resulted in production of a suite of broadscale flood maps.

For the preparation of the PFRA fluvial flood maps, flood flow estimates were calculated at nodes every 500m along the entire river network. (The river network is the EPA 'blue-line' network, which, for the most part, matches the rivers mapped at the 1:50,000 scale Discovery Series OS mapping). This flow estimation was based on the OPW Flood Studies Update research programme. An assumption was made that the in-channel flow equates to the mean annual flood and so the out of bank flow for a particular AEP event was determined by deducting the mean annual flood from the flood flow estimate for that probability event.

Using a 5m national digital terrain model (DTM) a cross section was determined at 100m spacings. The Manning's equation, a hydraulic equation for normal flow, was used to calculate a flood level which was then extrapolated across the DTM to determine the flood extent. This exercise was completed by the OPW for all river catchments greater than 1km².

This methodology did not take into account defences, channel structures or channel works. Potential sources of error in the mapping include local errors in the DTM or changes to the watercourse flow route due to an error in mapping or new development. In Muinebheag and Royal Oak, the PFRA mapping covers the River Barrow (although this has been superseded by CFRAM data) and a number of un-named tributaries draining into it.

4.3 National CFRAM Programme

Following on from the PFRA study, the OPW commenced appointment of consultants to carry out a more detailed flood risk assessment for key flood risk areas. This work is being undertaken under the national CFRAM programme across seven river basin districts in Ireland. The CFRAM programme commenced with three pilot studies covering the River Lee, Fingal East Meath area and the River Dodder. A further 6 studies are currently underway in the East, South-East, South-West, West, North-West and Neagh-Bann regions.

Muinebheag and Royal Oak fall within the South Eastern CFRAM Study area. The initial Flood Risk Review (FRR) stage of the South Eastern CFRAM has been completed and this included a site based review of the PFRA flood outlines for the area, which provided feedback on flood risk and potential for inclusion as a detailed Area of Further Assessment.

The area did not qualify as an AFA and was therefore not subject to the full analysis under the South Eastern CFRAM, however the River Barrow was included as a Medium Priority Watercourse MPW at this location. MPW denotes 'Medium Priority Watercourse' and are generally watercourses that link higher-risk areas such as towns and villages; termed AFAs (Areas for Further Assessment) in the CFRAM studies. More importantly, MPWs are not hydraulically modelled to the same level of detail as that found in AFAs. Cross-sections in the model tend to be separated by larger distances and sometimes omit the detail required to accurately reflect site-specific flood risk. They are 1D only hydraulic models and, by their nature, are conservative when representing of out-of-bank flooding. The MPW mapping is still a significant improvement compared to the accuracy provided by the PFRA mapping and the MPW has been verified by on site walkover and consultation with the Local Authority.

4.4 Dunleckney Stream Flood Mapping

A 1D HEC-RAS model was constructed of the Dunleckney Stream in order to improve upon the PFRA maps on this watercourse. Results were provided by Carlow County Council in October 2016 and the flood outlines have been used to define the Flood Zones for this watercourse.

4.5 Historic Flood Review and Consultation with Area Engineer

Records of past flooding are useful for looking at the sources, seasonality, frequency and intensity of flooding. Historical records are mostly anecdotal and incomplete, but are useful for providing background information.

4.5.1 OPW Floodmaps.ie

The OPW hosts a National Flood Hazard Mapping website³ that makes available information on areas potentially at risk from flooding. This website provides information on historical flood events across the country and formed the basis of the Regional Flood Risk Appraisal.

Information is provided in the form of reports and newspaper articles which generally relate to rare and extreme events. Since the establishment of the hazard mapping website, more records are available which identify more frequent and often recurring events. These tend to include memos and meeting records from local authority area engineers, often relating to road flooding.

4.5.2 Consultation

A meeting with the Area Engineer for Muinebheag and Royal Oak helped to clarify and improve on the general appreciation of flood risk across the settlement. This includes for appropriate screening of the historic and potential flood risk from the smaller watercourses within the settlement boundary. Incidences of flooding from the consultation are noted in the following section.

4.5.3 Summary of Historic Flood Risk

The pertinent flood risk history from both the consultation and OPW floodmaps.ie sources are summarised in Figure 4-2 and Table 4-2 below.

³ www.floodmaps.ie

Figure 4-2 Historic Flood Mapping; Spatial Representation

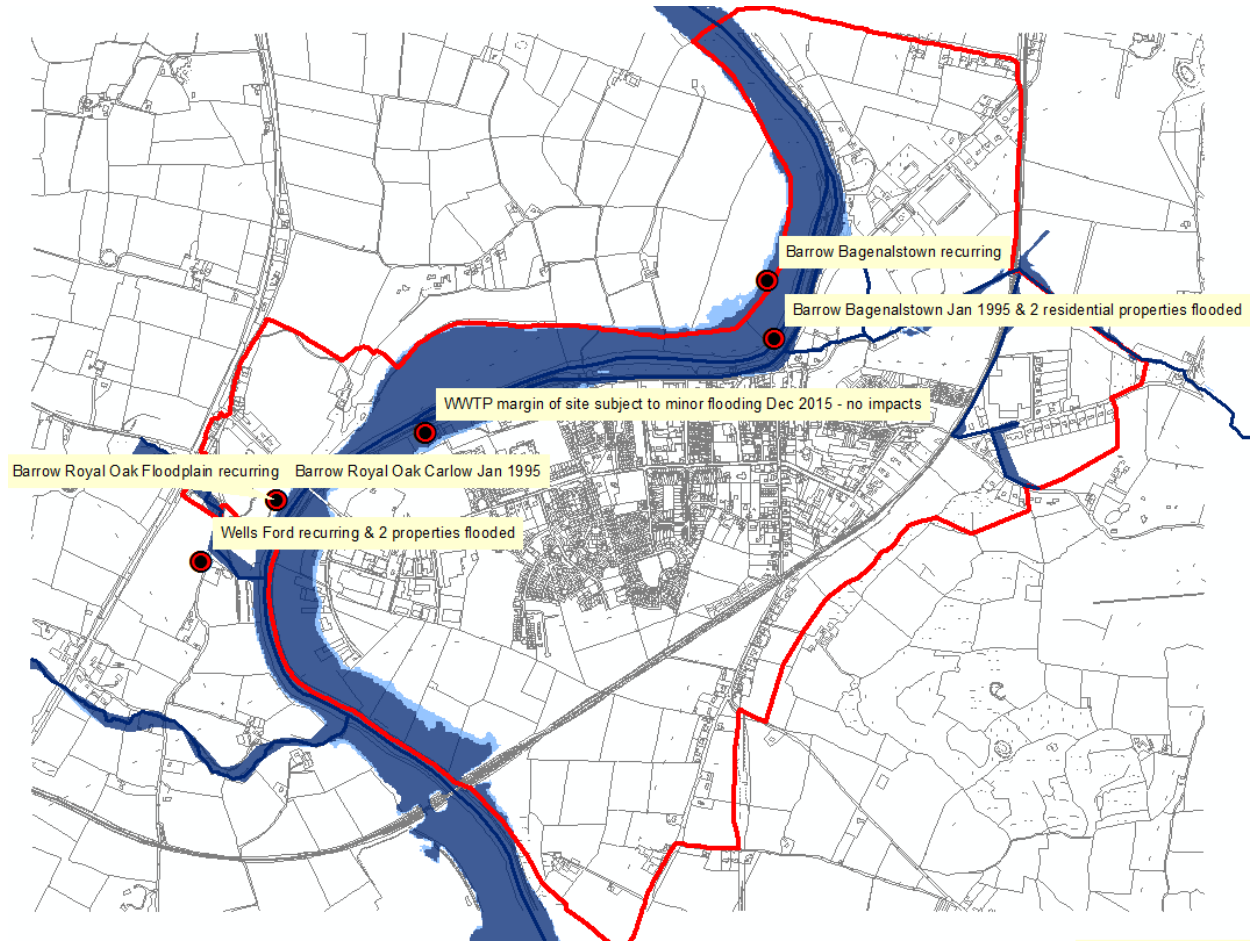


Table 4-2 Historic Flooding Information - quoted from South Eastern CFRAM Inception Report⁴ and the consultation with Carlow Engineering staff

