

BRAY MUNICIPAL DISTRICT  
DRAFT LOCAL AREA PLAN 2017

**APPENDIX A**  
**Strategic Environmental Assessment**



WICKLOW COUNTY COUNCIL  
AUGUST 2017

Wicklow County Council

**Draft Bray Municipal District  
Local Area Plan 2017-2023**

**Appendix A- Draft SEA  
Environmental Report**

251896/Bray SEA/Rev2

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This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 251896

**Arup**  
50 Ringsend Road  
Dublin 4  
D04 T6X0  
Ireland  
[www.arup.com](http://www.arup.com)

**ARUP**

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# Non-Technical Summary

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## Introduction

This non-technical summary has been prepared to support the Strategic Environmental Assessment (SEA) of the Draft Bray Municipal District Local Area Plan 2017-2023 (Draft LAP). This document has been prepared in accordance with relevant EU and national legislation to summarise the Environmental Report for the SEA of the Draft LAP. It draws attention to the most important issues and provides information on other significant topics. Further detail can be found in the Environmental Report.

The relevant planning legislation comprises the Planning and Development Act 2000, as amended and the Planning and Development Regulations 2001, as amended. Key planning documents reviewed as part of the SEA include the following:

- The Regional Planning Guidelines for the Greater Dublin Area 2010-2022;
- Greater Dublin Area Transportation Study 2016-2035;
- Wicklow County Development Plan 2016 – 2022;
- Wicklow Local Economic and Community Plan 2016-2022;
- County Wicklow Heritage Plan 2009 – 2014; and
- County Wicklow Biodiversity Action Plan 2010-2015.

Cognisance was also given to a wide range of environmental legislation, plans and programmes at international, national, regional and local level for their relevance to the Draft LAP.

## Draft Bray Municipal District Local Area Plan 2017-2023

The Draft LAP represents the main statement of planning policies and objectives for the Bray municipal district (hereafter referred to as the plan area) for the period to 2023 and beyond.

The policies and objectives described in the Draft LAP are critical in determining the appropriate location and typology of development in the plan area. The Draft LAP is the primary statutory land use policy framework against which planning applications are assessed. The objectives of the LAP are also used by Wicklow County Council to guide their activities as local authority and to indicate priority areas for action and investment such as attracting employment and enhancing the plan area as a centre for tourism.

When adopted, the Draft LAP will replace the Bray Town Development Plan 2011-2017 and the Bray Environs Local Area Plan 2009-2017 (hereafter referred to as the preceding LAPs). Further the settlements of Enniskerry and Kilmacanogue will be incorporated as part of this Draft LAP and all references to these areas within the County Development Plan will be removed.

## SEA Methodology

European Council Directive 2001/42/EC (the SEA Directive) provides guidance on the assessment of effects of certain plans and programmes. Article 1 identifies that the objective of the SEA Directive is ‘to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans ... with a view to promoting sustainable development’.

It is a systematic, on-going process for evaluating, at the earliest possible stage, the environmental quality and consequences of implementing certain plans and programmes on the environment.

The methodology for this SEA is based on legislative requirements and guidance from the Environmental Protection Agency (EPA) to ensure compliance with the SEA Directive and associated national legislation.

## Current State of the Environment

The SEA considers the current environmental conditions, hereafter referred to as the baseline. This description of the baseline considers the local level nature of the plan and is cognisant of the pressures and interrelationships between environmental topics within the plan area.

The baseline considers the following environmental aspects:

- Biodiversity;
- Population and Human Health;
- Land and Soils;
- Water;
- Air, Noise and Climate;
- Heritage;
- Landscape and Visual; and
- Material Assets.

The plan area is located in the north of County Wicklow approximately 22 kilometres (km) from Dublin (refer to Figure 1.1). Bray is the largest town in plan area located on the coast of the Irish Sea. The plan area has excellent transport links, with access to the M11/N11 to the west of the town, the DART and regional railway line that connects with County Wexford and Dublin as well as a quality regional and local bus service. The plan areas history is well documented from Anglo Norman times, however the main development of the town coincided with the arrival of the railway in 1843. From the late 19th century, the town developed as a popular seaside resort and quickly became the largest town in County Wicklow.

## Consideration of Alternatives

Alternative development scenarios were considered in the preparation of the Draft LAP. These options primarily related to:

- **Scenario 1 – Consolidation of Bray town centre.** This scenario would increase the density of development within the existing town centre and change suitable, existing non-residential land use to residential use;
- **Scenario 2a – Consolidation of the town centre and development in Fassaroe.** This scenario would increase the density of existing housing/mixed use and town/centre lands in Bray and change non-residential lands to residential use to increase housing in Fassaroe;
- **Scenario 2b – Consolidation of the town centre and development in Fassaroe and greenfield lands.** This scenario would increase the density of existing housing/mixed use and town/centre lands in Bray and change non-residential lands to residential use to increase housing in Fassaroe and in the periphery of the town;
- **Scenario 2c – Consolidation of the town centre and development in Fassaroe and Kilruddery.** This scenario would increase the density of housing and change non-residential lands to residential use to increase housing in Bray, Fassaroe and Kilruddery; and

- **Scenario 3 – Development of new greenfield lands at the periphery.** This scenario would rezone greenfield land at the town periphery to accommodate additional development.

Scenario 2c was considered the emerging preferred scenario as it increases the density and availability of housing to meet the projected population growth for the plan area.

## Objectives, Targets and Indicators

The SEA is designed to assess the potential environmental impact of the Draft LAP and its associated policies and objectives against the established baseline. The policies and objectives outlined in the Draft LAP are assessed against a range of established environmental objectives and targets.

Indicators that are recommended in this Environmental Report are utilised over the lifetime of the Draft LAP to quantify the level of impact that the policies and objectives have on the environment. This enables the measurement of whether Wicklow County Council were successful in promoting the sustainable development of the area.

## Assessment of Likely Significant Effects

The policies and objectives in the Draft LAP were assessed with respect to the existing environmental baseline and the environmental objectives and targets.

As the policies included in the Draft LAP have been designed to promote sustainability and to protect the environment, the majority of recommendations have positive impacts. Matrices were prepared to identify potential impacts across the plan area and those likely impact relevant to specific portions of the plan area.

## Mitigation Measures

This Environmental Report has highlighted some potential negative environmental impacts that may arise from the implementation of the Draft LAP. A number of mitigation measures have been identified to prevent, reduce and as fully as possible offset any significant adverse impacts on the environment associated with the implementation of the Draft LAP.

It is envisaged that all planning applications for new developments in the plan area will be environmentally assessed, as required, and specific mitigation proposed, where appropriate.

## SEA Monitoring

Article 10 of the SEA Directive requires that monitoring should be carried out to identify (at an early stage) any unforeseen adverse impacts associated with the implementation of the plan or programme.

A monitoring programme has been developed as part of this SEA (based on the relevant indicators) to track progress towards achieving strategic environmental objectives and reaching targets. As previously described, indicators have been developed to show changes that would be attributable to implementation of the Draft LAP, therefore enabling positive and negative impacts to be measured.

This SEA Environmental Report has ensured that any potential significant environmental impacts have been identified and given due consideration.

Wicklow County Council is responsible for collating existing relevant monitored data, the preparation of preliminary and final monitoring evaluation reports, the publication of these reports and, if necessary, the carrying out of corrective action.

# 1 Introduction

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Arup was appointed by Wicklow County Council to carry out a Strategic Environmental Assessment (SEA) of the Draft Bray Municipal District (MD) Local Area Plan 2017-2023 (Draft LAP). This Draft Environmental Report presents the findings of the SEA and the likely significant impacts on the environment as a result of the Draft LAP.

A SEA Scoping Report was previously prepared to provide information and support statutory consultation activities that determine the appropriate scope and level of detail to be considered in the SEA. Any issues or concerns raised during the scoping process and/or associated consultation has been incorporated into this report. An SEA Statement accompanies this Environmental Report.

## 1.1 Planning Context

The relevant planning legislation comprises the Planning and Development Act 2000, as amended and the Planning and Development Regulations 2001, as amended.

The Draft LAP will sit within a hierarchy of national, regional and local plans. The relevant plans include the National Spatial Strategy 2002-2020 (National Spatial Strategy), Regional Planning Guidelines for the Greater Dublin Area 2010-2022 (Regional Planning Guidelines), the Wicklow County Development Plan 2016-2022 (County Development Plan) and other local area plans within County Wicklow. The relevant planning policy was taken into account in preparing the Draft LAP and undertaking the SEA.

### 1.1.1 National Spatial Strategy

The National Spatial Strategy sets the national context for spatial planning from 2002-2020. The National Spatial Strategy deals with development at regional and local level in broad terms and aims to achieve a better balance of social, economic and physical development. The Planning and Development Act 2000, as amended requires that the National Spatial Strategy is integrated with both regional planning guidelines and county and city development plans.

### 1.1.2 Regional Planning Guidelines

The Regional Planning Guidelines are the main means by which to implement the National Spatial Strategy in the Dublin and mid-east region, as detailed in Section 21 of the Planning and Development Act 2000, as amended. The Regional Planning Guidelines give effect to the National Spatial Strategy at regional level and provide more detailed guidance and policy. The Regional Planning Guidelines must be consistent with the overall context of the National Spatial Strategy and the overall objective is to provide a long-term strategic planning framework for the development of the region.

### 1.1.3 County Development Plan

The County Development Plan must have regard to national and regional strategies and guidelines to both inform and structure land use policies. Development Plans provide the key policy context for individual planning decisions within the Development Plan area. In addition, the Guidelines for Planning Authorities outlines that good Local Area Plans will also inform policies at regional and national level.



### 1.1.4 Planning Hierarchy

The hierarchy of the planning process within Ireland is summarised in the flow chart depicted in Figure 1.1. This flow chart (adapted from the Department of Environment, Heritage and Local Government)<sup>1</sup> indicates where the Draft LAP falls within the planning hierarchy.

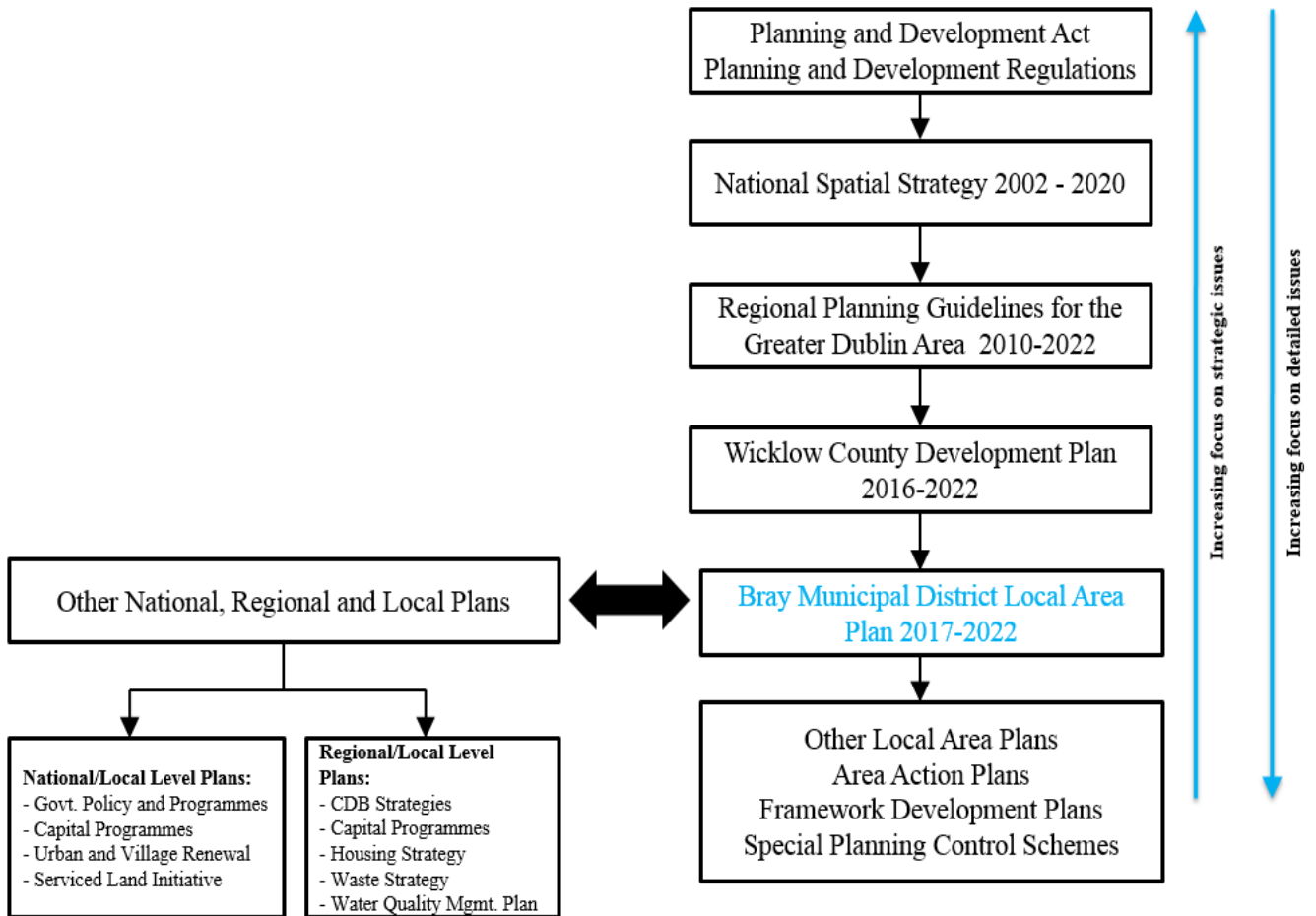


Figure 1.1: Hierarchy of the planning process in Ireland

### 1.2 Relationship of the Plan to other Plans and Programmes

As part of the SEA process the context of the Draft LAP must be established with regard to other plans and programmes that have been adopted at international, national, regional and local level. Specifically, the interaction of the Draft LAP with the environmental protection objectives and standards included within these other plans and programmes must be considered.

A wide range of legislation, plans and programmes are of relevance to the Draft LAP and are outlined in Table 1.