Date of Flood	Description
Barrow Bagenalstown December 2015	The Waste Water Treatment Plant site located in the industrial lands in the east Muinebheag was subject to high water levels in December 2015. The site was however not significantly affected.
Barrow Bagenalstown Jan 1995	Flooding due to overbank flow occurred in Bagenalstown on the 28th of January 1995. There are no records of any properties being flooded.
Barrow Royal Oak Carlow Jan 1995	Inundation of the floodplain occurred in Royal Oak on the 28th of January 1995. There are no records of any properties being flooded.
Wells Ford recurring	The road at Wells Ford is periodically impassable due to recurring flooding.
Barrow Bagenalstown recurring	Flooding due to overbank flow occurs in Bagenalstown regularly, however there are no records of any properties being flooded.
Royal Oak – Residential land Within last 6 years	There has been flooding to 2 houses previously in Royal Oak due to inappropriate culverting in place. This is potentially linked to the Wells Ford issue noted above.
Barrow Royal Oak Floodplain recurring	Inundation of the floodplain occurs in Royal Oak regularly, however there are no records of this type of flooding extending to any properties.
Downstream of Bagenalstown House Within last 2 years	Flooding of two residential properties relating to the un-named tributary approaching the dwelling from the east and flowing into the Barrow Canal. This problem has been sourced back to a section of old millrace being closed and as a result this section of millrace stopped functioning as an overflow for the stream that has been causing the flooding on the R705. Remedial action was undertaken in May 2016 to rectify this matter.

⁴ South Eastern CFRAM Study HA07 Inception Report, RPS/OPW June, 2012. 2016s4002 Muinebheag-Royal Oak SFRA v1.4

4.6 Sources of Flooding

A review of the historical event data and predictive flood information has highlighted a number of sources of potential flood risk to the town. These are discussed in the following sections.

4.6.1 Fluvial Flooding

The main source of historic and potential flood risk to development in Muinebheag and Royal Oak is the River Barrow which extends across a relatively expansive floodplain. In addition to this there are four small and steep tributaries that drain into the Barrow and do exert some flood risk to surrounding lands, but do not impact much existing development.

Although there are many historic events of flooding for Muinebheag and Royal Oak listed in Table 4-2 most of these events are limited in consequence and therefore risk in the settlement is generally low. The management of fluvial flood risk through the development of appropriate policies and objectives is discussed Section 5. A full review of locations where development is impacted by flood risk is included in Section 6.

4.6.2 Surface Water / Pluvial Flooding

Flooding of land from surface water runoff is usually caused by intense rainfall that may only last a few hours. Areas at risk from fluvial flooding will almost certainly be at risk from surface water flooding. The indicative pluvial map from myplan.ie shows the OPW PFRA study in Figure 4-3. It has been used to identify development areas at particular risk of surface water and pluvial flooding.

The OPW historic records do not show any historic flooding in Muinebheag or Royal Oak due to surface water with most previous flood events attributed to fluvial flooding from the River Barrow. Although surface water could have been a contributing factor within some of these flood events, poorly planned developments or inadequately designed surface water drainage systems can increase the risk of surface water flooding and exacerbate the extent of fluvial flooding. New development or redevelopment of existing sites adhering to the policies on the management of surface water will ensure the risk will be adequately managed. This is explained further in Section 5.

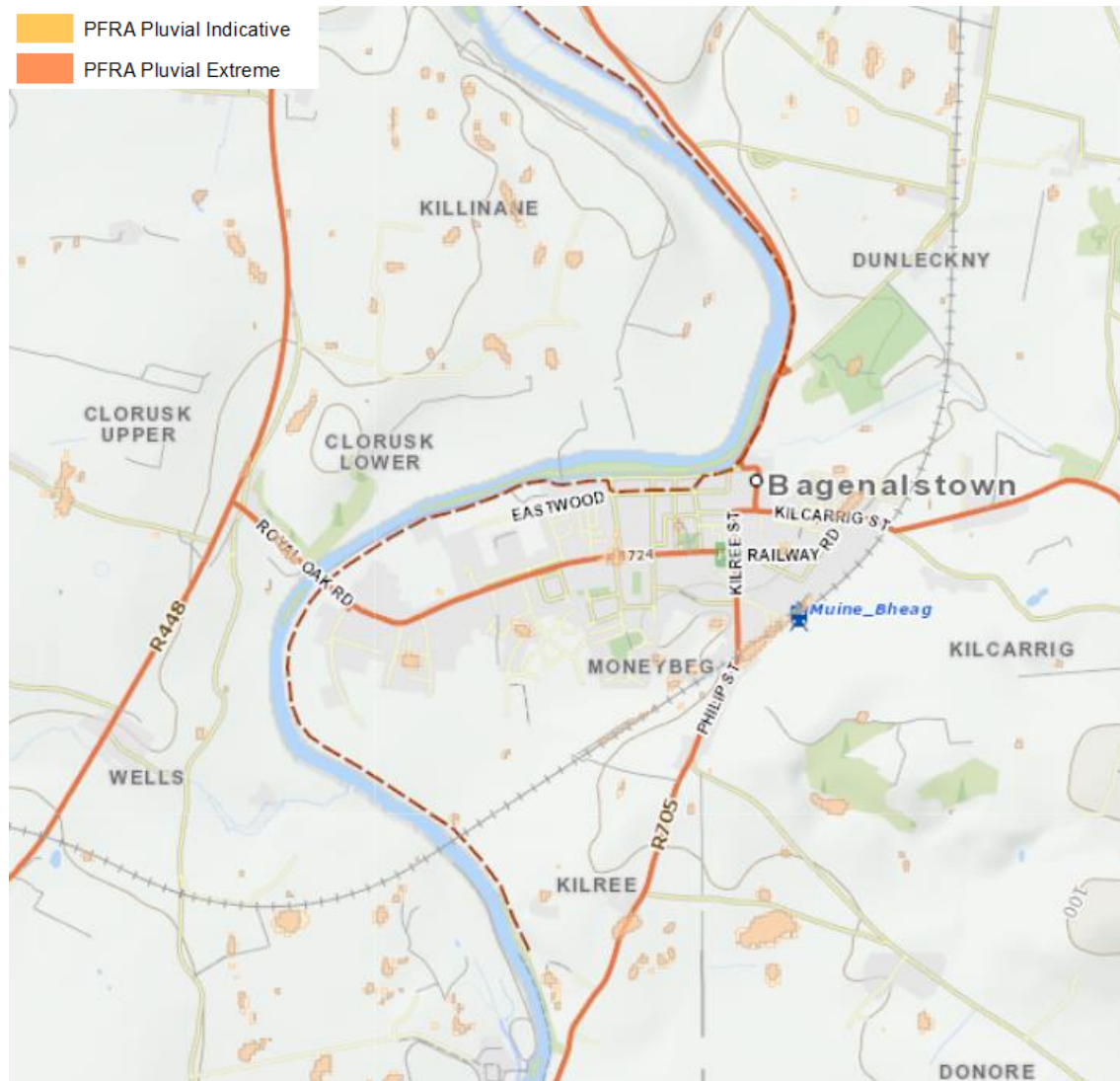
4.6.3 Groundwater Flooding

Groundwater flooding is caused by the emergence of water originating from the subsurface, and is particularly common in karst landscapes. This source of flooding can persist over a number of weeks and poses a significant but localised issue that has attracted an increasing amount of public concern in recent years. In most cases groundwater flooding cannot be easily managed or lasting solutions engineered.

The draft PFRA groundwater flood maps⁵, which entailed an evidence-based approach and considered the hydro-geological environment, such as the presence of turloughs, did not show any significant risk in the LAP area. Based on the PFRA study the risk of groundwater flooding is not considered significant enough to warrant further investigation in this SFRA.

⁵ Reference:
2016s4002 Muinebheag-Royal Oak SFRA v1.4

Figure 4-3 PFRA Indicative Pluvial Flood Map⁶



4.7 Climate Change

The Planning System and Flood Risk Management guidelines recommends that a precautionary approach to climate change is adopted due to the level of uncertainty involved in the potential effects.

Specific advice on the expected impacts of climate change and the allowances to be provided for future flood risk management in Ireland is given in the OPW draft guidance. Two climate change scenarios are considered. These are the Mid-Range Future Scenario (MRFS) and the High-End Future Scenario (HEFS). The MRFS is intended to represent a "likely" future scenario based on the wide range of future predictions available. The HEFS represents a more "extreme" future scenario at the upper boundaries of future projections. Based on these two scenarios the OPW recommended allowances for climate change are given in Table 3 4 below.