<sup>1</sup> DoEHLG (2007) *Planning Guidelines – Development Plans: Guidelines for Planning Authorities*. Available from <http://www.housing.gov.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/Planning/NationalSpatialStrategy/FileDownload%2C14468%2Cen.pdf>

Table 1: Hierarchy of relevant legislation, plans and programmes

Level	Legislation, Plans and Programmes
<b>International / EU Level</b>	Water Framework Directive & associated Directives SEA Directive Floods Directive Groundwater Directive Habitats Directive Birds Directive Freshwater Fish Directive Shellfish Directive Drinking Water Directive Bathing Water Directive EIA Directive Seveso Directive Sewage Sludge Directive Urban Waste Water Treatment Directive Waste Framework Directive Nitrates Directive Soils Directive Air Quality Directives including Framework Directive Directive on the Reduction of National Emissions of Certain Atmospheric Pollutants Environmental Noise Directive Industrial Emissions Directive EU Reach Initiative European Landscape Convention UN Convention of Biological Diversity, 1992 The Paris Agreement Stockholm Convention Ramsar Convention OSPAR Convention Granada Convention Gothenburg Strategy EU Climate Change and Renewable Energy Package 2030 Climate & Energy Framework
<b>National Level</b>	A Programme for Partnership Government 2016 Building on Recovery: Infrastructure and Capital Investment 2016-2021 Policy Position on Climate Action and Low-Carbon Development. National Policy Position Ireland (2014) Delivering a Sustainable Energy Future for Ireland - The Energy Policy Framework 2007-2020 National Energy Efficiency Action Plan 2013-2020 National Spatial Strategy 2002-2020 Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (2015) Quality Housing for Sustainable Communities. Best Practice Guidelines for Delivering Homes Sustaining Communities (2007) The Planning System and Flood Risk Management. Guidelines for Planning Authorities (2009)

Level	Legislation, Plans and Programmes
	<p>Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas (Cities, Towns &amp; Villages) (2009)</p> <p>Guidelines for Planning Authorities – Retail Planning (2012)</p> <p>Local Area Plans - Guidelines for Planning Authorities (2013)</p> <p>Guidelines for Planning Authorities – Spatial Planning and National Roads (2012)</p> <p>Our Sustainable Future – A Framework for Sustainable Development for Ireland (2012)</p> <p>Actions for Biodiversity 2011-2016 (2<sup>nd</sup> National Biodiversity Plan)</p> <p>Draft 3<sup>rd</sup> National Biodiversity Strategy and Action Plan (2016)</p> <p>Appropriate Assessment of Plans and Projects in Ireland. Guidelines for Planning Authorities (revised 2010)</p> <p>Architectural Heritage Protection - Guidelines for Planning Authorities (2004)</p> <p>Guidelines for Planning Authorities - Retail Planning (2012)</p> <p>Government Policy on Architecture 2009-2015</p> <p>National Policy on Town Defences (2008)</p> <p>Implementation of Regional Planning Guidelines Best Practice Guidance (2010)</p> <p>Irish Water’s Capital Investment Plan,</p> <p>Irish Water’s Water Services Strategic Plan</p> <p>Climate Action and Low-Carbon Development Act 2015</p> <p>National Climate Mitigation Plan</p>
<b>Regional Level</b>	<p>Regional Planning Guidelines for the Greater Dublin Area 2010-2022</p> <p>Retail Strategy for the Greater Dublin Area 2008-2016</p> <p>Transport Strategy for the Greater Dublin Area up to 2035</p> <p>Eastern River Basin District River Basin Management Plan 2009 – 2013 (National River Basin Management Plans 2015-2021 currently in preparation)</p> <p>Eastern-Midlands Region Waste Management Plan 2015-2021</p> <p>Eastern Catchment Flood Risk Assessment Management (CFRAM) Study</p> <p>Flood Risk Management Plans</p> <p>Groundwater Protection Schemes</p>
<b>Local Level</b>	<p>Wicklow County Development Plan 2016-2022</p> <p>South East Draft Flood Risk Management Plans (2016)</p> <p>County Wicklow Heritage Plan 2009 - 2014</p> <p>County Wicklow Biodiversity Action Plan 2010-2015</p> <p>Other Local Area Plans within County Wicklow</p>

## 2 Bray Municipal District Local Area Plan 2017-2023

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### 2.1 Introduction

The Draft LAP represents the main statement of planning policies and objectives for the Bray municipal district (hereafter referred to as the plan area). The policies and objectives outlined in the Draft LAP are critical in determining the appropriate location and form of different types of development permitted in the plan area. The Draft LAP is the primary statutory land use policy framework against which planning applications in the plan area are assessed.

The objectives of the Draft LAP are also used by Wicklow County Council to guide their activities and to indicate priority areas for action and investment such as attracting employment or enhancing the plan area as a centre for tourism.

The Draft LAP is a key document for setting out a vision for how the plan area should develop to 2023 and beyond. The plan is consistent with the objectives set out in the following documents:

- Regional Planning Guidelines;
- Greater Dublin Area Transportation Study 2016-2035;
- County Development Plan;
- Wicklow Local Economic and Community Plan 2016-2022;
- County Wicklow Heritage Plan 2009 – 2014 (Heritage Plan); and
- County Wicklow Biodiversity Action Plan 2010-2015 (Biodiversity Action Plan).

### 2.2 Vision and Development Strategy

#### 2.2.1 Vision

A key aim of any local development plan is to set out the vision and development strategy for the future development of the plan area and from this vision, all policies and objectives can be developed and implemented with the overall aim of achieving this vision.

The vision and development strategy for the Draft LAP must be consistent with the ‘Core Strategy’ of the County Development Plan and reflect the characteristics, strengths and weaknesses of the plan area.

The vision for the Draft LAP is:

*“For the Bray Municipal District to be a cohesive community of people enjoying distinct but interrelated urban and rural environments; where natural surroundings and important resources are protected; where opportunities abound to live and work in a safe atmosphere, allowing people to enjoy the benefits of well paid jobs, a variety of housing choices, excellent public services, ample cultural and leisure opportunities, and a healthy environment.”*

#### 2.2.2 Development Strategy

The Development Strategy describes the factors that have influenced the Draft LAP, in particular the higher order plans and strategies as well as the physical factors and the desired pattern of development, that have influenced the crafting of the Draft LAP.

As described in Section 2.1, the Draft LAP has been influenced by a hierarchy of legislation and plans. Further, the Development Strategy considers the existing baseline and physical factors of relevance in the plan area (further detail is available in Section 4). Table 2 describes the key elements of the Development Strategy as they apply to the Draft LAP.

Table 2: The Development Strategy for the plan area as described in the Draft LAP

Strategy	Key points
Residential Development Strategy	<ul style="list-style-type: none"> <li>• To adhere to the objectives of the Wicklow County Development Plan in regard to population and housing as are applicable to Bray MD.</li> <li>• To ensure sufficient zoned land is available at appropriate locations capable of meeting the housing needs of the projected population of the settlements in the MD over the plan period in a sustainable manner. Notwithstanding the zoning of land for residential purposes, the Planning Authority shall monitor and implement the population targets as set out in the County Development Plan and shall phase and restrict, where necessary, the granting of residential planning permissions to ensure these targets are not exceeded.</li> <li>• To promote and facilitate in-fill housing developments, the use of under-utilised / vacant sites and vacant upper floors for residential use and facilitate higher residential densities at appropriate locations, subject to a high standard of design, layout and finish.</li> <li>• To promote and facilitate the redevelopment of sites in town centres, including identified opportunity sites, where development will positively contribute to the commercial and residential vitality of the town centre.</li> <li>• To promote and facilitate the rapid delivery of the maximum number of housing units in the key development areas of Fassaroe and the former Bray golf club.</li> </ul>
Economic Development and Employment Strategy	<ul style="list-style-type: none"> <li>• To build on the Bray MD's distinctive qualities to develop a dynamic, regionally competitive economy that creates wealth and provides quality sustainable work opportunities for all the residents of the district;</li> <li>• To encourage in the first instance, job creation in the existing town centres, in retail and retail services, professional services, tourism, accommodation;</li> <li>• The encourage and facilitate the change of use of existing non-commercial properties in the town core to commercial or employment uses, particularly small to medium size enterprises and start-ups;</li> <li>• To ensure sufficient zoned land is available in appropriate locations capable of facilitating the development of appropriate employment opportunities in accordance with the provisions of the County Development Plan. Maintain existing, developed employment lands and resist changing the zoning or use of such sites, particularly to residential uses, except where local conditions can justify same. In such limited circumstances, employment providing development may still be required as part of the package of development including residential;</li> <li>• To target that at least 50% of the required jobs growth in any town shall be in the town centre or existing developed employment sites and thereafter, to zone lands for new employment creation at the most optimal locations;</li> <li>• Facilitate the provision of key infrastructure required for the future development of enterprise and employment.</li> <li>• Promote a high quality built and natural environment that is attractive to indigenous and foreign industry and employees.</li> <li>• To facilitate the development of opportunities to capitalise particularly on the district's coastal location.</li> <li>• To prioritise the existing town centres as the core location for more intensive economic activity and job creation.</li> <li>• Promote tourist developments at suitable locations that are of an appropriate scale and design, particularly developments that are linked with the tourism products or themes</li> </ul>

	<p>associated with the Bray MD and its hinterland and maximise the towns in the district's locations as both destinations and gateways between other nearby tourism assets.</p> <ul style="list-style-type: none"> <li>For Bray, the key location for new employment development shall be in Fassaroe, where it is the objective to secure the delivery of up to 3,000 new jobs.</li> </ul>
Town Centre and Retail Strategy	<ul style="list-style-type: none"> <li>To promote and encourage consolidation of and improvement to retailing and other town centre activities in the core areas of the three towns in the district including the renovation and expansion of existing retail premises in the core retail area.</li> <li>Encourage the redevelopment and regeneration of vacant, underutilised and derelict sites including the conversion of non-retail premises in the core area to retail use.</li> <li>To protect features that contribute to the towns' overall appearance and heritage value.</li> <li>To encourage higher residential densities in the town centre zones and the concept of 'living over the shop'.</li> <li>The redevelopment of lands within the town core area, particularly those sites with frontage onto the main streets and squares of the towns, shall provide for a street fronting building of a high quality design or for a high quality urban space, including hard and soft landscaping, and appropriate street fixtures and furniture, in order to enhance and create a more attractive streetscape.</li> </ul>
Community Development Strategy	<ul style="list-style-type: none"> <li>To facilitate the development of a range of high quality community, educational, open space and recreational facilities that meet the needs of the local population, and in particular to require that new community, open space and recreational facilities are developed in tandem with new housing.</li> </ul>
Infrastructure Strategy	<ul style="list-style-type: none"> <li>Promote the development of a safe and accessible pedestrian, cycling and traffic routes and excellent public transport facilities.</li> <li>Facilitate and promote the delivery of reliable and effective water, drainage, energy, waste management and communications infrastructure to service the existing and future development needs of the settlement.</li> </ul>
Heritage Strategy	<ul style="list-style-type: none"> <li>To protect the natural, architectural, archaeological and maritime heritage of Bray MD.</li> <li>To enhance the quality of the natural and built environment, to enhance the unique character of the towns in the district as a place to live, visit and work.</li> <li>To promote greater appreciation of, and access to, local heritage assets.</li> </ul>

## 3 SEA Methodology

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### 3.1 Introduction

European Council Directive 2001/42/EC (the SEA Directive) provides guidance on the assessment of effects of certain plans and programmes. Article 1 of the SEA Directive identifies that the objective is ‘*to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans ... with a view to promoting sustainable development*’.

SEA is a systematic, on-going process for evaluating (at the earliest possible stage) the quality and consequences of implementing certain plans and programmes on the environment.

The requirements for SEA in Ireland are set out in the following legislation:

- European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations, as amended by European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations – hereafter referred to as the EU SEA Regulations; and
- Planning and Development (Strategic Environmental Assessment) Regulations, as amended by the Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations – hereafter referred to as the SEA Regulations.

This section outlines the methodology for undertaking SEA of the Draft LAP. The methodology is based on legislative requirements and guidance from the Environmental Protection Agency<sup>2</sup> (EPA) to ensure compliance with the SEA Directive and associated national legislation. The key stages outlined in Figure 3.1 were identified and are discussed in the following sections.

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<sup>2</sup> Environmental Protection Agency (2016) *SEA Pack*. Available from:  
<http://www.epa.ie/pubs/advice/ea/SEA%20Pack%202016.pdf>

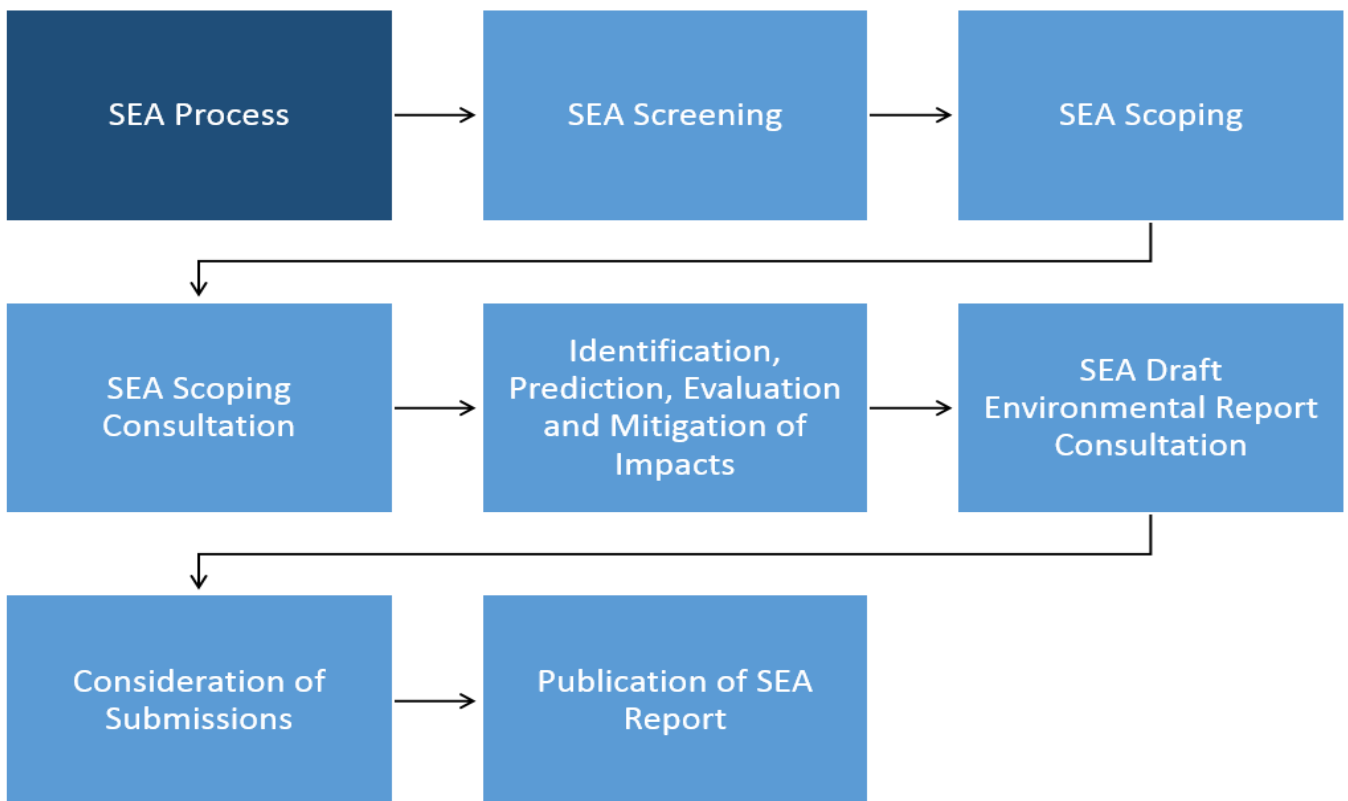


Figure 3.1: Key stages of the SEA process

## 3.2 Screening

Screening is the process for deciding whether a particular plan would warrant SEA. The SEA Regulations outlined above require the following:

- A mandatory SEA for local area plans if the population is 5,000 persons or more;
- A mandatory SEA for local area plans if the area to which the plan refers is greater than 50km<sup>2</sup>; and
- Screening to establish the need for SEA for local area plans where the thresholds above are not met, to determine whether the new plan would be likely to give rise to significant environmental effects.

The 2016 Census<sup>3</sup> identifies that the population of Bray municipal district is 35,531 therefore the target population in the area to which the Draft LAP relates exceeds this threshold and as such an SEA was a mandatory requirement for the Draft LAP.

## 3.3 Scoping

The scoping phase of the SEA establishes the likely extent (geographic, temporal and thematic) of the SEA, the range of environmental issues to be considered and the level of detail that the SEA will investigate. Scoping also allows input from the authorities and relevant stakeholders to be incorporated in the SEA. Generally, any comments submitted as part of the scoping process will provide greater focus during the development of the Draft LAP.

<sup>3</sup> Central Statistics Office (2017) *2016 Census: Small Area Population Statistics*. Available from <http://www.cso.ie/en/census/census2016reports/census2016smallareapopulationstatistics/>



The considerations addressed during the scoping process for the Draft LAP are as follows:

- The key elements of the Draft LAP to be assessed;
- The environmental aspects to be assessed as part of the SEA;
- Identification of relevant international, national and local plans, objectives and environmental standards that may influence or impact on the Draft LAP;
- Development of draft environmental objectives, indicators and targets to allow the evaluation of impacts as part of the SEA; and
- Identification of any reasonable alternative means or scenarios for achieving the strategic goals of the Draft LAP.

A scoping report was prepared as part of this SEA on behalf of Wicklow County Council and submitted to the relevant stakeholders on 15 November 2016. The responses to scoping received from stakeholders were addressed in the preparation of this Environmental Report. An outline of the responses received is included in Table 3.

Table 3: Scoping responses received for the SEA of the Draft LAP

Consultee/Stakeholder	SEA Scoping Response
Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs (DAHG)	<ul style="list-style-type: none"> <li>• The Department shall provide advice and recommendations regarding the appropriate treatment of archaeology as an integral part of the development process.</li> <li>• Objectives should be included in the Draft LAP for the protection of the archaeological heritage.</li> <li>• Any development either above or below ground, within the vicinity of a site of archaeological interest including monuments identified on the Record of Monuments &amp; Places, shall not be detrimental to the character of the archaeological site or its setting.</li> <li>• Development Plans should therefore take account of any development and constructional impacts on riverine, lacustrine, intertidal and sub-tidal environments.</li> </ul>
EPA	<ul style="list-style-type: none"> <li>• In preparing the Plan and SEA, consideration should be given to a number of key significant national, regional and sectoral plans/programmes/strategies, some of which are currently in preparation and will be finalised and implemented during the lifetime of the Plan;</li> <li>• The Plan should ensure that development proposals and associated population increases within the Plan area are aligned with the ability to provide the required infrastructure (drinking water, wastewater, waste management);</li> <li>• The key issues and challenges outlined in the State of the Environment Report for 2016, as relevant and where appropriate to the Plan area, should be accounted for in preparing the Plan and associated SEA;</li> <li>• The Plan should provide for the protection of surface and groundwater resources in compliance with the Water Framework Directive (WFD);</li> <li>• The Plan should commit to protecting and, where possible, enhancing biodiversity outside of designated areas, including ecological corridors/linkages, hedgerows and wetlands within and adjacent to the plan area. Where possible, existing green/blue infrastructure should be retained and integrated into the Plan to help maintain and conserve important ecological corridors and associated species and habitats;</li> <li>• The Plan should take into account the relevant aspects of the Eastern CFRAM study, as well as including a commitment to meeting the requirements of the Planning System and Flood Risk Management – Guidelines for Planning Authorities (DEHLG/OPW, 2009);</li> <li>• The Plan should take into consideration the recommendations of the Greater Dublin Area Draft Transport Strategy, as appropriate and relevant. The Plan should establish an integrated traffic management plan that includes adequate provision of public transport to ensure the sustainable development of the Plan area;</li> <li>• In preparing the Plan and SEA, particular consideration should be given to assessing the potential for cumulative effects on the environment as a result of implementing the Plan, in combination with other and relevant plans, programmes and significant projects;</li> <li>• Where significant adverse environmental effects associated with the implementation of the Plan are identified, including cumulative effects, appropriate mitigation measures should be proposed to prevent, reduce and as fully as possible offset these effects; and</li> <li>• The Plan should seek to mitigate and adapt to the effects of climate change.</li> </ul> <p>The EPA has provided an SEA integration guidance document which sets out the key environmental issues, as relevant and appropriate, to be taken into account in the preparation of the Plan and associated SEA Environmental Report.</p>

### 3.4 Baseline Data

Gathering relevant information that describes the current environment within the plan area an integral part of the SEA process. The SEA Directive requires that certain information relating to the baseline is presented to help assess the implementation of the Draft LAP, as well as helping establish how the environment would change if the Draft LAP is not implemented.

Baseline data has been collected from readily available public sources, and Geographical Information System (GIS) was used to analyse and graphically present relevant information. The baseline is reported in Section 4 of this document.

### 3.5 Assessment

The SEA process ran in parallel to the development and preparation of the Draft LAP. Interaction between the Draft LAP and SEA is depicted in Figure 3.2.

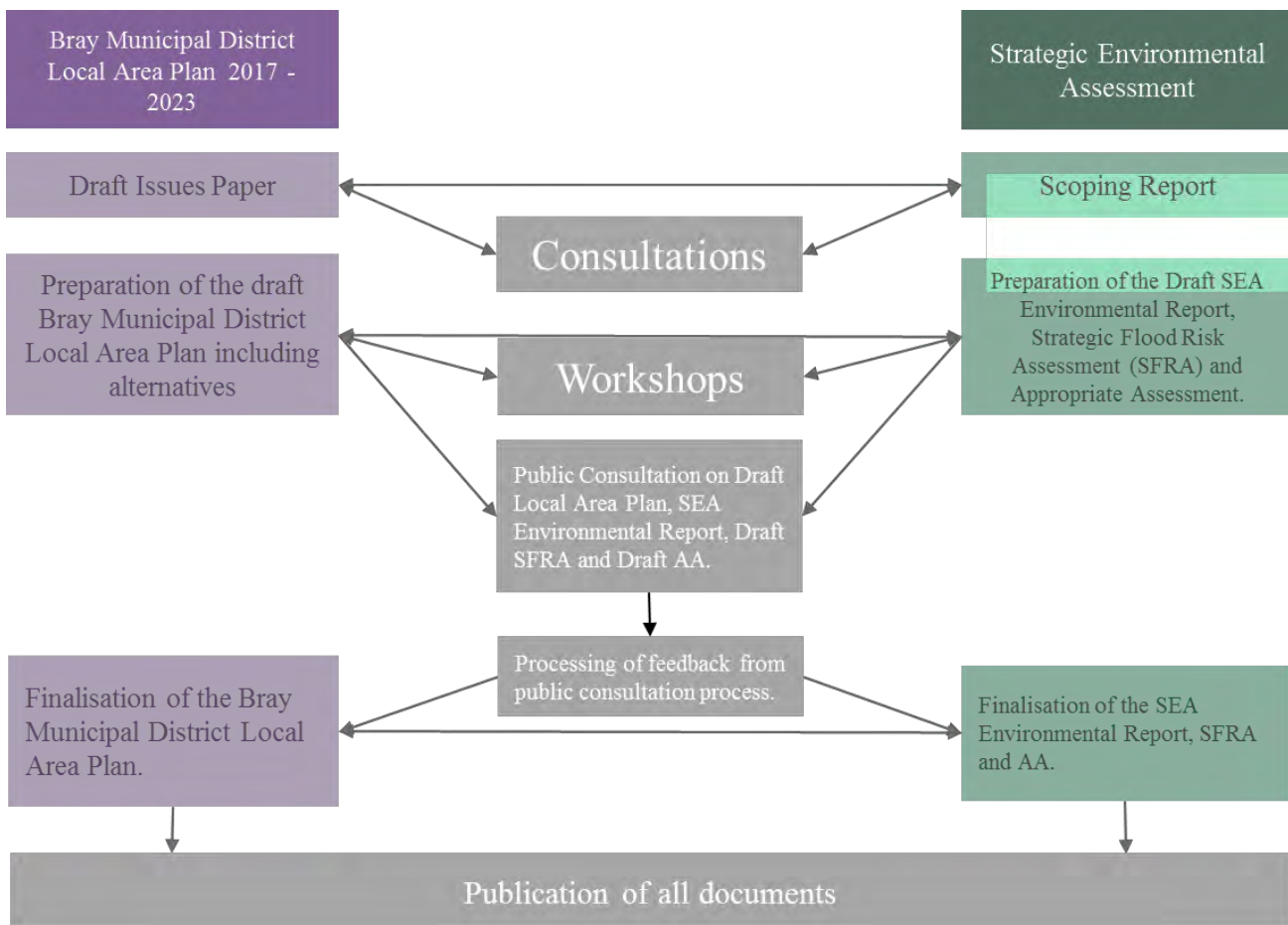


Figure 3.2: Interaction between the development of the Draft LAP and the SEA process

The SEA was undertaken in accordance with best practice principles and guidance for SEA. This included desk reviews of all of the available GIS data, specialist investigation into the likely impacts associated with the Draft LAP and recommendations for suitable mitigation measures and monitoring.

### **3.6 Consultations**

This Environmental Report was issued to the relevant statutory stakeholders for comment. The responses received were addressed in the finalisation of the Environmental Report. An outline of the responses received is included in the SEA Statement.

Consultation with representatives of Wicklow County Council also took place throughout the SEA process.

### **3.7 Consideration of Alternatives**

The SEA Directive requires that reasonable alternatives be assessed in order to demonstrate how the preferred strategy performs against other forms of action. Alternatives must be developed, described and assessed within the SEA process, with the results presented in the Environmental Report.

Section 5 of this Environmental Report discusses the consideration of alternatives to the Draft LAP.

### **3.8 Technical Difficulties Encountered**

No major technical difficulties were encountered during the SEA process and/or the preparation of this Environmental Report.

## 4 Current State of the Environment

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Note all figures referenced from this point onwards are included in Appendix A1.

### 4.1 Introduction

The plan area is located in the north County Wicklow approximately 22 km from Dublin. Bray is the largest town in the plan area and there are excellent transport links, with access to the M11/N11, the DART/rail line and quality bus service. Refer to Figure 4.1 for the location of the plan area.

The plan area's history is well documented from Anglo Norman times, however the main development of Bray town coincided with the arrival of the railway in 1843. From the late 19th century, the town developed as a popular seaside resort and quickly became the largest town in County Wicklow.

The plan area is characterised by its border with Dun Laoghaire - Rathdown (i.e. County Dublin) to the north, the coast and Irish Sea to the east, Bray Head / Sugarloaf Mountains to the south and the Wickow Mountains to the west.

The latest State of the Environment report<sup>4</sup> for the EPA describes the current state of Ireland's environment at the strategic level. Ireland's environment remains in a good condition, although there are a number of key challenges identified for the nation in the coming years:

- Environment and health and wellbeing – Recognition of the benefits of a good quality environment to health and wellbeing;
- Climate change – Accelerate mitigation actions to reduce greenhouse gas emissions and implement adaptation measures to increase our resilience in dealing with adverse climate impacts;
- Implementation of legislation – Improve the tracking of plans and policies and the implementation and enforcement of environmental legislation to protect the environment;
- Restore and protect water quality – Improvement measures that achieve improvements in the environmental status of water bodies from source to sea;
- Nature and wild place – Protect pristine and wild places that act as biodiversity hubs, contribute to health and wellbeing and provide sustainable tourism opportunities;
- Sustainable economic activities – Integrate resource efficiency and environmental sustainability ideas and performance accounting across all economic sectors; and
- Community engagement – Inform, engage and support communities in the protection and improvement of the environment.

### 4.2 Purpose of the Environmental Baseline

The assessment of the Draft LAP against the baseline conditions is the principal task of this SEA. Consequently, the description of the baseline must be cognisant of the local level nature of the plan and the pressures and interrelationships between environmental aspects.

The baseline provides an overview of the existing conditions in the plan area and their relevance to the Draft LAP. The baseline is considered in the context of the following environmental aspects:

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<sup>4</sup> EPA (2016) *Ireland's Environment – An Assessment 2016*. Available from <http://epa.ie/pubs/reports/indicators/irelandsenvironment2016.html>

- Biodiversity;
- Population and Human Health;
- Land and Soils;
- Water;
- Air, Noise and Climate;
- Heritage;
- Landscape and Visual; and
- Material Assets.

In accordance with the SEA Directive, the inter-relationship between the environmental aspects in this SEA must be taken into account. Of particular note to this SEA is the interrelationship between water (quality and quantity) and biodiversity, soils, human health and population. Biodiversity is dependent on the hydrological environment (surface water and groundwater) as a habitat. Water quality is also of particular importance with regard to human health as it provides a source of drinking water and it influences agriculture and mariculture activities. Water is also used for leisure and recreational purposes, providing a material asset both for local populations and as an integral component of the tourism economy.