⁶ Source: <http://www.myplan.ie/en/index.html>
2016s4002 Muinebheag-Royal Oak SFRA v1.4

Table 4-3 Allowances for Future Scenarios (100 Year Time Horizon)

Criteria	MRFS	HEFS
Extreme Rainfall Depths	+20%	+30%
Flood Flows	+20%	+30%
Mean Sea Level Rise	+500mm	+1000mm
Land Movement	-0.5mm / year*	-0.5mm / year*
Urbanisation	No General Allowance - Review on Case by Case Basis	No General Allowance - Review on Case by Case Basis
Forestation	-1/6 Tp**	-1/3 Tp** +10% SPR***

Notes:

- * Applicable to the southern part of the country only (Dublin - Galway and south of this)
- ** Reduce the time to peak (Tp) accordingly; this allows for potential accelerated runoff that may arise as a result of drainage of afforested land
- *** Add 10% to the Standard Percentage Runoff (SPR) rate; this allows for increased runoff rates that may arise following felling of forestry

4.7.1 Climate Change and Flood Risk Assessment

The Flood Zones are determined based on readily available information and their purpose is to be used as a tool to avoid inappropriate development in areas of flood risk. Where development is proposed within an area of potential flood risk (Flood Zone A or B), a flood risk assessment of appropriate scale will be required and this assessment must take into account climate change and associated impacts. Under the National CFRAM programme, the detailed modelling and assessment stage of each study will include for climate change effects, but has not yet been delivered under the draft stage.

Climate change may result in increased flood extents and therefore caution should be taken when zoning lands in transitional areas. **As recommended in the Planning System and Flood Risk Management Guidelines; Flood Zone B, which represents the 0.1% AEP extent, can be taken as an indication of the extent of the 1% AEP flood event with climate change.** In steep valleys an increase in water level will relate to a very small increase in extent, however in flatter low-lying basins a small increase in water level can result in a significant increase in flood extent.

In the design of flood alleviation measures, climate change should be taken into account and design levels of structures, such as flood walls or embankments, must be sufficient to cope with the effects of climate change over the lifetime of the structure or where circumstances permit, be capable of adaptation. Further consideration to the potential future impacts of climate change will be given for specific areas of the LAP within Section 6.

5 Approach to Flood Risk Management

The Planning Guidelines recommend a sequential approach to spatial planning, promoting avoidance rather than justification and subsequent mitigation of risk. The implementation of the Planning Guidelines on a settlement basis is achieved through the application of the policies and objectives contained within Section 10.5 'Flooding' of the CCDP 2015-2021 and also within Section 9.4.3 of the LAP. These have been outlined in Section 2.4.1 and 2.4.2.

The use and application of the policies and guidelines at the LAP level constitutes the formal plan for flood risk management for Muinebheag and Royal Oak.

5.1 The Strategic Approach

A strategic approach to the management of flood risk is important in Muinebheag as there is a clear split between the existing core of the town and future plans for tourism and leisure encroaching on under/undeveloped land adjacent to the Barrow. Furthermore, there is pressure to develop new residential lands in the east of the settlement, some of these sites are adjacent to the un-named tributaries. These are varied sites and represent differing scales of risk and development.

Following the Planning Guidelines, development should always be located in areas of lowest flood risk first, and only when it has been established that there are no suitable alternative options should development (of the lowest vulnerability) proceed. Consideration may then be given to factors which moderate risks, such as defences, and finally consideration of suitable flood risk mitigation and site management measures is necessary.

It is important to note that whilst it may be technically feasible to mitigate or manage flood risk at site level, strategically it may not be a sustainable approach.

A summary of flood risks associated with each of the zoning objectives has been provided in Table 5-1, below. It should be noted that this table is intended as a guide only and should be read in conjunction with the detailed assessment of risks provided in Section 6. However, when applications are being considered it is important to remember that not all uses will be appropriate on flood risk grounds, hence the need to work through the Justification Test for Development Management on a site by site basis and with reference to Section 6. For example, the community zoning objective could include a highly vulnerable crèche, less vulnerable shops and water compatible car parking / sports facilities but they would not be equally permissible on the ground floor within Flood Zone A or B.

Table 5-1: Zoning objective vulnerability

Zoning Objective	Indicative Primary Vulnerability	Flood Risk Commentary
Existing/Permitted Residential	High vulnerability	Justification Test needs to be passed to allow zoning in Flood Zone A and B. For alterations to existing development see Section 5.2
New Residential - Phase 1 & 2	High vulnerability	Justification Test needs to be passed to allow zoning in Flood Zone A and B.
Utilities	High vulnerability	Justification Test needs to be passed to allow zoning in Flood Zone A and B. For alterations to existing development see Section 5.2.
Agriculture	High or less vulnerable or water compatible	Justification Test needs to be passed to allow highly vulnerable development (Farmhouses) in Flood Zone A and B and for less vulnerable development in Flood Zone B. Water compatible uses are appropriate.
Integrated Tourism and Leisure	High or less vulnerable	Justification Test needs to be passed to allow highly vulnerable development Flood Zone A and B and for less vulnerable development in Flood Zone B.
Community Services & Educational	High or less vulnerable or water compatible	Justification Test needs to be passed to allow highly vulnerable development Flood Zone A and B and for less vulnerable development in Flood Zone B.

Neighbourhood Facilities	High and less vulnerable	Justification Test needs to be passed to allow highly vulnerable development Flood Zone A and B and for less vulnerable development in Flood Zone B.
Town Centre	Less vulnerable, with some highly vulnerable	Justification Test needs to be passed to allow highly vulnerable development Flood Zone A and B and for less vulnerable development in Flood Zone B.
Industry and Warehousing and associated Office Use	Less vulnerable	Justification Test needs to be passed to allow zoning in Flood Zone B.
Enterprise & Employment	Less vulnerable	Justification Test needs to be passed to allow zoning in Flood Zone B.
Manufacturing, Tourism and Enterprise / Employment Development	Less vulnerable	Justification Test needs to be passed to allow zoning in Flood Zone B.
Open Space & Amenity	Water compatible or less vulnerable	Water compatible uses are appropriate. Justification needs to be passed to allow less vulnerable development in Flood Zone B.

5.2 Application of the Plan Making Justification Test

Having reviewed the proposed zoning objectives within the settlement it is clear that there is relatively little overlap between zoned **undeveloped** lands and potential conflict with flood risk. Where there are overlaps then specific measures can be put in place to define and avoid risk and the Justification Test has not been applied, this is discussed in Section 5.2.1.

There is relatively little **existing** development that is at potential risk of flooding and in this case zoning cannot be significantly amended, but measures can be put in place to manage risk at the 'Plan Making' level, this is discussed in Section 5.2.2.

Appropriate measures for assessing and managing risks to existing high and low vulnerability development in Flood Zones A, B and C at Development Management (Planning Application) stage is discussed in Section 5.3 onwards.

5.2.1 Development on Greenfield Land

The majority of undeveloped land that is within Flood Zone A or B is zoned for water compatible uses, such as Amenity and Open Space. This is an appropriate zoning and should continue. The exception is a small section of Town Centre lands near Bagenalstown House.

Risk specific uses and detailed FRA are discussed in Section 6 for each specific area. Measures focus on the more detailed assessment of risk from the contributing watercourses and the avoidance of highly vulnerable development within the redefined Flood Zone A.

Other proposals for new development on greenfield land within Flood Zone A or B would not pass the Justification Test and land is zoned accordingly with a water compatible or less vulnerable use.

5.2.2 Existing, Developed, Zoned Areas at Risk of Flooding

There are relatively few existing highly vulnerable uses sited within Flood Zone A/B. The waste water treatment plant is the most notable highly vulnerable existing land use within the settlement.

Consideration has been given to structural and non-structural measures which may be required prior to further development taking place. Structural responses to flooding from the River Barrow are not appropriate given the relatively small scale of risk to property and measures are limited to non-structural; warning and preparedness. However, future de-development can ensure flood resilience and appropriate floor levels and finishes to development.

The waste water treatment plant is vulnerable to the potential impacts of flooding and during the highest levels in recent memory during December 2015, was not subject to serious impacts. Consideration should be given to the future protection of the site.