## 4.3 Biodiversity

### 4.3.1 Introduction

Biodiversity is defined as *'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 part.'* This includes sizes, habitats, species and networks of importance at the international, national or local level which may occur within or in the vicinity of the plan area.

The term biodiversity refers to more than individual species of flora and fauna. It includes the genes they contain the habitats and ecosystems of which they form part, and also highlights the interdependence and interconnectedness of all living things.

The main elements of biodiversity include:

- Designated sites under Council Directive 92/43/EEC (Habitats Directive) and Council Directive 79/409/EEC (Birds Directive), i.e. the Natura 2000 network including Special Areas of Conservation (SACs including candidates SACs) and Special Areas of Protection (SPAs including candidate SPAs);
- National Heritage Areas (NHAs), National Parks, Nature Reserves, Wildfowl Sanctuaries, Refuges for Fauna or Flora or sites proposed for designation;
- Undesignated sites such as proposed NHAs (pNHAs) and local biodiversity areas;
- Sites and habitats that can be considered to be corridors or stepping stones for the purpose of Article 10 of the Habitats Directive;
- 'Natural habitats and protected species' for the purposes of the Council Directive 2004/55/EC (Environmental Liability Directive) including habitats and species listed under the Habitats Directive (Annex I habitats, Annex II and Annex IV species and their habitats) and Birds Directives (Annex I species and their habitats, and regularly occurring migratory birds) wherever they occur;

- Legally protected species including protected flora under the European Communities (Birds and Natural Habitats) Regulations 2011 and Wildlife Acts 1976-2000;
- Sites identified under the Bern, Ramsar and Bonn Conventions; and
- Biodiversity in general including habitats important for birds, red listed and Birds of Conservation Concern in Ireland listed species, natural and semi-natural habitat areas including wetlands, woodlands, waterbodies, etc.

The Biodiversity Action Plan was adopted by Wicklow County Council for the period 2010-2015 to provide a framework for the conservation of biodiversity and natural heritage at a local level. The Biodiversity Action Plan translates legislation and policies (national and international) into action in order to raise awareness of and enhance the protection, conservation and management of County Wicklow's natural heritage, flora and fauna.

## 4.3.2 Baseline

### 4.3.2.1 Overview

County Wicklow, described as the 'Garden of Ireland', consists of a diverse range of landscapes from the Wicklow Mountains to the shores of the Irish Sea.

Much of the lowland areas in the county comprise farmed areas, largely used for grazing and silage. The coastal areas include rocky headlands, shingle beaches and sand dune systems. Rivers connect the upland areas to other parts of the county, with river valleys running east, south, west and north forming wildlife corridors around the county. There are numerous designated sites in County Wicklow protected by both EU and national legislation (including the Habitats and Birds Directives and The Wildlife Act (1976 & 2000)) as well as those biodiversity values identified and protected by Wicklow County Council through policies in the County Development Plan.

Further, the Biodiversity Action Plan set out a strategy for increasing understanding and appreciation of biodiversity in County Wicklow along with measures for enhancing the protection of this valuable resource.

### 4.3.2.2 Habitats

The Biodiversity Action Plan provides an overview of the habitats of County Wicklow and those of relevance to the plan area are summarised in Table 4.

Table 4: Habitats of relevance in County Wicklow (Source: Biodiversity Action Plan)

Habitat	Description
<b>Upland</b>	The Wicklow uplands are an important and prominent aspect of biodiversity in the county. They form the largest unbroken area of high ground in Ireland, made up of granite and metamorphic rock and shaped by glaciation during the last Ice Age. The highest point is Lugnaquilla at 925 metres. Much of the habitat within this upland area is a 'matrix' of blanket bog, heath, acidic grassland, rocky cliffs and scree slopes, and woodland.
<b>Coastland</b>	Coastal habitats in county Wicklow include sand dunes, shingle beaches, coastal headlands, coastal heaths and grasslands and wetland complexes. Biodiversity interest often exists hand in hand with Wicklow's largest towns.  Because of the draw of coastal areas, there is often a need for a fine balance to be struck between access to the coast and protection of important biodiversity features.
<b>Sand Dunes</b>	Sand dunes are a complex collection of habitats that, by their nature and position, attract a number of issues. Firstly, they are dynamic systems, the temporary result of constantly shifting sediment systems

	<p>along our coasts. Secondly, they are associated with sandy beaches which, themselves, are associated with recreational pressure. Added to this is that they are of high ecological importance for a wide variety of species and have, for a number of years, been the area of choice for new golf course and caravan park developments. Sand dunes play an important, and often forgotten, role in coastal flood defence.</p>
<b>Coastal Headlands</b>	<p>The main coastal headlands in the county are Bray head, Wicklow Head and Arklow Rock. Bray Head, designated as an SAC and pNHA, holds a number of important habitats including dry heath, vegetated sea cliffs, rocky sea cliffs, exposed rocky shores, dry calcareous and neutral grassland and mixed woodland. Important plant species include greater broomrape, spring vetch and bee orchid. Bray and Head holds important populations of kittiwake and black guillemot as well as nesting peregrine.</p>
<b>Rivers and Lakes</b>	<p>The linear and flowing nature of rivers gives rise to a number of specific attributes and threats. They are highly important for migratory and ranging species such as salmon and otter, they also act as conduits for pollutants and their linear nature means that it is difficult not to impact on them through human infrastructure. Many human settlements are placed near rivers since there has always been an important reliance on them in terms of providing drinking water and for transport.</p> <p>In addition to this, our rivers carry water and, in times of flood, overflow onto floodplains and then naturally take the water back from the floodplain as the water level in the channel falls.</p> <p>Stress on this function is increasing due to development on floodplains, climate change (resulting in more extreme rainfall events), and drainage in the upland catchment (meaning water moves to the rivers and streams faster). This issue has become very apparent with resultant flood events in Wicklow in recent years. Despite the apparent need to rely on rivers, many human activities impact on them negatively, including changes to flooding regimes and pollution.</p>
<b>Fens, Flushes, Reedbed, Marshes and Wet Grassland</b>	<p>This is a collection of habitats that are often associated with rivers and lakes where they may form a fringe of wetland vegetation. All dependent on a high water table, differentiation between these habitats depends on both substrate (such as peat or mineral soils) and historic management.</p>
<b>Woodland and Forestry</b>	<p>Wicklow is the most wooded county in Ireland, with almost 20% of the county covered by woodland and forestry. Woodland types in the county vary from upland oak woodlands to birch dominated woodland and wet woodland dominated by willow and alder. The planted woodlands of the demesnes in the county are also significant for biodiversity. Commercial forestry has a large holding in the county as well. Coillte has a considerable interest in the county, owning or managing over 30,000 hectares and there are many private forestry owners.</p>
<b>Farmland</b>	<p>Farmland in Wicklow varies from the upland moorland habitats to the grasslands of the low-lying land in the east. There is no doubt that significant biodiversity benefit can be achieved through environmentally sensitive farming methods. It could even be argued that, outside protected areas, farmed areas have the potential to be one of our greatest biodiversity assets. At the same time, farming has a great potential for biodiversity impact through direct changes to habitats (such as through inappropriate grazing or nutrient enrichment) or through indirect impacts (such as water quality impacts resulting from activities such as upland grazing and slurry spreading). The biodiversity value of farmland is strongly dependent on the existence and best practice implementation of schemes such as the Rural Environmental Protection Scheme (REPS). As of 2007, nearly 30,000 hectares of farmland in the county was entered into REPS.</p>
<b>Hedgerows and Verges</b>	<p>Hedgerows and verges are an important part of the network that connects habitats around the county. In such a highly wooded county as Wicklow, hedgerows can really enhance the county's biodiversity by providing important routes for species movement between woodland sites.</p> <p>Hedgerows are also an important habitat in their own right, providing refuge for important plants, invertebrate and bird species. The combination of a good hedgerow, a wide verge and neighbouring farmland can enhance the value of each of these habitats. Birds that nest in the hedgerows can find food in the form of insects and seeds that occur in the neighbouring habitats, insects can benefit from the shelter of the hedgerow while exploiting the nectar and pollen sources of flower-rich verges</p>
<b>Infrastructure and Artificial Surfaces</b>	<p>As well as the natural habitats described above, it is important to remember that many of our buildings, infrastructure and worked areas can hold important biodiversity as well. Bridges are particularly important in this respect. Many of our older bridges have gaps and crevices in the mortar that are ideal nesting sites for birds and nursery or roost sites for bats.</p> <p>The same is true of bat species. Old walls and buildings, such as mills, next to rivers can be every bit as important in these respects.</p>



### 4.3.2.3 Species

Wicklow is home to several rare, protected and/or threatened plant and animal species. Protected species found in the vicinity of the plan area include those that are legally protected under Irish wildlife legislation (e.g. badgers, bats, hares etc.). Other protected species within the plan area include species that are listed on the Birds Directive (Kingfisher) and Annex II of the Habitats Directive (e.g. otters, Atlantic salmon etc.).

### 4.3.2.4 Trees

Tree Preservation Orders (TPOs) can be made to protect trees under Section 45 of the Local Government (Planning and Development) Act 1963 and subsequent acts as amended. Part XIII of the Planning and Development Act 2000, as amended sets out the provisions for TPOs.

A TPO can be made if a tree appears to the planning authority to be desirable and appropriate in the interest of amenity or the environment. A TPO can apply to a tree, trees, group of trees or woodland. The principle effect of a TPO is to prohibit the cutting down, topping, lopping or wilful destruction of trees without the planning authority's consent. The TPO can also require the owner and occupier of the land subject to the order to enter into an agreement with the planning authority to ensure the proper management of the tree, trees or woodland.

There are 19 TPOs within the plan area, primarily within Bray town centre with one TPO in north Kilmacanogue, one to the south of Cookstown and one in Glencree as illustrated in Figure 4.17.

### 4.3.2.5 Designated Sites

There are a range of statutory provisions and designations in force in Ireland to protect, conserve and manage biodiversity and to control and/or regulate human activities that may impact upon it negatively. The Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs is responsible, through the National Parks and Wildlife Service (NPWS), for the designation and protection of conservation sites in Ireland. Currently there are three main types of designation of protected areas - SACs, SPAs and NHAs.

An SAC is a site of European importance designated under the Habitats Directive. SACs are selected for the conservation of Annex I habitats (including priority types which are in danger of disappearance) and Annex II species (other than birds). Irish habitats include raised bogs, blanket bogs, turloughs, sand dunes, machair (flat sandy plains on the north and west coasts), heaths, lakes, rivers, woodlands, estuaries and sea inlets. Species which must be afforded protection include Salmon, Otter, Freshwater Pearl Mussel, Bottlenose Dolphin and Killarney Fern. The Habitats Directive has been transposed into Irish law by Ministerial Regulation. The European Communities (Natural Habitats) Regulations, 1997 set out how these sites are to be protected and managed. All SAC sites are afforded full legal protection.

An SPA is a site of European importance designated under the Birds Directive. SPAs are selected for the conservation of Annex II birds and other regularly occurring migratory birds and their habitats. Under the Birds Directive, each EU Member State is required to designate SPAs for natural areas that support populations of particular bird species that are rare or threatened in Europe and that require particular measures, including the designation of protected areas to conserve them.

Designated conservation sites in the vicinity of plan area are highlighted on Figure 4.2.

Five SACs and one SPA exist within the plan area and are of particular relevance to the Draft LAP, as outlined in Table 5:

Table 5: SACs and SPAs in the plan area

Site Name	Site Code
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Knocksink Wood SAC	000725
Bray Head SAC	000714
Ballyman Glen SAC	000713
Glen of the Downs SAC	000719
Wicklow Mountains SAC	002122
Wicklow Mountains SPA	004040

There is one ‘Special Amenity Area’ in the plan area- at Bray Head. A Special Amenity Area Order (SAAO) is designed to protect areas that are of particularly high amenity value, which are sensitive to intense development pressure and which cannot be adequately protected by existing planning controls.

NHAs are designated due to their national conservation value for ecological and/or geological or 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. pNHAs were published on a non-statutory basis in 1995, but have not since been statutorily proposed or designated.

There are no NHAs in, or within 15km of the plan area, however there are 10 pNHAs within the plan area of particular relevance to the Draft LAP, as outlined in Table 6.

Table 6: pNHAs in the plan area

Site Name	Site Code
Great Sugarloaf pNHA	001769
Powerscourt Woodland pNHA	001768
Powerscourt Waterfall pNHA	001767
Glencree Valley pNHA	001755
Knocksink Wood pNHA	000725
Dargle River Valley pNHA	001754
Kilmacanogue Marsh pNHA	000724
Bray Head pNHA	000714
Glen of the Downs pNHA	000719
Ballyman Glen pNHA	000715

All designated sites within 15km of the plan area are taken into consideration in this Environmental Report.

A summary of each of designated sites (SACs, SPAs and pNHAs) is provided in Table 7. This text is taken from the Site Synopses for designated sites provided by the NPWS<sup>5</sup>.

Table 7: Summary of designated sites in the plan area (Source: NPWS)

<b>Bray Head SAC and pNHA 000714</b>
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<sup>5</sup> NPWS (2017) *Protected site: Site Synopses*. Available from: <https://www.npws.ie/protected-sites>

This coastal site is situated in the north-east of Co. Wicklow between the towns of Bray and Greystones. The bedrock geology is Cambrian quartzites and shales (with mudstones and greywackes). Bray Head consists of a plateau of high ground, with five prominent quartzite knolls and has a maximum height of 241 m. The more exposed higher ground has a covering of shallow acidic soils, with protruding bedrock and scree. Elsewhere, deeper soils are formed by drift deposits and are calcareous in character.

The site is a Special Area of Conservation (SAC) selected for the following habitats listed on Annex I of the E.U. Habitats Directive: Vegetated Sea Cliffs, Dry Heath.

#### **Ballyman Glen SAC and pNHA 000713**

Ballyman Glen is situated approximately 3 km north of Enniskerry and straddles the County boundary between Dublin and Wicklow. The glen is bounded mostly by steeply sloping pasture with Gorse (*Ulex europaeus*) and areas of wood and scrub. The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive: Petrifying Springs, Alkaline Fens.

#### **Glen of the Downs SAC and pNHA 000719**

Glen of the Downs is a semi-natural oak wood situated within an impressive glacial overflow channel. It is located on the Dublin-Wexford road, about 7 km south of Bray, Co. Wicklow. The underlying rock is mostly quartzite and it outcrops in a few places. The soil is a sandy loam, brown earth to brown podzolic, and is very dry over much of the site. Most of the site has been a Nature Reserve since 1980.

The site is a Special Area of Conservation (SAC) selected for the following habitats listed on Annex I of the E.U. Habitats Directive, namely Old Oak Woodlands.

#### **Wicklow Mountains SAC 002122**

Wicklow Mountains SAC is a complex of upland areas in Counties Wicklow and Dublin, flanked by the Blessington reservoir to the west and Vartry reservoir in the east, Cruagh Mountain in the north and Lybagh Mountain in the south. Most of the site is over 300 m, with much ground over 600 m. The highest peak is 925 m at Lugnaquilla. The topography is typical of a mountain chain, showing the effects of more than one cycle of erosion. The massive granite has weathered characteristically into broad domes. Most of the western part of the site consists of an elevated moorland, covered by peat.

The surrounding schists have assumed more diverse outlines, forming prominent peaks and rocky foothills with deep glens. The dominant topographical features are the products of glaciation. High corrie lakes, deep valleys and moraines are common features of this area. The substrate over much of the area is peat, usually less than 2m deep. Poor mineral soil covers the slopes, and rock outcrops are frequent. The Wicklow Mountains are drained by several major rivers including the Dargle, Liffey, Dodder, Slaney and Avonmore. The river water in the mountain areas is often peaty, especially during floods.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive: Oligotrophic Waters containing very few minerals, Dystrophic Lakes, Wet Heath, Dry Heath, Alpine and Subalpine Heaths, Calaminarian Grassland, Species-rich Nardus Grassland, Blanket Bogs (Active), Siliceous Scree, Calcareous Rocky Slopes, Siliceous Rocky Slopes, Old Oak Woodlands, Otter (*Lutra lutra*).

#### **Wicklow Mountains SPA 004040**

This is an extensive upland site, comprising a substantial part of the Wicklow Mountains. Most of the site is in Co. Wicklow, but a small area lies in Co. Dublin. The underlying geology of the site is mainly of Leinster granites, flanked by Ordovician schists, mudstones and volcanics. The area was subject to glaciation and features fine examples of glacial lakes, deep valleys and moraines. Most of site is over 300 m, with much ground being over 600 m; the highest peak is Lugnaquilla (925 m). The substrate over much of site is peat, with poor mineral soil occurring on the slopes and lower ground. Exposed rock and scree are features of the site. The predominant habitats present are blanket bog, heaths and upland grassland.

The Wicklow Mountains SPA is of high ornithological importance as it supports nationally important populations of Merlin and Peregrine, both species that are listed on Annex I of the E.U. Birds Directive. Part of Wicklow Mountains SPA is a Statutory Nature Reserve.

#### **Great Sugarloaf pNHA 001769**

The Great Sugar Loaf is situated about 5km south-west of Bray. It is a steep mountain, 501m above sea level, and has been modified greatly by glacial erosion. It stood as a nunatak which was scoured by the Ivernian, Midland and Mountain ice sheets. Its profile thus contrasts with those of Bray Head and Howth, both overridden by ice sheets and flat on top. The main habitats of the site are dry mountain heath and upland grassland. The site is of both ecological and geological interest, and is also a prominent feature in the landscape of north County Wicklow. Due to its ease of access and close proximity to large urban areas, the Great Sugar Loaf is a valuable educational and recreational asset.

<b>Powerscourt Woodland pNHA 001768</b>
<p>Powerscourt Woodland is located about 2km south-west of Enniskerry. It is largely contained within the two large demesnes of Powerscourt and Charleville, and includes a 4km stretch of the Dargle River. The topography of the area is rolling hillside sloping down to the river. The site includes some parkland with large specimen trees. Although the site includes many exotic plant species, the habitats are still of interest and support an interesting flora. The mix of semi-natural habitats and estate woodland is particularly conducive to macro-fungi. The well documented record of land management practices held by the demesnes adds to the scientific interest. The area is also of great educational value, being frequently used for teaching.</p>
<b>Knocksink Wood SAC and pNHA (000725)</b>
<p>Knocksink Wood is situated in the valley of the Glencullen River, just north-west of Enniskerry in Co. Wicklow. The fast flowing Glencullen River winds its way over granite boulders along the valley floor. The steep sides of the valley are mostly covered with calcareous drift, and support extensive areas of woodland.</p> <p>The site is a Special Area of Conservation (SAC) selected for the following habitats listed on Annex I of the E.U. Habitats Directive: Petrifying Springs, Alluvial Forests.</p>
<b>Powerscourt Waterfall pNHA 001767</b>
<p>This site is located at the eastern edge of the Wicklow Mountains, about 6km from Enniskerry. The main feature of the site is a steep waterfall, approximately 100m high, and down which the Dargle River cascades. At the base of the waterfall there is a small corrie and associated small moraines.</p>
<b>Glencree Valley pNHA 001755</b>
<p>The Glencree Valley is a glacial valley which lies at the north-eastern edge of the Wicklow Mountains. The Glencree River, which flows through the valley, is a good example of a fast flowing upland river with many boulders and often brown peaty coloured water. The importance of the site is that it is a good example of deciduous woodland even though it is rather fragmented. The presence of an upland river and boggy flushes add to the habitat diversity of the site.</p>
<b>Dargle River Valley pNHA 001754</b>
<p>This site is located about 2km south-east of Enniskerry. It is a section of the River Dargle with steep wooded banks. At one point along the river a well exposed series of Ordovician volcanic rocks are faulted against well-exposed Bray group Cambrian strata. Such a clear exposed junction is not seen elsewhere in Co. Wicklow.</p> <p>The area is dominated by mature Sessile Oak (<i>Quercus petraea</i>) woodland, with some Hazel (<i>Corylus avellana</i>), Beech (<i>Fagus sylvatica</i>), birch (<i>Betula spp.</i>) and Holly (<i>Ilex aquifolium</i>). Pockets of mature conifers occur in places, as well as Cherry Laurel (<i>Prunus laurocerasus</i>). The ground flora is rather sparse and mainly of Great Woodrush (<i>Luzula sylvatica</i>) and Bramble (<i>Rubus fruticosus agg.</i>). The steep gorges over the river hold a luxuriant growth of mosses, while species common along the river bank include Red Campion (<i>Silene dioica</i>), Yellow Pimpernel (<i>Lysimachia nemorum</i>), Marsh Hawk's-beard (<i>Crepis paludosa</i>), New Zealand Willowherb (<i>Epilobium brunnescens</i>) and Giant Fescue (<i>Festuca gigantea</i>). A Red Data Book species, Yellow Archangel (<i>Lamiastrum galeobdolon</i>), occurs along the river. This is a very localised species confined to eastern Ireland.</p> <p>The importance of this site is that it is a fine example of a wooded valley. It is likely that this valley has been wooded for a long period and such habitats are becoming rare in north County Wicklow. The removal of the conifers would increase the interest of the site. The site is also of considerable geological importance.</p>
<b>Kilmacanogue Marsh pNHA 000724</b>
<p>Ballyconnigar Upper lies approximately 1.5km east of Blackwater in County Wexford. The main habitat is species-rich grassland which has been relatively unaffected by fertiliser inputs. The most abundant and widespread species are Common Bent (<i>Agrostis capillaris</i>), Sweet Vernal-grass (<i>Anthoxanthum odoratum</i>), Crested Dog's-tail (<i>Cynosurus cristatus</i>), White Clover (<i>Trifolium repens</i>) and Common Bird's-foot-trefoil (<i>Lotus corniculatus</i>). There are also three legally protected plant species that occur here: Bird's-foot (<i>Ornithopus perpusillus</i>), Hairy Bird's foot-trefoil (<i>Lotus subbiflorus</i>) and Small Cudweed (<i>Filago minima</i>). There are also a number of other rare species such as Knotted Clover (<i>Trifolium striatum</i>) which is restricted to the east coast, as well as some interesting plant communities of disturbed ground. Although part of the site has previously been planted with conifers, and while Gorse (<i>Ulex europaeus</i>) and Bracken (<i>Pteridium aquilinum</i>) dominate other parts, this is still an important area of unimproved grassland - a habitat under heavy pressure in the lowlands.</p>

### 4.3.3 Relevant Issues

#### 4.3.3.1 Overview

The following biodiversity issues were considered during the preparation of the Draft LAP:

- Impacts on protected and/or designated sites;
- Impacts on protected species;
- Consideration of protecting pNHAs in a similar way to fully designated NHAs;
- Impacts on sensitive habitats outside of protected areas;
- Consideration of maintaining and enhancing the biodiversity richness by protecting rivers, stream corridors and valleys by reserving riparian zones/ecological corridors, maintaining them free from inappropriate development, discouraging culverting or realignment, and promoting natural flood functions;
- Consideration of buffer zones between biodiversity features and areas zoned for development; and
- Potential for Habitat loss and fragmentation.

Screening for AA (i.e. Stage 1 in the AA process) was carried out to assess, in view of best scientific knowledge, if the Draft LAP, individually or in combination with another plan or project is likely to have a significant effect on any Natura 2000 site(s). The AA Screening determined that a Stage 2 AA was required. A Natura Impact Statement was prepared of the Draft LAP and considered as part of this SEA.

#### 4.3.3.2 Urban Expansion

Urban expansion has been accelerating over recent years as increased development expands into rural areas. The constant encroachment of the built environment on natural habitats and greenfield will impact natural flora, fauna and biodiversity at those locations directly affected by urbanisation.

#### 4.3.3.3 Water Dependant Habitats

Discharge from water and wastewater treatment, agricultural runoff, leachate from contaminated sites, surface runoff from urban areas and unlicensed industrial discharges have significant negative impacts on water quality which affects biodiversity in aquatic ecosystems as well as neighbouring terrestrial ecosystems.

The biodiversity and aquatic ecosystems of the Dargle River, its adjoining rivers the County Brook, the Glencullen and the Kilmacanogue rivers as well as a few minor tributaries rely on good water quality. The Dargle River and its tributaries are generally classified as being of 'good' status.

Further, the River Dargle is an important Salmonid water and is designated and protected under the European Communities (Quality of Salmonid Waters) Regulations 1988. Designated Salmonid waters are capable of supporting salmon (*Salmo salar*), trout (*Salmo trutta*), char (*Salvelinus*) and whitefish (*Coregonus*).

Any impacts to these surface waters could lead to a deterioration of water quality and a consequent impact to their ecosystems and protected species.

Unrestrained development can directly impact water dependent and rare habitats. Abstractions for potable water can result in a direct impact on rivers and lakes and their associated flora and fauna and on groundwater dependent habitats.

#### 4.3.3.4 Invasive Species

Invasive non-native plant and animal species are one of the greatest threats to biodiversity. Invasive alien species negatively impact biodiversity through competition, herbivory, predation, habitat alteration and introduction of parasites or pathogens and poses a risk to the generic integrity of our native species.

Terrestrial and aquatic habitats can be significantly impacted by the introduction of invasive species, resulting in severe damage to conservation and economic interests, such as agriculture, fisheries, forestry and various recreational activities.

### 4.4 Population and Human Health

#### 4.4.1 Baseline

##### 4.4.1.1 Population

According to the 2011 Census<sup>6</sup>, the population of Bray municipal district was 34,335 in 2011, representing a 3.5% population increase in the preceding five years. The population targets for settlements in the plan area as described in the Draft LAP are based on the 2011 Census figures and population targets outlined in the County Development Plan (which was prepared in advance of the publication of the 2016 Census figures).

According to the preliminary 2016 Census figures<sup>7</sup>, the population of Bray municipal district was 35,531 persons in 2016. Refer to Table 8 for further detail on the breakdown of the population.

Table 8: Population estimates for the plan area (Source: 2016 Census<sup>7,8</sup>)

Electoral Division	Population
003 Bray No. 1, Co. Wicklow	1,839
004 Bray No. 2, Co. Wicklow	6,415
005 Bray No. 3, Co. Wicklow	6,459
006 Rathmichael (Bray), Co. Wicklow	2,415
035 Kilmacanogue (Part Urban), Co. Wicklow	14,706
033 Enniskerry, Co. Wicklow	2,910
036 Powerscourt, Co. Wicklow	788
<b>Total</b>	<b>35,531<sup>8</sup></b>

##### 4.4.1.2 Human Health

The concept of health has been defined by the World Health Organisation as “... a state of complete physical, psychological and social well-being, and not simply the absence of disease or infirmity.” Health is influenced by many factors in the social and built environment including housing, employment status,

<sup>6</sup> Central Statistics Office (2012) *2011 Census: Small Area Population Statistics*. Available from: <http://www.cso.ie/en/census/census2011smallareapopulationstatistics/saps/>

<sup>7</sup> Central Statistics Office (2017) *2016 Census: Small Area Population Statistics*. Available from: <http://www.cso.ie/en/census/census2016reports/census2016smallareapopulationstatistics/>

<sup>8</sup> Data for this table was extracted from Table 5 of the respective Census’ entitled “Population of towns ordered by county and size.”

education, transport and access to fresh food and resources, as well as the impacts of air quality, water quality, flooding and access to green space.

Good planning can play an important role in reducing health inequalities. The World Health Organisation's Commission on the Social Determinants of Health (CSDH) states governments should *'Ensure urban planning promotes healthy and safe behaviours equitably, through investment in active transport, retail planning to manage access to unhealthy foods, and through good environmental design and regulatory controls, including control of the number of alcohol outlets'*.

Given the strong links between income and health, it is recognised that the sustainability of current and future economic activity is an important element in protecting and promoting population health. However, emphasising economic growth without due regard for social and environmental consequences of such growth can have negative impacts on health both for the population as a whole and for specific groups within the population.

Whilst economic development may be apparent, job creation does not necessarily 'trickle down' to job opportunities for the long-term unemployed, and is neither a sufficient, nor necessary, condition for reducing long-term unemployment in a population. Economic development therefore needs to be targeted, geographically and within population groups to ensure that it reduces unemployment and does not exacerbate social inequalities.

Cognisance must also be paid to environmental issues and sustainability endeavours to protect human health as the local economy develops. While employment is generally good for health, there can be negative impacts, usually related to the quality of the working environment and type of work undertaken, for example shift work and high risk working activities. The groups which face the highest risk of experiencing the adverse effects of unemployment appear to be middle-aged men, youths who have recently left school, vulnerable groups such as women attempting to re-enter the labour force and children in families in which the primary earner is unemployed.