5.2.3 Summary

In most areas of Muinebheag and Royal Oak for both existing areas of development and the development of greenfield sites, flood risk can be addressed through non-structural responses, such as requiring a site specific flood risk assessment which will identify appropriate mitigation measures such as retaining flow paths, flood resistant and resilient construction and emergency planning. Section 5.3 onwards provides general guidance on how to manage development and Section 6 provides a detailed review of risk to specific areas of the settlement.

5.3 Development Management and Flood Risk

In order to guide both applicants and relevant council staff through the process of planning for and mitigating flood risk, the key features of a range of development scenarios have been identified (relating the flood zone, development vulnerability and presence or absence of defences). For each scenario, a number of considerations relating to the suitability of the development are summarised below.

It should be noted that this section of the SFRA begins from the point that all land zoned for development has passed the Justification Test for Development Plans, and therefore passes Part 1 of the Justification Test for Development Management. In addition to the general recommendations in the following sections, Section 6 should be reviewed for specific recommendations for individual areas of the LAP.

As stated in Section 6, in order to determine the appropriate design standards for a development it may be necessary to undertake a site specific flood risk assessment. This may be a qualitative appraisal of risks, including drainage design. **Unfortunately, the level of detailed provided by the CFRAM mapping is not sufficient to inform finished floor levels, so a detailed assessment will be required for sites within or close to Flood Zone A/B.** Further details of each of these scenarios, including considerations for the flood risk assessment are provided in the following sections.

5.4 Requirements for a Flood Risk Assessment

It is recommended that an assessment of flood risk is required in support of any planning application where flood risk may be an issue and this may include sites in Flood Zone C where a small watercourse or field drain exists nearby. The level of detail will vary depending on the risks identified and the proposed land use. As a minimum, all proposed development, including that in Flood Zone C, must consider the impact of surface water flood risks on drainage design. In addition, flood risk from sources other than fluvial and tidal should be reviewed.

For sites within Flood Zone A or B, a site specific "Stage 2 - Initial FRA" will be required, and may need to be developed into a "Stage 3 - Detailed FRA". The extents of Flood Zone A and B are delineated through this SFRA. However, future studies may refine the extents (either to reduce or enlarge them) so a comprehensive review of available data should be undertaken once a FRA has been triggered.

Within the FRA the impacts of climate change and residual risk (including culvert/structure blockage) should be considered and remodelled where necessary, using an appropriate level of detail, in the design of finished floor levels. Further information on the required content of the FRA is provided in the Planning System and Flood Risk Management Guidelines.

Any proposal that is considered acceptable in principle shall demonstrate the use of the sequential approach in terms of the site layout and design and, in satisfying the Justification Test (where required), the proposal will demonstrate that appropriate mitigation and management measures are put in place.

5.5 Drainage impact assessment

It is recommended that all proposed development, whether in Flood Zone A, B or C, must consider the impact of surface water flood risks on drainage design. A suitable standard for this is specified by the surface water management policies in the Greater Dublin Strategic Drainage Study (GSDSDS). Consideration of the surface water risk should be in the form of a section within the flood risk assessment (for sites in Flood Zone A or B) or part of a surface water management plan.

Areas vulnerable to ponding are indicated on the OPW's PFRA mapping reproduced in Figure 4-3. Particular attention should be given to development in low-lying areas which may act as natural ponds for collection of runoff.

The drainage design should ensure no increase in flood risk to the site, or the downstream catchment. Where possible, and particularly in areas of new development, floor levels should at a minimum be 300mm above adjacent roads and hard standing areas to reduce the consequences of any localised flooding. Where this is not possible, an alternative design appropriate to the location may be prepared.

In addition, for larger sites (i.e. multiple dwellings or commercial units) master planning should ensure that existing flow routes are maintained, through the use of green infrastructure.

5.6 Development proposals in Flood Zone C

Where a site is within Flood Zone C, but adjoining or in close proximity to Flood Zone A or B there could be a risk of flooding associated with factors such as future scenarios (climate change) or in the event of failure of a defence, blocking of a bridge or culvert. Risk from sources other than fluvial and coastal must also be addressed for all development in Flood Zone C. As a minimum in such a scenario, a flood risk assessment should be undertaken which will screen out possible indirect sources of flood risk and where they cannot be screened out it should present mitigation measures. The most likely mitigation measure will involve setting finished floor levels to a height that is above the 1 in 100 year fluvial flood level, with an allowance for climate change and freeboard, or to ensure a step up from road level to prevent surface water ingress. Design elements such as channel maintenance or trash screens may also be required. Evacuation routes in the event of inundation of surrounding land should also be detailed.

The impacts of climate change should be considered for all proposed developments. Details of the approach to incorporating climate change impacts into the assessment and design are provided in Section 5.9.

5.7 Applications for Developments in Flood Zone A or B

5.7.1 Minor Developments

Section 5.28 of the Planning Guidelines on Flood Risk Management identifies certain types of development as being 'minor works' and therefore exempt from the Justification Test. Such development relates to works associated with existing developments, such as extensions, renovations and rebuilding of the existing development, small scale infill and changes of use.

Despite the 'Sequential Approach' and 'Justification Test' not applying, as they relate to existing buildings, an assessment of the risks of flooding should accompany such applications. This must demonstrate that the development would not increase flood risks, by introducing significant numbers of additional people into the flood plain and/or putting additional pressure on emergency services or existing flood management infrastructure. The development must not have adverse impacts or impede access to a watercourse, floodplain or flood protection and management facilities. Where possible, the design of built elements in these applications should demonstrate principles of flood resilient design (See 'The Planning System and Flood Risk Management Guidelines for Planning Authorities Technical Appendices, 2009', Section 4 - Designing for Residual Flood Risk).

Generally, the approach to deal with flood protection would involve raising the ground floor levels above the level of extreme river levels. If this leads to floor levels being much higher than adjacent streets it could create a hostile streetscape for pedestrians. This would cause problems for infill development sites if floor levels were required to be significantly higher than those of neighbouring properties. In this regard, it has been recognised that some flexibility could be allowed, in limited circumstances, on a site by site basis, for commercial and business developments. In these cases, the detailed design of the development should reflect the vulnerability of the site in terms of internal layout, materials, fixtures and fittings and internal layout. For high risk areas, less vulnerable uses are encouraged at ground floor levels. A site specific FRA will inform appropriate uses and detailed design and layout.

It should be noted that for residential buildings within Flood Zone A or B, bedroom accommodation is more appropriate at upper floor levels.

For commercial operations, business continuity must be considered, and steps taken to ensure operability during and recovery after a flood event for both residential and commercial developments. Emergency access must be considered as in many cases flood resilience will not be easily achieved in the existing built environment.

The requirement for providing compensatory storage for minor developments has been reviewed and can generally be relaxed, even where finished floor levels have been raised. This is because the development concerns land which has previously been developed and would already have limited capacity to mitigate flooding. However, a commentary to this effect must be substantiated in the site specific FRA.

5.7.2 Highly vulnerable development in Flood Zone A or B

Development which is highly vulnerable to flooding, as defined in The Planning System and Flood Risk Management, includes (but is not limited to) dwelling houses, hospitals, emergency services and caravan parks.

5.7.2.1 New development

It is not appropriate for new, highly vulnerable development to be located on greenfield land in Flood Zones A or B, particularly outside the core of a settlement and where there are no flood defences. Such proposals do not pass the Justification Test. Instead, a less vulnerable use should be considered.

In general the application of the sequential approach under this SFRA has ensured that there is only a small amount of land zoned for vulnerable use and the development is caveated by further analysis and avoidance (see Section 6), therefore ensuring the continued application of the sequential approach and appropriate site specific FRA.

For extant permissions in Flood Zone A/B lands have been re-zoned to water compatible use.

5.7.2.2 Existing developed areas

The Planning Circular (PL02/2014) states that *"notwithstanding the need for future development to avoid areas at risk of flooding, it is recognised that the existing urban structure of the country contains many well established cities and urban centres which will continue to be at risk of flooding. In addition, development plans have identified various strategically important urban centres ... whose continued consolidation, growth, development or generation, including for residential use, is being encouraged to bring about compact and sustainable growth."*

Minor/small scale infill housing, extensions or changes of use is discussed in Section 5.7.1 and, subject to site specific flood risk assessment, can generally be considered appropriate.

In cases where development is proposed, the outline requirements for a flood risk assessment and flood management measures have been detailed in this SFRA in both the following sections and the settlement review in Section 6. Of prime importance is the requirement to manage risk to the development site and not to increase flood risk elsewhere. This should give due consideration to safe evacuation routes and access for emergency services during a flood event.

5.7.3 Less vulnerable development in Flood Zone A or B

Less vulnerable development includes retail, leisure, warehousing, technology, enterprise and buildings used for agriculture and forestry a comprehensive categorisation of land uses and vulnerability is provided in Table 5-1.

The design and assessment of less vulnerable development should generally begin with 1% AEP fluvial event as standard, with climate change and a suitable freeboard included in the setting of finished floor levels. The site specific FRA should ensure that the risks are defined, understood, and accepted. Operability and emergency response should also be clearly defined. In a limited number of cases this may allow construction as low as the 1% AEP level to be adopted, provided the risks of climate change are included in the development through adaptable designs or resilience measures.

5.8 Key points for FRAs for all types of development

- Finished floor levels to be set above the 1% AEP fluvial level, with an allowance for climate change plus a freeboard of at least 300mm. The freeboard allowance should be assessed and the choice justified.
- Flow paths through the site and areas of surface water storage should be managed to maintain their function and without causing increased flood risk elsewhere.

- Compensatory storage is to be provided to balance floodplain loss as a result of raising ground levels within Flood Zone A. The storage should be provided within the flood cell and on a level for level basis up to the 1% level.
- In a defended site, compensatory storage is not required, but the impact of removing the net reduction in floodplain storage should be assessed, and any impacts to existing development mitigated for the 0.1% event or a breach of these defences.
- A site is considered to be defended if the standard of protection is 1% AEP, within which a freeboard of at least 300mm is included. The FFL of the proposed development needs to take into account the impacts of climate change and other residual risks, including the 0.1% event, unless this has also been incorporated into the defence design. This may be assessed through breach analysis, overtopping analysis or projection of levels from the channel inland.
- For less vulnerable development, it may be that a finished floor level as low as the 1% AEP level could be adopted, provided the risks of climate change are included in the development through adaptable designs or resilience measures. This approach should reflect emergency planning and business continuity to be provided within the development. It may reflect the design life of the development, the proposed use, the vulnerability of items to be kept in the premises, the occupants and users, emergency plan and inclusion of flood resilience and recovery measures.

5.9 Incorporating Climate Change into Development Design

The Flood Zones are determined based on readily available information and their purpose is to be used as a tool to avoid inappropriate development in areas of flood risk. Where development is proposed within an area of potential flood risk (Flood Zone A or B), a flood risk assessment of appropriate scale will be required and this assessment must take into account climate change and associated impacts.

Consideration of climate change is particularly important where flood alleviation measures are proposed as the design standard of the proposal may reduce significantly in future years due to increased rainfall and river flows. As recommended by the planning guidelines, a precautionary approach should be adopted.

Climate change may result in increased flood extents and therefore caution should be taken when zoning lands in transitional areas. In general, Flood Zone B, which represents the 0.1% AEP extent, can be taken as an indication of the extent of the 1% AEP flood event with climate change. In steep valleys (such as the main tributaries of the Barrow) an increase in water level will relate to a very small increase in extent, however in flatter low-lying basins a small increase in water level can result in a significant increase in flood extent, however it is noted that the River Barrow floodplain does not include a large variation between Flood Zone A and B.

For most development, including residential, nursing homes, shops and offices, the medium-range future scenario (20% increase in flows) is an appropriate consideration. This should be applied in all areas that are at risk of flooding (i.e. within Flood Zone A and B) and should be considered for sites which are in Flood Zone C but are adjacent to Flood Zone A or B. This is because land which is currently not at risk may become vulnerable to flooding when climate change is taken into account.

Where the risk associated with inundation of a development is low and the design life of the development is short (typically less than 30 years) the allowance provided for climate change may be less than the 20%. However, the reasoning and impacts of such an approach should be provided in the site specific FRA. An example of this might be commercial use in Town Centre lands or manufacturing uses potentially at risk of flooding from the River Barrow.

Conversely, there may be development which requires a higher level response to climate change. This could include major facilities which are extremely difficult to relocate, such as hospitals, Seveso sites or waste water treatment plants, and those which represent a high-economic and long term investment within the scale of development of the specific settlement. In such situations it would be reasonable to expect the high-end future scenario (30% increase in flow) to be used as the design standard.

Further consideration to the potential future impacts of climate change will be given for each settlement within Section 6.

5.10 Flood Mitigation Measures at Site Design

For any development proposal in an area at moderate or high risk of flooding that is considered acceptable in principle, it must be demonstrated that appropriate mitigation measures can be put in place and that residual risks can be managed to acceptable levels. It is anticipated that this will impact very few developments and should be predominantly limited to areas of existing development.

To ensure that adequate measures are put in place to deal with residual risks, proposals should demonstrate the use of flood-resistant construction measures that are aimed at preventing water from entering a building and that mitigate the damage floodwater causes to buildings. Alternatively, designs for flood resilient construction may be adopted where it can be demonstrated that entry of floodwater into buildings is preferable to limit damage caused by floodwater and allow relatively quick recovery.

Various mitigation measures are outlined below and further detail on flood resilience and flood resistance are included in the Technical Appendices of the Planning Guidelines, The Planning System and Flood Risk Management⁷.

It should be emphasised that measures such as those highlighted below should only be considered once it has been deemed 'appropriate' to allow development in a given location and it will predominantly be relevant to existing developed areas as all other undeveloped sites in Flood Zone A have been re-zoned to a less vulnerable land use. The Planning Guidelines do not advocate an approach of engineering solutions in order to justify the development which would otherwise be inappropriate.

5.10.1 Site Layout and Design

To address flood risk in the design of new development, a risk based approach should be adopted to locate more vulnerable land use to higher ground while water compatible development i.e. car parking, recreational space can be located in higher flood risk areas. This should be the preferred approach for sites with extant permissions where the permission expires, is subject to an extension of duration application or a new application is lodged.

The site layout should identify and protect land required for current and future flood risk management. Waterside areas or areas along known flow routes can be used for recreation, amenity and environmental purposes to allow preservation of flow routes and flood storage, while at the same time providing valuable social and environmental benefits.

5.10.2 Ground levels, floor levels and building use

Modifying ground levels to raise land above the design flood level is a very effective way of reducing flood risk to the particular site in question. However, in most areas of fluvial flood risk, conveyance or flood storage would be reduced locally and could have an adverse effect on flood risk off site. There are a number of criteria which must all be met before this is considered a valid approach:

- Development at the site must have been justified through this SFRA based on the existing (unmodified) ground levels.
- The FRA should establish the function provided by the floodplain. Where conveyance is a prime function then a hydraulic model will be required to show the impact of its alteration.
- Compensatory storage should be provided on a level for level basis to balance the total area that will be lost through infilling where the floodplain provides static storage.
- The provision of the compensatory storage should be in close proximity to the area that storage is being lost from (i.e. within the same flood cell).
- The land proposed to provide the compensatory storage area must be within the ownership / control of the developer.
- The land being given over to storage must be land which does not flood in the 1% AEP event (i.e. Flood Zone B or C).

⁷ The Planning System and Flood Risk Management Guidelines for Planning Authorities, Technical Appendices, November 2009

- The compensatory storage area should be constructed before land is raised to facilitate development.

In some sites it is possible that ground levels can be re-landscaped to provide a sufficiently large development footprint. However, it is likely that in other potential development locations there is insufficient land available to fully compensate for the loss of floodplain. In such cases it will be necessary to reconsider the layout or reduce the scale of development, or propose an alternative and less vulnerable type of development. In other cases, it is possible that the lack of availability of suitable areas of compensatory storage mean the target site cannot be developed and should remain open space.

Raising finished floor levels within a development is an effective way of avoiding damage to the interior of buildings (i.e. furniture and fittings) in times of flood.

Alternatively, assigning a water compatible use (i.e. garage / car parking) or less vulnerable use to the ground floor level, along with suitable flood resilient construction, is an effective way of raising vulnerable living space above design flood levels. It can however have an impact on the streetscape. Safe access and egress is a critical consideration in allocating ground floor uses.