The provision of green space and access to the natural environment is also important for population health. The health and wellbeing of individuals is greatly affected by the communities in which they live and the nature of their physical environment. A key element of sustainable communities is equitable access to open space as environments which lack public gathering places can encourage sedentary living habits. Open space provision can improve levels of exercise in a community which can impact on health and can improve social interaction and community activities which can contribute to social cohesion, amenity and reducing stress-related problems.

The availability of spatial data on human health is limited. A key area for consideration of human health will be the interaction between environmental aspects such as water, landscape, biodiversity, air, and energy and human beings. The assessment of impacts on human health will consider relevant characteristics such as the Industrial Emissions Directive, Seveso and Flood Risk Assessment to ensure that all relevant vectors through which human health impacts could be caused as a result of the Draft LAP are assessed.

## 4.4.2 Relevant Issues

### 4.4.2.1 Population

Population change is a complex topic. High growth has occurred in some areas of the Greater Dublin Area while falling occupancy rates has occurred elsewhere. Major changes have taken place to the housing market given the recent economic circumstances in the nation.

Trends such as a reduction in housing completions, increasing rents and rising vacancy rates are evident. Predicting accurate population forecasts impacts on future housing demand and associated issues such as



age profiles, excess in housing stock and occupancy rates and migration must all be taken into account. Future housing demand and all of the infrastructure and services required to sustainably meet demand (e.g. health and sanitation services including waste collection, wastewater treatment and potable water supply, electricity, gas, telecommunications, transportation, education and amenity access) needs to be addressed in a planned manner.

#### 4.4.2.2 Human Health

There are a number of interlinking areas that are relevant to the Draft LAP, for example, the development of sustainable transport infrastructure and sustainable communities. Policies relating to these areas will impact on human health, wellbeing and quality of life for the population. The following human health issues were considered during the preparation of the Draft LAP:

- Increase in demand for water supply, waste water treatment and other infrastructural and community services associated with economic growth and rising population;
- Impact of population growth on sensitive habitats and landscape in terms of greenfield development and pressures on recreational and landscaped land;
- Impacts from noise and air pollution emissions associated with development and transport;
- Effects on water quality due to discharge and emissions;
- Promotion of active transport (i.e. walking and cycling) through an integrated approach to land use and transport policy;
- Consideration of future SEVESO sites;
- Provision of appropriate housing for all sectors of the community;
- Community needs including social infrastructure;
- Educational needs for primary and secondary level education;
- Provision of open spaces within residential areas and areas throughout the town;
- Health/medical facilities to serve the community into the future;
- Preservation of public rights of way to allow public access;
- Adequacy of public/civil space areas;
- Provision for retail and commercial services;
- Vitality and viability of the town centre; and
- Accessibility of the town centre.

## 4.5 Soils and Geology

### 4.5.1 Baseline

The east and south-east of the plan area is underlain by Cambrian metasediments. The land to the west of the plan area, at the Wicklow Mountains is underlain by granites and other igneous intrusive rocks. The remainder of the plan area is underlain by Ordovician metasediments.

The soil in Bray Town consists mainly of made ground. Made ground consists of materials modified by people, including those associated with mineral exploitation and waste disposal. They include materials



deposited as a result of human activities or geological material modified artificially so that their physical properties (structure, cohesion and compaction) have been drastically altered.

The west of the plan area at the Wicklow Mountains consists mainly of blanket peat. The remainder of the study area predominately consists of a mix of deep well drained acidic soils, deep poorly drained acidic soils and shallow well drained mineral soils (mostly basic).

Refer to Figure 4.3 and Figure 4.4 for details of the bedrock geology and soils in the vicinity of the study area.

Wicklow County Council have identified a number of sites in the Fassaroe area where landfilling was carried out in the past. Activity at these landfills began in the 1970s. The sites are unlined, capped and were used to dispose of municipal waste. The sites are kept under observation, regular gas testing is carried out and they are walked over to check for settlement or breaks in the capping. There is uncertainty as to where the landfill sites lie relative to zoning boundaries. One landfill area lies east of a proposed residential zone where there are some existing dwellings. Decomposition of materials in the landfill sites may pollute and contaminate soils. The removal and disposal of landfilled material from the areas mentioned above could, if unmitigated, cause problems for water quality, ecology and human health.

County Wicklow is widely known for its geological heritage, mainly in the context of iconic landscapes such as the Wicklow Mountains and glacial valleys such as Glendalough. There are fourteen sites of geological heritage located within the plan area:

- **Bray Head** - This is a coastal headland with extensive natural exposure and sea cliffs, plus railway cuttings. The Cambrian trace fossils found on Bray Head are a type locality for some species, and important;
- **Enniskerry Delta** - This is a large accumulation of sands and gravels which has been quarried extensively historically, and an excellent example of a deglacial, ice marginal, meltwater-deposited feature;
- **Killiney Bay** - This is a 5km coastal section that exposes a succession of several units of glacial till, and a particularly impressive exposure into deep till with many sedimentological characteristics exposed;
- **The Scalp** - The Scalp comprises a deep channel that was formed by meltwater erosion. The Scalp channel is up to 70m deep and has a U-shaped profile, typical of meltwater channels;
- **Glencullen River** - This is a narrow, steep-sided wooded valley in the northeast Wicklow Mountains. The valley formed along a geological fault and is a meltwater channel;
- **River Dargle Valley** - This is a stretch of the river meandering from a wide and flat valley into cascades. This is an important County geological site partly because of its dramatic gorge landform;
- **Rocky Valley** - This site comprises a very small, disused quarry on side of the rocky valley. Palynological data provide the most reliable age so far obtained for the Bray Group rocks;
- **Lough Bray** - This site consists of two lakes that occupy two of the most accessible corries in Ireland. This is a fine example of two corries and an arête, with bounding moraine features;
- **Kippure** - This is a landmark mountain on the South Dublin-County Wicklow boundary, capped with a prominent tower. This site is excellent for observing the effects of long-term (millennial scale) peat erosion;
- **Upper River Liffey** - This is a wide river floodplain in the Upper Liffey catchment as well as flanking terraces. The site is very important to the understanding of past environmental changes in County Wicklow;

- **Powerscourt Waterfall** - This is a large corrie with a notable waterfall in the corrie backwall. Important for both the glacial feature and for the rocks influence in forming the waterfall;
- **Great Sugarloaf** - This is a prominent, scree covered, quartzite conical mountain peak. The steep upper slopes are blanketed with extensive patches of loose angular quartzite boulders;
- **Glen of the Downs** - This is a deep channel that was formed by meltwater erosion on the northeastern flank of the mountains. The Glen of the Downs is considered to have formed completely in the late-glacial period; and
- **Powerscourt Deerpark Cave** - This is a small cave, which may have been enlarged by excavation, within a stream bed. This cave is the only known natural cave in Wicklow.

Refer to Figure 4.5 for Geological Heritage in the vicinity of the plan area.

## 4.5.2 Relevant Issues

### 4.5.2.1 Urbanisation

The designation of soil fertility and loss of tree/vegetation cover through urbanisation has consequences for rural activities including farming as well as the sequestration of carbon. The following issues with urbanisation of relevance to soils and geology were considered during the preparation of the Draft LAP:

- Impacts of soil pollution from construction work or from the operation of new developments;
- Extent of existing contaminated land;
- Disturbance to soils and geology during new development;
- Pressures on good quality agricultural land due to development and urbanisation; and
- Geotechnical extraction activities, particularly when not managed in a sustainable manner.

### 4.5.2.2 Climate Change

Warming of the global climate has been unequivocal since the 1950s as the atmosphere has warmed. Climate change modelling for Ireland predicts a change to wetter winters and drier summers with a likely increase in the frequency of high intensity rainfall events. These rainfall events can have detrimental effects for slope stability and landslides and their resultant impacts on soils and geology and water management activities.

Significant rainfall events can also erode soil which can be washed into rivers and increase nutrient content leading to alteration of surface water nutrient balances which can exacerbate the eutrophication of rivers and lakes. The erosion of contaminated soils and subsequent transportation to watercourses can severely damage aquatic plants and animals.

## 4.6 Water Resources

### 4.6.1 Baseline

#### 4.6.1.1 Hydrology

The plan area is located in the Avoca-Vartry Catchment and is located on the Dargle River in the Dargle sub-catchment. The Dargle River rises in the Wicklow Mountains and flows in a north-easterly direction for around 20km before entering the Irish Sea at Bray. The Glencree River, the Glencullen River and the Kilmacanogue River are among the tributaries of the Dargle which also flow through the plan area.

Since 2000, Water Management in the EU has been directed by Council Directive 2000/60/EC, the Water Framework Directive (WFD). The WFD has been transposed into Irish legislation by the European Communities (Water Policy) Regulations 2003 and requires that all member states implement the necessary measures to prevent deterioration of the status of all water bodies - surface, ground, estuarine and coastal - and protect, enhance and restore all waters with the aim of achieving good status.

For the purpose of implementing the WFD, 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 plan area falls within the Eastern River Basin District.

As part of the implementation of the WFD a baseline risk assessment was completed of the water bodies within each river basin district. These assessments were made using water pollution indicators, point and diffuse pollution sources, water abstractions and detail on commercial activities. The risk assessment assigned a water quality status to each waterbody and indicated a risk status namely, whether the water body would meet the criteria for 'good status' or would be considered 'at risk of not achieving good status'.

Based on water quality, ecology and morphology, the EPA has determined that the River Dargle and its tributaries is of 'good' status. It is also classified as 1a – 'at risk of not achieving good status' under the WFD risk score system that was devised at the time of the assessment in 2010.

As noted in Section 4.3.2.3, the main channel of the River Dargle is designated and protected as Salmonid Waters under the European Communities (Quality of Salmonid Waters) Regulations 1988. Designated Salmonid Waters are capable of supporting salmon (*Salmo salar*), trout (*Salmo trutta*), char (*Salvelinus*) and whitefish (*Coregonus*).

Nutrient Sensitive Waters comprise nitrate vulnerable zones designated under the Council Directive 91/676/EEC (Nitrates Directive) and areas designated as sensitive under Council Directive 91/271/EEC (Urban Waste Water Treatment Directive). There are no 'nutrient sensitive' rivers identified in the plan area.

Surface water features in the vicinity of Bray are shown on Figure 4.6. The WFD risk status for each waterbody within the plan area is shown on Figure 4.7. The WFD status for lakes and rivers within the plan area are shown in Figure 4.8. Rivers for drinking water in the region are shown in Figure 4.9.

#### 4.6.1.2 Hydrogeology

The majority of the plan area is underlain by a bedrock aquifer which is classified by the Geological Survey of Ireland (GSI) as a 'poor aquifer' which is generally underproductive except for local zones. The north-east and central portion of the plan area is underlain by a bedrock aquifer which is classified by the GSI as a 'locally important aquifer' which is generally moderately productive only in local zones. A gravel aquifer exists around Enniskerry.

Groundwater vulnerability is predominantly ‘high’ in the plan area, however the urban areas in and around Bray town is are classified as having ‘low’ groundwater vulnerability. Areas of ‘extreme’ groundwater vulnerability exist to the west of the plan area, around the Wicklow Mountains.

Based on groundwater quality, the EPA has determined that the groundwater in the plan area is of ‘good’ status. It is also classified as ‘1b- Possibly at risk of not achieving good status’.

Groundwater features and source protection zones in the vicinity of the plan area are shown in Figure 4.9.

Groundwater vulnerability in the vicinity of the plan area is shown in Figure 4.10. WFD groundwater risk and status in the vicinity of the plan area is shown in Figure 4.11 and Figure 4.12.

### 4.6.1.3 Flooding

There are extensive parts of the plan area identified within Flood Zone A, i.e. at high risk of flooding. Specifically, areas of the open countryside at higher elevation in the vicinity of the upper reaches of the River Dargle and Glencullen Rivers and areas within Bray town centre, Enniskerry and Kilmacanogue along the river banks are vulnerable to flooding.

A specific Strategic Flood Risk Assessment (SFRA) was carried out to ensure that flooding and flood risk has been considered during the preparation of the Draft LAP. The outcomes of the SFRA has also informed the SEA process as it assesses the appropriateness of land use (allowed by virtue of land use zoning) allocated to each flood zone.

The main sources of flooding identified in the plan area are:

- **Fluvial:** Flooding which occurs when a river overtops its banks due to a blockage in the channel or the channel capacity is exceeded.
- **Pluvial:** Flooding which occurs when overland flow cannot infiltrate into the ground, when drainage systems exceed their capacity or are blocked and when water cannot discharge due to a high water level in the receiving watercourse.
- **Coastal:** Flooding which occurs as a result of extreme tidal conditions caused by severe weather.

It is also noted that the River Dargle Flood Defence Scheme is currently being constructed within the plan area and is expected to be complete in 2017. This scheme will provide defences that will contain the 1 in 100 year fluvial flood event and the 1 in 200 year tidal flood event.

## 4.6.2 Relevant Issues

### 4.6.2.1 Overview

There are a range of existing issues for water resources in the region that apply to the plan area. Many of these pressures also apply to biodiversity, flora and fauna, soils and geology, land use and landscape as well as water. In general these pressures apply directly to quality, quantity and supply and demand of water resources with indirect pressure on the other environmental features.

The following water resource issues were considered during the preparation of the Draft LAP:

- Impacts on surface water and groundwater quality due to development;
- Impacts to designated SACs and SPAs within 15km of the plan area as a result of surface water pollution;
- Compliance with the WFD and achieving the River Basin Management Objectives;

- Compliance with the requirements of the Planning System and Flood Risk Management Guidelines for Planning Authorities<sup>9</sup>.
- Ensuring drinking water capacity for future predicted increases in population and economic growth;
- Maintenance of water services infrastructure;
- Provision of wastewater treatment infrastructure;
- Effects of flooding due to development;
- Effects of developments within floodplains;
- Climate change impacts on flood risk and likely flood levels; and
- Adhering to EPA wastewater licence discharge limits.

#### 4.6.2.2 Modification

Physical modifications directly impact water bodies through the alteration of habitats and effects on natural processes through the alteration of ecosystems, by reducing their diversity, distribution and population. Land use practises such as agriculture, forestry and urban expansion can indirectly impact water resources by manipulating runoff and discharge which can increase flood risk to properties.