Depending on the scale of residual risk, resilient and resistance measures may be an appropriate response but this will mostly apply to less vulnerable development.

5.10.3 Raised Defences

Construction of raised defences (i.e. flood walls and embankments) traditionally has been the traditional response to flood risk. However, this is not a preferred option on an ad-hoc basis where the defences to protect the development are not part of a strategically led flood relief scheme - and there is no such scheme in Muinebheag/Royal Oak, nor is the site designated for further study within the CFRAM.

If there were ever to be a proposal for such provision of flood defence, the impact of the scheme on flood risk up and downstream must be assessed and appropriate compensatory storage must be considered.

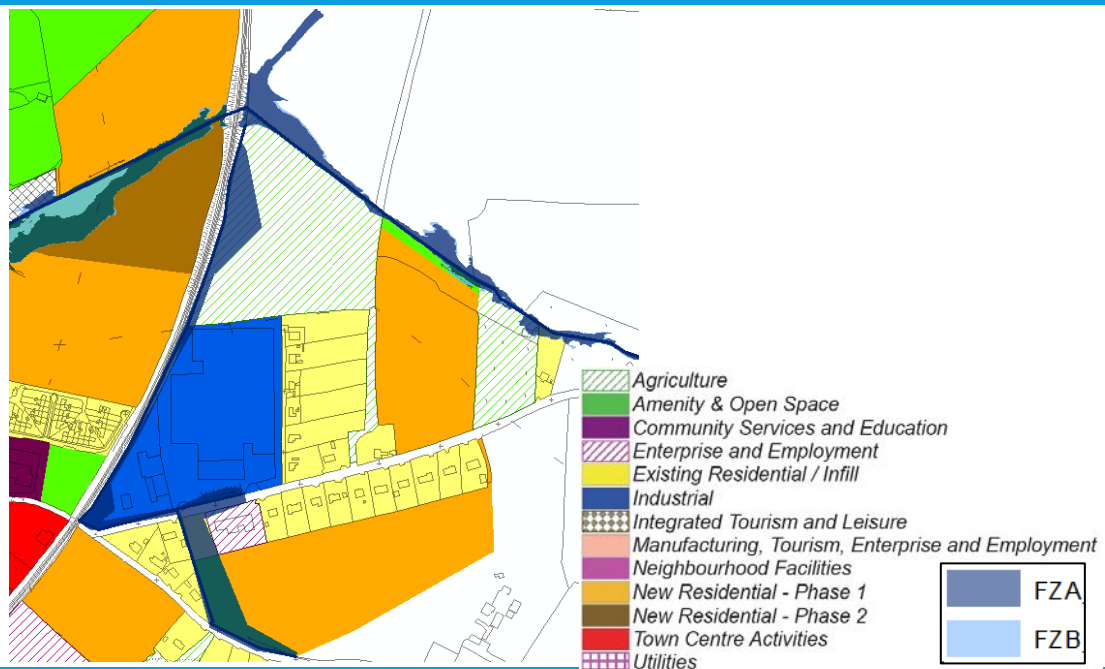
6 Settlement Review

In the following sections, a review of flood risk to key sites has been provided, along with recommendations for the development of these sites. Reference is made to general management measures that are discussed in more detail under Section 5 of this report.

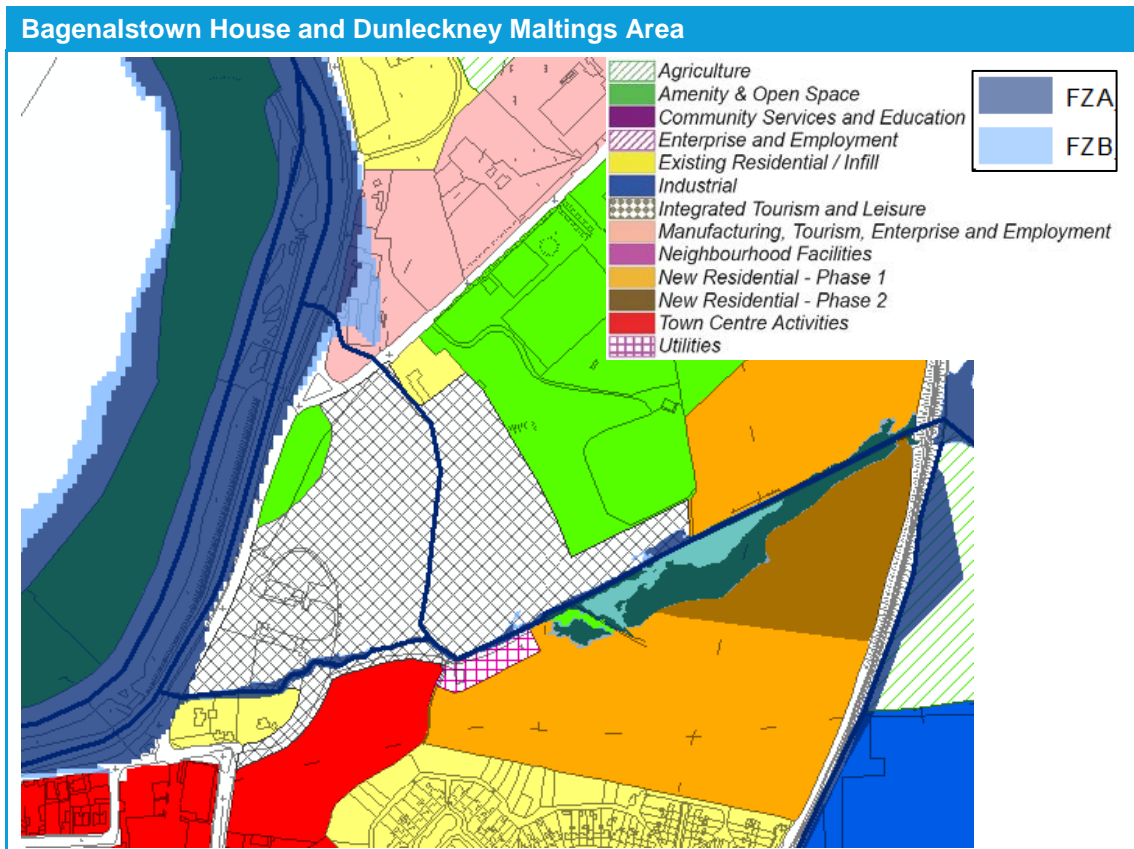
For each site consideration of flood risk will be required at the development management stage of the planning process. This ranges from an assessment of surface water drainage for sites within Flood Zone C, to more considered FRAs for sites in Flood Zone A and B. The lack of detailed information for the River Barrow under the CFRAM programme necessitates that in some cases detailed flood risk assessment will be required to define flood levels and lead mitigation design, but in other areas it is generally possible to understand risks through an initial FRA without incurring the cost and time input required for a detailed FRA.

In all cases, the advice on flood mitigation for site design contained in Section 5 should be followed, along with any site specific recommendations detailed in the following sections.

6.1 Lands Upstream of Railway Line

Lands Upstream of Railway Line	
	
Flood Zone Data	1D hydraulic modelling and JBA site visit adjusted outlines.
Flood Risk Overview	Potential flood risk from Dunleckney Stream and an un-named watercourses approaching from south and east. Flood extents have also been verified by site visit and represent a conservative estimate on the un-named tributary that flows south to north.
Sensitivity to Climate Change	Low
Historical Flooding	None noted
<p>Comment:</p> <p>Significant undeveloped residential zoned land exists within this area, but the lands within Flood Zone A/B are appropriately zoned as amenity and open space.</p> <p>Three extant permissions for development on these undeveloped residential lands are partly within Flood Zone A and were granted prior to the application of the Planning System and Flood Risk Management Guidelines. Any extension of duration applications must be subject to adequately detailed FRA and the Justification Test. Future applications on these sites will be subject to the revised zoning and FRA is still required at development management stage - in accordance with the requirements stated under Section 5 of this SFRA.</p>	

6.2 Bagenalstown House and Dunleckney Maltings Area



Flood Zone Data	1D hydraulic modelling for Dunleckney Stream. JBA site visit adjusted outlines on the un-named tributary. OPW draft CFRAM MPW outlines for the River Barrow.
Flood Risk Overview	Potential flood risk from the Dunleckney Stream approaching from east. Flood extents have been verified by site visit and represent a conservative estimate. OPW draft CFRAM MPW flood outline for the Barrow have been completed to a moderate/high standard of detail, similar to Dunleckney Stream.
Sensitivity to Climate Change	Low/Moderate
Historical Flooding	Flooding to two residential properties to the south of Bagenalstown House. Note that this problem has been sourced back to a section of old millrace being closed and as a result this section of millrace stopped functioning as an overflow for the stream that has been causing the flooding on the R705. Remedial action was undertaken in May 2016 to rectify this matter.

Comment:

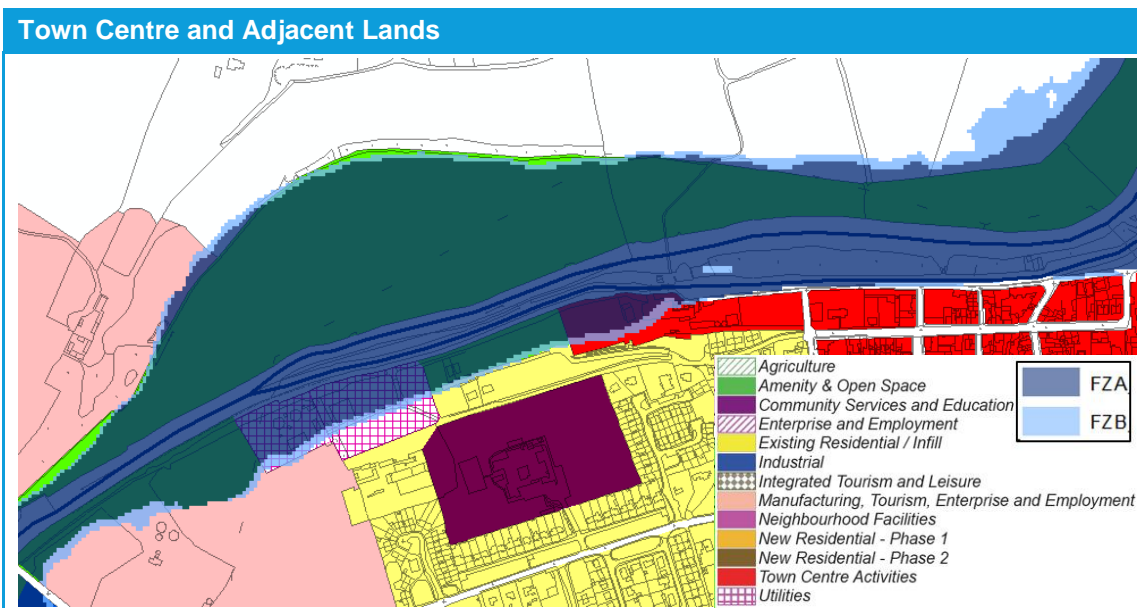
A margin of undeveloped residential zoned land and Town Centre land is zoned within Flood Zone A. Similarly, a small section of lands zoned as Integrated Tourism and Leisure are zoned within Flood Zone A. These zoning objectives can accommodate a range of vulnerability of uses that alternate from highly vulnerable to water compatible. Prior to any development on these lands a detailed FRA must be completed to redefine the extent of flooding, particularly from the Mill Race and demonstrate that risk can be managed. The sequential approach must be followed and the Justification Test applied where necessary which will ensure that no highly vulnerable use is included within Flood Zone A/B. Consideration of compensatory storage must be included if any land raising within Flood Zone A is proposed, but this should be avoided in most cases. Further requirements are detailed in Section 5, particularly that within Section 5.7

and 5.10.

Undeveloped residential zoned land exists within this area, but the lands within Flood Zone A/B are appropriately zoned as amenity and open space. However, one extant permission for development encroaches into Flood Zone A/B. The extant permission was granted prior to the application of the Planning System and Flood Risk Management Guidelines. Any extension of duration applications must be subject to adequately detailed FRA and the Justification Test. Future applications on these sites will be subject to the revised zoning and FRA is still required at development management stage - in accordance with the requirements stated under Section 5 of this SFRA.

The Dunleckney Maltings site is at risk from the River Barrow and any development of the site must also be subject to appropriately detailed FRA and the considerations stipulated within Section 5.7 and 5.10 of this report.

6.3 Town Centre and Adjacent Lands



Flood Zone Data	OPW draft CFRAM MPW outlines for the River Barrow, site verified by JBA Consulting.
Flood Risk Overview	The River Barrow is flanked by a navigation channel through the town centre and there is some predicted flood risk to a linear margin of existing development to the east of the Town Centre Zoning.
Sensitivity to Climate Change	Low/Moderate
Historical Flooding	Limited flooding of the WWTP site in December 2015.

Comment:

The River Barrow is flanked by a navigation channel through the town centre with a road and line of existing development that includes historic mill buildings that have a range of mixed uses under Town Centre zoning. Adjacent lands are zoned open space and also include the waste water treatment plant.

There is no undeveloped greenfield land within Flood Zone A/B within this area that has been zoned for high or less vulnerable use.

Flood risk to this area is present to existing development zoned as Town Centre and also Utilities (waste water treatment plant). Flood risk to the existing core of the town must focus on practical measures to ensure that any re-development of at risk sites are conducted sensitively, apply the sequential approach as far as possible and undergo an appropriate level of FRA to minimise risk to the building and occupants - as specified under Section 5, particularly that within Section 5.7 and 5.10.

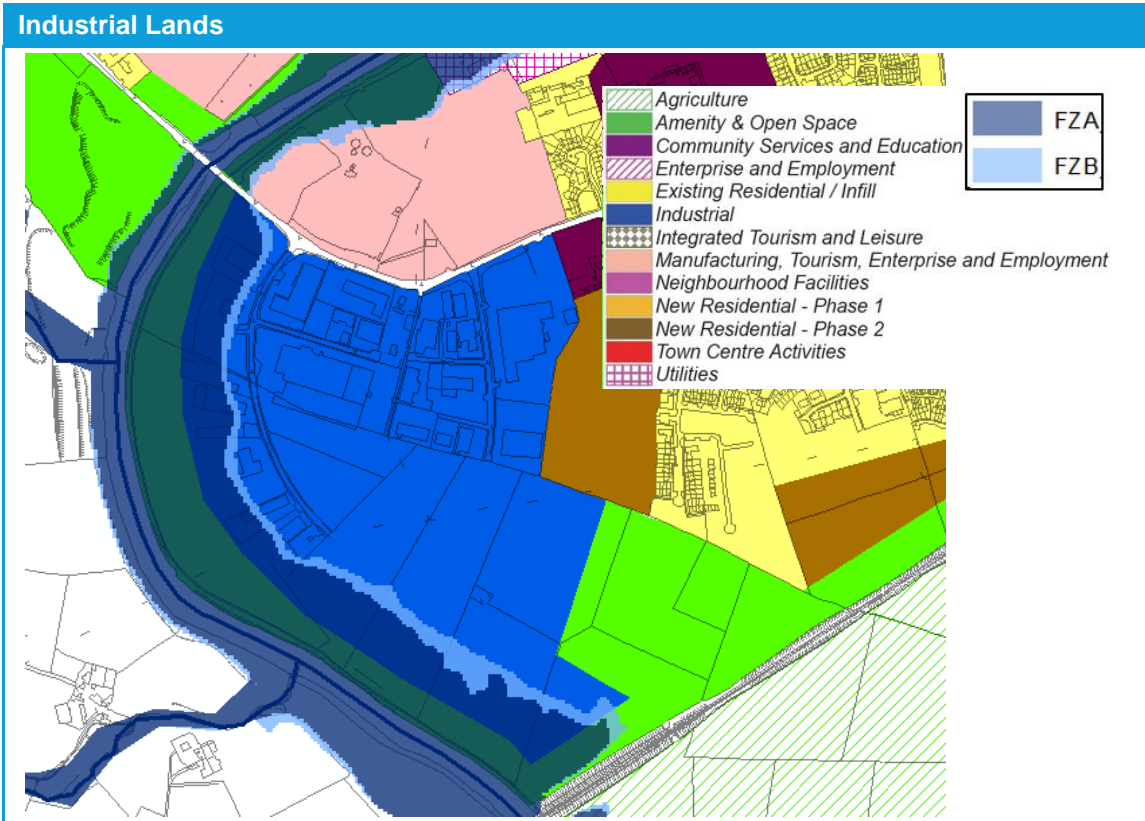
Given the predicted flood risk to the waste water treatment plant it will be necessary to consider any future upgrades to the site very carefully and given the high vulnerability of the site this should include appropriate risk mitigation measures. Further reference is provided in Section

5.7 and 5.10.