#### 4.6.2.3 Discharge

Inadequately treated effluents and/or spills or leakage from foul water sewer systems networks can lead to the pollution of the water resources. These pollutants can lead to a deterioration in water quality with subsequent downstream uses in surface water bodies being adversely impacted e.g. water dependant ecosystems, potable water supplies, industrial or agricultural abstraction, fishing etc. Current estimates for the Greater Dublin Area indicate that the nutrient input into surface waters from direct industrial discharges produce approximately 60% of the yearly phosphorus load with the remainder arising from diffuse sources such as agriculture.

Waste disposal sites (including old or historical un-lined landfills), quarries, industrial lands etc. can also produce direct discharges to both surface and groundwater bodies that can pollute these water resources.

Construction activities in particular can mobilise contaminants and discharges that have the potential to significantly impact groundwater and subsequently surface water quality.

#### 4.6.3 Extraction

Groundwater extraction can lower water tables whether for drinking water, industrial use or through construction practices and this can cause problems for the hydrological regime of groundwater dependant sites and aquifers.

#### 4.6.4 Climate Change

The effect of climate change on water resources is difficult to predict, particularly at smaller scale such as the plan area. Generally, heavier and prolonged rainstorms are anticipated to cause more flash flooding, which can increase in diffuse pollution loads from soil runoff as well as exacerbate the need for flood alleviation, control and relief schemes.

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<sup>9</sup> Department of Environment, Heritage and Local Government and Office of Public Works (2009) *The Planning System and Flood Risk Management Guidelines for Planning Authorities*.

Conversely, longer and more intense summer droughts are also considered likely and recent research has indicated that the effects of climate change in Ireland will have serious consequences for water resources, resulting in a potential 40% reduction in drinking water supplies. Further, extreme temperature fluctuations may give invasive alien water species a competitive advantage and thus further alter aquatic ecosystems.

## 4.7 Air, Noise and Climate

### 4.7.1 Baseline

#### 4.7.1.1 Air Quality

The EPA measures the levels of range of atmospheric pollutants throughout Ireland in order to measure compliance with Air Quality Standards Regulations, 2011. For the purposes of monitoring in Ireland, four zones are defined in the Air Quality Standards Regulations:

- **Zone A:** Dublin Conurbation;
- **Zone B:** Cork Conurbation;
- **Zone C:** Other Cities and Large Towns; and
- **Zone D:** Rural Ireland which is the remainder of the State excluding Zones A, B and C.

Parts of the plan area including Bray and environs comprising the following Electoral Divisions: Bray Nos. 1, 2, and 3; Rathmichael (Bray) and Kilmacanogue are located in Zone C. The west of the plan area, which is more rural in nature is located in Zone D. The air quality parameters in both zones was reported by the EPA<sup>10</sup> and is summarised in Table 9 and Table 10.

Table 9: Air Quality Assessment Zone C concentrations compared to Air Quality Standards (Source: EPA)

Parameter	Zone	Average measured concentration ( $\mu\text{g}/\text{m}^3$ )	Air quality standard ( $\mu\text{g}/\text{m}^3$ )
NO <sub>2</sub>	Zone C	7.5	40
SO <sub>2</sub>	Zone C	2	20
CO	Zone C	0.4	10,000
Ozone	Zone C	53.5	120
PM <sub>10</sub>	Zone C	15	40
PM <sub>2.5</sub>	Zone C	9.5	20
Benzene	Zone C	0.13	5

Table 10: Air Quality Assessment Zone D concentrations compared to Air Quality Standards (Source: EPA)

Parameter	Zone	Average measured concentration ( $\mu\text{g}/\text{m}^3$ )	Air quality standard ( $\mu\text{g}/\text{m}^3$ )
NO <sub>2</sub>	Zone D	5.5	40
SO <sub>2</sub>	Zone D	2	20

<sup>10</sup> EPA (2016) *Air Quality in Ireland 2015*. Available from:  
<http://www.epa.ie/pubs/reports/air/quality/epairqualityreport2015.html>

CO	Zone D	500	10,000
Ozone	Zone D	63.8	120
PM <sub>10</sub>	Zone D	12.5	40
PM <sub>2.5</sub>	Zone D	8	20
Benzene	Zone D		5

The EPA also manages the National Ambient Air Quality Network which sets legislative limit and target values for air quality to protect human health and vegetation. According to the EPA<sup>10</sup>, in 2015 no levels above the EU limit values were recorded in the plan area, or indeed in Ireland. The EPA reported that the national air quality is relatively good in comparison to our European counterparts.

In addition, the EPA compared air monitoring data to the much more stringent WHO guideline values as part of this analysis<sup>10</sup>. WHO guideline values were exceeded for ozone at seven monitoring sites, for daily PM<sub>10</sub> at sixteen monitoring sites and PM<sub>2.5</sub> at one monitoring site.

The recognised current and future challenges to air quality in Ireland are as follows:

- Reliance on the use of solid fuel;
- The need for efficient traffic management and provision of choice in terms of public transport in towns; and
- Transboundary impacts of ozone, to which Ireland's air mass is subject.

#### 4.7.1.2 Noise

Council Directive 2002/49/EC (Environmental Noise Directive) requires that action is taken by each member state, with a view to prevent and reduce environmental noise where necessary (and particularly where exposure levels can induce harmful effects on human health) and to preserve good environmental acoustic quality. Under the obligations of the Environmental Noise Regulations, local authorities have been designated as the bodies responsible for the development and making of 'Noise Action Plans'.

Wicklow County Council prepared the second Noise Action Plan for County Wicklow in 2013. This Noise Action Plan primarily considers the long term impact from road, rail and air traffic noise sources, and sets out an approach to review noise impact levels near to the major sources. These major noise sources were assessed during the strategic noise mapping in 2012 with a view to identifying locations where noise reduction is deemed necessary in the first instance. In County Wicklow there are no major agglomerations or major airports subject to noise mapping or action planning.

Strategic Noise Maps have also been prepared for all roads that exceed 3 million vehicles a year (approximately 8,250 annual average daily traffic [AADT]) in County Wicklow which equates to 103km of roads, i.e. under 5% of the total length of roads in County Wicklow.

The Noise Action Plan addressed a number of sections of major roads that are located either within, or immediately adjacent to the plan area which qualified for noise mapping and, as such were subject to consideration for noise action planning. Major roads in the plan area which qualified for noise mapping are detailed in Table 11.

Table 11: Major roads in the plan area requiring mapping

Road	From	To	Max AADT	Approx. length (km)
M11/N11	DLRCC County Boundary at Fassaroe	Wexford County Boundary at Cooladangan.	67,000	54



R761	DLRCC County Boundary north of Bray at Old Connaght	Old Connaught South end of Kilcoole 50pkh zone at Woodstock on R761	16,869	14
R767	N11 Junction 7 (Bray South / Greystones North)	Junction with R761 at south end of Main Street, Bray	9,939	2.6
R768	N11 Junction 7 (Bray South / Greystones North)	Junction with R761 at Windgates Roundabout, south of Bray	13,416	2.8

The Noise Action Plan notes that a programme for further assessment and the implementation of potential noise mitigation measures in areas above the threshold of assessment of 57dB<sub>Lnight</sub> and 70dB<sub>Lden</sub> will be required. The general approach to be taken by Wicklow County Council in managing environmental noise in the area will seek to:

- Promote noise reduction at source;
- Encourage land use planning to comply with noise targets;
- Promote measures to reduce noise impacts; and
- Issue operating restrictions to reduce noise emissions.

The plan concludes that 98.8% of the population of County Wicklow experience noise levels of less than 70dB<sub>Lden</sub>. 1.2% of the population experience levels of greater than 70dB<sub>Lden</sub>. In addition, 92.3% of the population of Wicklow County experience noise levels of less than 55dB<sub>Lnight</sub>. 7.7% of the population experience levels of greater than 55dB<sub>Lnight</sub>.

Wicklow County Council has developed a detailed programme of works for the duration of the Noise Action Plan (up to 2018) and proposes to implement the programme where practicable.

### 4.7.1.3 Climate

The existing climate for the plan area corresponds with the general climatic conditions for the whole country. The climate is dominated by the Atlantic Ocean and its air and oceanic currents and consequently, the region does not suffer from extremes of temperature. According to Met Éireann, the average annual temperature is 9°C, mean annual wind speed varies between about 4 m/sec in the east midlands and 7 m/sec in the northwest of the country whilst average rainfall varies between 800mm - 2,800mm. Rainfall accumulation tends to be highest in winter and lowest in early summer.

According to the Integrated Panel on Climate Change, Ireland's average temperature has increased by about 0.7°C over the last 100 years, and the rate of increase has been higher in the last couple of decades. The increase has not been uniform over time, with a warming period from 1910 to the 1940s, followed by a cooling period up to the 1960s.

The current warming period commenced around 1980. Generally, there has been an increase of approximately 0.5°C in mean temperature between 1961-1990 and 1981-2010 periods, with the highest increases in the south-east of the country. Maximum and minimum temperatures have also increased by approximately 0.5°C.

Whilst we can be less categorical about wind speeds, there is some evidence of a reduction in annual average wind speeds, with a corresponding decrease in the frequency of high wind speeds and gusts. On an annual basis, averaged over the country, there has been an increase of approximately 5% in rainfall totals between the two normal periods (1961-1990 and 1981-2010), with the higher increases in the Western half of the country.



While the national scale of potential change is evident, translating the potential effects of climate change to a region is difficult. National average temperatures are predicted to increase by 1.25-1.5°C by 2040 compared to 1961 to 2000. Rainfall is expected to increase in winter by about 15% and summer projections range from no change to a 20% decrease, potentially along the east coast of the country.

Studies have shown that extreme rainfall events associated with climate change show more marked changes with more events occurring in autumn and a 20% increase in 2-day extreme rain amounts, particularly in northern areas. In light of these projections, it is anticipated that there will be an increase in the number of extreme discharge events and a slight increase in their intensity, leading to an increased probability of flooding in the future.

The potential rise in global temperature might affect the intensity and frequency of storms in the North Atlantic. As such, the potential for flash flooding and erosion increases and this would affect a wide range of ecosystems and economic sectors.

#### 4.7.1.4 Climate Change Targets

In December 2008, the EU Climate Change and Renewable Energy Package set out a number of commitments.

This package commits to reduce the EU's Greenhouse Gas (GHG) emissions from non- Emission Trading Scheme (ETS) sectors (such as transport, agriculture, residential and waste) by 20% on 2005 levels by 2020 or by a more ambitious 30% in the event of a comprehensive global agreement.

As part of the effort-sharing proposal of this package, Ireland is one of the countries facing the highest target of a 20% reduction on 2005 levels for non-ETS sectors. This will result in a limit of approximately 38 Mt CO<sub>2</sub> equivalent for Ireland's non-ETS emissions in 2020, together with annual binding limits for each year from 2013 to 2020.

In October 2014, EU leaders agreed a 2030 policy framework to reduce greenhouse gas emissions by at least 40% compared to a 1990 baseline. No agreement on the contribution of individual EU Member states has yet been reached.

The Climate Action and Low Carbon Development Act was published by government in January 2015. The Act sets out the national objective of transitioning to a low carbon, climate resilient and environmentally sustainable economy in the period up to 2050.

In March 2016, the EPA reported that Ireland is unlikely to meet 2020 EU greenhouse gas targets for all sectors. Current projections indicate that Ireland will be 6-11% below 2005 levels by 2020 against the target of 20%.

The publication Ireland's Environment 2016 – An Assessment (EPA, 2016) provides a high-level summary on the status of greenhouse gases and climate change in an Irish context. It describes the key drivers and pressures and responses to climate change that may occur, providing an outlook of greenhouse gas projections to 2020, and also identifies future challenges to be addressed.

## 4.7.2 Relevant Issues

### 4.7.2.1 Air

Currently there are no significant issues with regard to air quality. Slightly elevated vehicular emissions within the urban area of Bray town are likely however, this is the same for all urban areas. Dust and PM<sub>10</sub> can be an issue locally during construction activities for major schemes.

The EPA have stated that emissions from cars (including particulate matter and nitrogen oxides) are a major concern for health and climate change. However, the prospects for compliance with targets under the EU National Emissions Ceilings Directive are more positive.

Emissions of acidifying gases (excluding NO<sub>x</sub> emissions) are expected to achieve prescribed target emission levels within the next few years. NO<sub>x</sub> emissions are too expected to decline but are likely to remain considerably above the target limit.

#### 4.7.2.2 Noise

Potential future noise mapping was taken into account during the development of the Draft LAP. Consideration has been given to the following issues:

- Bringing people to noise through the zoning or rezoning of land for new housing, schools, hospital developments near to existing sources of noise; and
- Bringing noise to people through the provision of new or altered roads, industrial sites or commercial developments which would alter the ambient noise environment in the vicinity of noise sensitive locations.

#### 4.7.2.3 Climate

As previously mentioned in the Section 4.6.4, climate change will impact on the region's water resources and must be taken into account in all aspects of sustainable planning. Further, increased rainfall intensity and stormy weather increases the potential for flash flooding and erosion which would affect a wide range of ecosystems and economic sectors within the plan area. Consideration has been given to the following issues:

- Climate change mitigation to reduce contributions to climate change and adaptation efforts to cope with the effects of severe events including flooding; and
- Greenhouse gas emissions arising from increased transport, industry, development etc.

### 4.8 Heritage

#### 4.8.1 Baseline

##### 4.8.1.1 Overview

Built heritage is addressed in this report under the following headings:

- Archaeological heritage;
- Architectural heritage; and
- Vernacular heritage.

Wicklow County Council published the County Wicklow Heritage Plan 2009-2014 (Heritage Plan) in 2009. The Heritage Plan outlined an action plan for the conservation, preservation and enhancement of Wicklow's heritage including natural heritage. It is envisaged that a new Heritage Plan is likely to be published and adopted by the end of 2017.

The built heritage refers to all man-made features, buildings or structures in the environment. This includes a rich and varied archaeological and architectural heritage to be found throughout the countryside and within the historic towns and villages of County Wicklow.

The architectural and archaeological heritage of a town, village or place contributes greatly to the distinctive character of each local area.

#### 4.8.1.2 Archaeological Heritage

A record of archaeological heritage is maintained on the 'Record of Monuments and Places' (RMP) which was established under Section 12 of the National Monuments (Amendment) Act, 1994. Structures, features, objects or sites listed in the RMP are known as 'recorded monuments'.

The RMP comprises a list of recorded monuments and places and accompanying maps on which such monuments and places are shown for each county. The National Monuments Service of the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs advises on the protection applying to any particular monument or place under the National Monuments (Amendment) Act, 1994 by reason of it being entered in the RMP and should be consulted if there is any doubt as to the status of the site.