A potential extant permission for residential development encroaches into Flood Zone A/B. The extant permission was granted prior to the application of the Planning System and Flood Risk Management Guidelines. Any extension of duration applications must be subject to adequately detailed FRA and the Justification Test. Future applications on these sites will be subject to the revised zoning and FRA is still required at development management stage - in accordance with the requirements stated under Section 5 of this SFRA.

The former meat factory site is brownfield and areas within Flood Zone A are appropriately zoned as water compatible. Future development of the site would require appropriately detailed FRA.

6.4 Industrial Lands adjacent to River Barrow

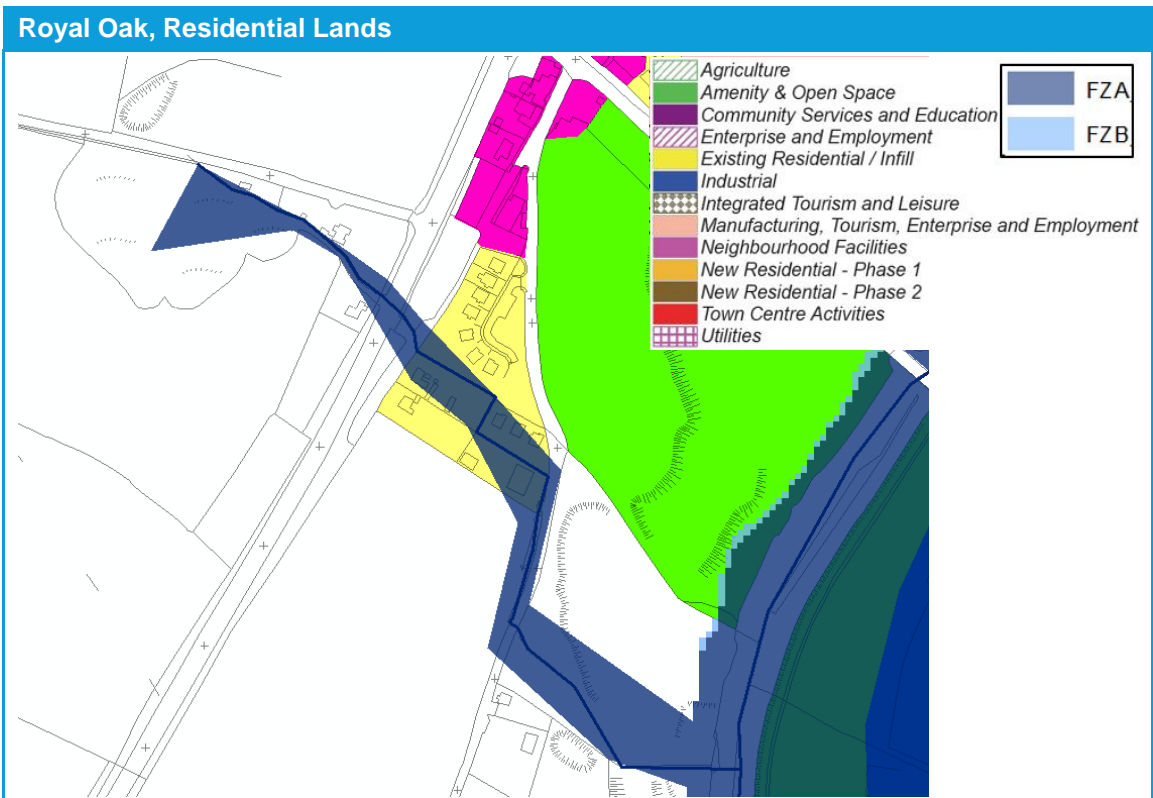


Flood Zone Data	OPW draft CFRAM MPW outlines for the River Barrow, site verified by JBA Consulting.
Flood Risk Overview	The River Barrow extends across a margin of part developed and undeveloped zoned industrial land (Business Park). Existing development within the business park and a large extant permission is in place for the undeveloped zoned lands that encroach within Flood Zone A/B.
Sensitivity to Climate Change	Low/Moderate
Historical Flooding	Possible encroachment into the undeveloped floodplain but no recorded incidents of flooding to the Business Park itself.
Comment:	The developed part of the Business Park is at potential risk from flooding from the River Barrow and is located partly within Flood Zone A/B. The undeveloped zoned industrial land is located within Flood Zone A/B/C. Existing development within the Business Park is sited on raised land and avoided being flooded during December 2015, however it is still at potential risk from a significant 1% AEP event. Any proposed redevelopment of existing parts of the Business Park must be subject to appropriately

detailed FRA as specified within Section 5, particularly that within Section 5.7 and 5.10. The undeveloped zoned land within Flood Zone A/B is subject to an extant planning permission which included a hydrological study confirming the flood risk management approach. In this specific case the Justification Test does not need to be applied, lands can be developed as planned, however further analysis of the loss of floodplain and consistency of floor levels using updated CFRAM analysis would be required. Should the site remain unconstructed and the planning application lapses, any future planning applications on the site (prior to the next variation or draft of the LAP) should be subject to an appropriately detailed FRA specific to the new site layout that includes hydraulic modelling to a standard that improves upon the OPW CFRAM approach. The sequential approach should be applied within the proposed site and the FRA must be able to demonstrate that the proposed development can offer compensatory storage to sustainably manage flood risk and not increase flood levels to surrounding development.

Under the next variation or draft of the LAP (if there is no extant permission in place) the lands and zoning should be considered in line with the sequential approach and Justification Test for Plan Making.

6.5 Royal Oak Residential Lands



Flood Zone Data	JBA site visit adjusted outlines.
Flood Risk Overview	Potential flood risk to existing, part developed zoned land from a small and un-named tributary approaching from north west. Part built estate has installed inappropriate culvert configuration, potentially increasing risk to surrounding land. Flood extents have been verified by site visit and represent a conservative estimate.
Sensitivity to Climate Change	Low
Historical Flooding	2 houses flooded previously, inappropriate culverting in place. Recurring flooding noted to the Wells Ford area.
Comment:	There is no undeveloped/greenfield land zoned for highly vulnerable use within Flood Zone A/B.

With regard to the part developed existing residential site, the any further development of the site will require reappraisal of the culvert design and mitigation under a detailed FRA for the site in accordance with the guidance provided within Section 5, particularly that within Section 5.7 and 5.10.

It is unclear if there is an extant permission in place on the lands, however any extension of duration applications must be subject to adequately detailed FRA and stipulation that the culvert on site is mitigated.

Risk to existing property can be managed by the proposals in the previous paragraphs or through site works facilitated by Carlow County Council.

7 SFRA Review and Monitoring

An update to the SFRA will be triggered by the six-year review cycle that applies to Local Authority development plans. In addition, there are a number of other potential triggers for an SFRA review and these are listed in the table below.

There are a number of key outputs from possible future studies and datasets, which should be incorporated into any update of the SFRA as availability allows. Not all future sources of information should trigger an immediate full update of the SFRA; however, new information should be collected and kept alongside the SFRA until it is updated.

Muinebheag and Royal Oak is not currently subject to a detailed flood risk mapping and management study under the CFRAM. However, it is subject to MPW flood mapping of the River Barrow which is currently at draft status. It will be necessary to review the results and recommendations of the CFRAM with respect to the LAP when results are finalised.

Detailed, site specific FRAs may be submitted to support planning applications. Whilst these reports will not trigger a review of the Flood Zone maps or SFRA, they should be retained and reviewed as part of the next cycle of the Development Plan.

Table 7-1 SFRA Review Triggers

Trigger	Source	Possible Timescale
Catchment Flood Risk Assessment and Management (CFRAM) Flood Hazard Mapping - Final	OPW under the Floods Directive	2016
South Eastern River Basin Flood Risk Management Plan	OPW	2016, and 6 yearly reviews
Flood maps of other sources, such as drainage networks	Various	Unknown
Significant flood events	Various	Unknown
Changes to Planning and / or Flood Management Policy	DoEHLG / OPW	Unknown



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