According to the database there are approximately 172 Recorded Monuments within the plan area. Figure 4.13 depicts Recorded Monuments in the vicinity of the plan area.

Any person intending to carry out works at or in relation to a Recorded Monument, or within the zone of archaeological potential, must give the National Monuments Section of the Department of Arts, Heritage and the Gaeltacht two months' notice in writing.

#### 4.8.1.3 Architectural Heritage

As defined by the Heritage Act, 1995, 'architectural heritage' includes all structures, buildings, traditional and designed, and groups of buildings including streetscapes and urban vistas, which are of historical, archaeological, artistic, engineering, scientific, social or technical interest.

The National Inventory of Architectural Heritage (NIAH) is a state initiative under the administration of the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs and established on a statutory basis under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999.

The purpose of the NIAH is to identify, record, and evaluate the post-1700 architectural heritage of Ireland, uniformly and consistently as an aid in the protection and conservation of the built heritage. NIAH surveys provide the basis for the recommendations of the Minister for Arts, Heritage, Regional, Rural and Gaeltacht Affairs to the planning authorities for the inclusion of particular structures in their Record of Protected Structures (RPS).

The plan area incorporates a rich and diverse architectural heritage that forms an integral part of the municipal district. The area comprising the seafront and the esplanade is particularly rich in architectural heritage. Owners and occupiers of protected buildings are required to ensure that buildings do not become endangered through harm, decay or damage. There are 163 RPS in the plan area as illustrated in Figure 4.14.

#### 4.8.1.4 Vernacular Heritage

Vernacular heritage describes the local regional traditional building forms and types using indigenous materials, and without grand architectural pretensions', i.e. the homes and workplaces of the ordinary people built by local people using local materials.

This is in contrast to formal architecture, which were often designed by architects or engineers. The majority of vernacular buildings are domestic dwellings. Examples of other structures that may fall into this category include shops, outbuildings, mills, limekilns, farmsteads, forges gates and gate piers.

## 4.8.2 Relevant Issues

Continued development resulting from the unprecedented economic growth of the past decade and increasing population has increased pressure on sites or features of heritage interest. Individually these developments put direct pressure on architectural heritage, where it is in proximity, or increases the potential to interact with known or previously unknown archaeological sites and features. Cumulatively, this results in negative impact on the overall cultural heritage resources.

The following heritage issues were considered during the preparation of the Draft LAP:

- Direct and indirect impacts on sites of archaeological, architectural and vernacular heritage through development;
- Direct and indirect impacts on historic / heritage landscapes through development;
- Loss of vernacular heritage as a result of the evolution of society and change of building use; and
- Indirect impacts on heritage assets due to continued high levels of vacancy, abandonment and potential dereliction unless addressed.

## 4.9 Landscape and Visual

### 4.9.1 Baseline

#### 4.9.1.1 Landscape

The landscape of County Wicklow comprises mountains, rolling foothills, beaches, forests, lakes and attractive views and prospects. The National Park and the Wicklow Mountain range dominate the County. With the exception of a narrow coastal strip and some low ground in the south, over two thirds of County Wicklow lies above 200m.

The plan area is located along the north east coast of County Wicklow. Bray Head SAAO, SAC and pNHA provides an important landscape feature in to the south east of the plan area. The coastal location of the plan, combined with the location of the N/M11 motorway to the west and Bray Head to the south makes it sensitive to development.

A Landscape Character Assessment of the county has been prepared as part of the County Development Plan. The Landscape Character Assessment focused on characterisation i.e. the discernment of the character of the landscape based on its land cover and landform, but also on its values, such as historical, cultural, religious and other understandings of the landscape. The purpose of this document was to assist in the development of the landscape objectives for the County Development Plan.

The County is divided into fifteen geographically specific Landscape Characters Areas (LCAs). Those LCAs of interest in the Draft LAP are the Urban Areas, the Northern Hills, Glencree/Gencullen, Mountain uplands and Corridor Area East.

In order to inform the Landscape Character Assessment, a landscape sensitivity map was prepared. Landscape sensitivity is a measure of the ability of the landscape to accommodate change or intervention without suffering unacceptable effects to its character and values.

Low sensitivity areas are those with the capacity to generally accommodate a wide range of uses without significant adverse effects on the appearance or character of the area. Landscape sensitivity is deemed to be ‘high’ in some areas of the plan area, particularly in the mountainous areas. The remainder of the plan area mainly consists of lands that are of ‘low’ or ‘medium’ sensitivity.

The CORINE Land Cover (CLC) inventory is a pan-European landuse and landcover mapping programme. It supplies spatial data on the state of the environmental landscape and how it is changing over time. CLC mapping classifies land cover under various headings. The main land use in the urban area of Bray Town according to CLC data is ‘discontinuous urban fabric.’

Discontinuous urban fabric comprises residential areas around the edge of urban district centres, and certain urban districts in rural areas. The main land use to the west of the plan area at the Wicklow Mountains is ‘peat bogs.’ Land use in the remainder of the plan area predominantly consists of a mixture of pastures, forests and agricultural lands. Refer to Figure 4.15 for further detail on the CLC in the vicinity of the plan area.

#### 4.9.1.2 Visual

Scenic routes and protected views consist of important and valued views and prospects within the county. The views and prospects outlined in Table 12 have been identified as being worthy of protection in the Bray Town Development Plan 2011-2017.

Table 12: Protected views and prospects in Bray town (Source: Bray Town Development Plan 2011 -2017)

No.	Protected Views and Prospects
1	The view of Bray Head and the Little Sugar Loaf from the town generally.
2	The prospect towards the River Dargle, its flood plain and adjoining steep-sided wooded slopes from N11.
3	The prospect of the town’s steep western wooded slopes between St. Valery’s Bridge and Kilcrouney, from the N11
4	The view both up and downstream of the Swan River Valley, from both sides of the bridge on the Killarney Road.
5	The view down the River Valley from below Granite Cottage off Boghall Road towards Oldcourt House.
6	The prospect of the Western side of Bray Head from Killarney Road (between cemetery near Elgin Wood and Fairy Hill).
7	The prospect of the western side of Bray Head from the Southern Cross.
8	The view from below Fiddlers Bridge leading to Bray Head back along the Esplanade towards Martello Terrace and the Sailing Club, particularly of the houses along Strand Road.
9	The view from Hedge End on Herbert Road across the wooded area towards King Edward Road.
10	The view from the fenced area above Mount Herbert on Herbert Road towards Fassaroe.
11	The view from the high ground near the Ravenhall site of the churches in Bray namely, St. Paul’s the Holy Redeemer and Christ Church.
12	The view from the Harbour Bridge of the Maltings and the former power station chimney.
13	The view from Old Court Drive towards the Sugar Loaf Mountain and Little Sugar Loaf.
14	The view of Loreto Convent and the spire of Christ Church from Fiddler Bridge on Bray Head.
15	The view from the south harbour along the Promenade and Strand Road

The views and prospects outlined in Table 13 are outside the town of Bray, but within the plan area, have also been identified as being worthy of protection under the County Development Plan.

Table 13: Protected views and prospects in the plan area (Source: County Development Plan)

No.	Protected Views and Prospects
1	Prospect of mountain area around Glenree Drive, Prince William Seat, Glenree River and Sugarloaf Mountain
3	Prospect of Glenree Valley and Sugarloaf
5	Prospects of both sides of Rocky Valley, Kilmacanogue
6	Prospect of sea, cliffs and across southern slopes of Bray Head to R761 from Cliff Walk
9	Prospect of Great Sugarloaf at Calary
11	Prospect to west of Great Sugarloaf, across Kilmacanogue Marsh and Quill Road
66	Prospect of Bray Head from R761
1	View of Sugarloaf Mountains and Enniskerry
3	View of Bray head, Sugarloaf mountain and Djouce Mountain
7	View of Little Sugarloaf
9	View down valley towards sea
36	View of The Scalp and the Scalp Valley from Ballyman

Refer to Figure 4.16 for Protected Views and Prospects in the plan area.

## 4.9.2 Relevant Issues

Existing pressures on landscape and visual are primarily related to impacts to sensitive views and landscapes resulting from the positioning of new development, infrastructure including road, rail, electricity and water-service infrastructure, without sensitivity to these resources.

The following issues were considered during the plan preparation:

- Maintenance of existing landscape character;
- Direct impacts on designated protected landscapes, heritage landscapes and protected views as a result of development; and
- Indirect impacts associated with the development of greenfield and the ecological components of the landscape.

## 4.10 Material Assets

### 4.10.1 Baseline

Material assets refers to all infrastructure and the provision of local services including: transportation, water supply, wastewater treatment and discharge, waste management services electricity supply, telecommunications.

#### 4.10.1.1 Water Supply

The provision of an adequate supply of water and wastewater treatment facilities is critical to facilitate and sustain the growth of the plan area. Wicklow County Council no longer has any direct control in relation to the provision of water services. The delivery, integration and implementation of water and wastewater projects and infrastructural improvements are now the responsibility of Irish Water.



Wicklow County Council work closely with Irish Water to ensure that the County Development Plan and the Draft LAP continue to align with both national, regional and local planning policy and that the provision of water/wastewater services will not be a limiting factor in terms of targeted growth.

The plan area is served by a number of public water supplies, including the Bray Direct Public Supply (EPA code- 3400PUB1001), which serves a population of approximately 5,000, the Bray Reservoir Public Supply (EPA code-3400PUB1002), which serves a population of approximately 25,000, the Enniskerry Public Supply (EPA Code -3400PUB1019) which serves a population of approximately 2,839 and the Kilmacanogue Public Supply (EPA code- 3400PUB1009) which serves a population of approximately 915. The source of all of these water supplies is the Vartry Reservoir.

A Remedial Action List (RAL) of problematic drinking water supplies is released by the EPA on a quarterly basis. The RAL is a public record for the supplies known to be at risk and where the EPA is requiring Irish Water to take corrective action. The EPA has instructed Irish Water to submit an action programme for the improvement of each of these supplies and has initiated enforcement action where action programmes were not being prepared or were not prepared to the satisfaction of the EPA. This includes issuing legally binding directions requiring specific work to be carried out.

Three of the drinking water supplies which serve the plan area were included on the RAL for Q1 of 2017 for those reasons outlined in Table 14.

Table 14: Drinking water remedial action list, Q1 of 2017 (Source: EPA)

Water Supply	Scheme Code	Population Served	Volume supplied (m <sup>3</sup> per day)	RAL Heading	Proposed Action Programme	Date complete
Bray 1	3400PUB100	29,617	9,222	EPA Audit Observation- Treatment and Management Issues	Replacement of Callow Hill Tunnel and upgrade of water treatment plant	Dec-20
Kilmacanogue	3400PUB1009	1,392	201	EPA Audit Observation- Treatment and Management Issues	Replacement of Callow Hill Tunnel and upgrade of water treatment plant	Dec-20
Enniskerry	3400PUB1019	2,743	622	Elevated levels of THMs above the standard in the Drinking Water Regulations	Replacement of Callow Hill Tunnel and upgrade of water treatment plant	Dec-20

#### 4.10.1.2 Wastewater Treatment

With regards to wastewater, the majority of the plan area is served by the Shanganagh-Bray wastewater treatment plant, which opened in January 2013. This treatment plant has a design capacity of 186,000 population equivalent, and is thus far operating with no capacity issues. The EPA reported<sup>11</sup> on wastewater treatment plant performance and capacity has been considered as part of the assessment stage. Enniskerry is served by another wastewater treatment plant located at Cookstown on the Bray Road. This

<sup>11</sup> EPA (2016) *Urban Waste Water Treatment in 2015*. Available from: <http://www.epa.ie/pubs/reports/water/wastewater/>

plat has a design capacity of 6,000 population equivalent and accepts imported sludge from other locations which absorbs much of its capacity.

#### 4.10.1.3 Transport Infrastructure

Bray is approximately 22km from Dublin and connected by M11 / N11 to the west of the town, the DART / rail line and quality bus service. The plan area is located within the metropolitan region of the Greater Dublin Area and the transport infrastructure was analysed by the NTA as part of the Greater Dublin Transport Strategy 2016 -2035.

To facilitate analysis of travel patterns in the Greater Dublin Area, the region was divided into a number of corridors based on the national and regional transport networks. These corridors are primarily used to describe radially-based trips, which represents the most dominant trip pattern within the Greater Dublin Area. The plan area is located in Corridor F which illustrates the following:

- The car mode share for all trip purposes is 70%;
- The public transport mode share for all trip purposes is 11%;
- Outside of the M50 there are significant capacity constraints on providing for further growth in radial demand on the strategic road network. On the rail network, services south of Bray operate on a single line;
- Congestion on the N/M11 route is increasing, particularly around the M50/M11 merge, during peak periods. Capacity on this route will need to be protected through appropriate demand management, in order to safeguard its strategic function. As such, the Strategy will seek to achieve an appropriate balance with the competing demands of strategic movement of high economic value and more locally based commuter traffic;
- North of Bray, there is considerable scope to increase line capacity on the DART. This, along with other, bus-based options will be required to accommodate the bulk of the anticipated growth in demand within this corridor; and
- The existing Luas green line could deliver a limited increase in line capacity. Currently, the line is operating close to its maximum theoretical capacity during the peak demand periods.

#### 4.10.1.4 Waste Management Services

Waste and recycling bin collection services have been privatised in County Wicklow for the past 15 years. The following waste collectors currently provide waste management services in the county:

- Greenstar;
- AWD Waste Solutions Ltd.;
- Ray Whelan Ltd.;
- Advance Environmental Solutions (AES);
- Oxigen Environmental Ltd.;
- Ozo 24/7 Collect & Recycle;
- Thornton; and
- Wastepal Ltd.



There are two EPA waste licenced facilities within the plan area - Starrus Eco Holdings Limited (Fassaroe) and Fassaroe Waste Recovery Facility. As discussed in Section 4.5, Wicklow County Council have also identified a number of sites in the Fassaroe area where known (unlicensed) landfilling activity was carried out historically.

## 4.11 Relevant Issues

Increased development within the plan area including residential and industrial expansion exerts pressure on material assets. The following issues for material assets were considered relevant during the preparation of the Draft LAP:

### Water Supply

- Ongoing maintenance of water supply infrastructure;
- Availability of water supplies into the future is essential to minimise pressure on existing sources. Water shortages will result in impacts to commercial and industrial developments; and
- Proposals for expansion or introduction of new residential and industrial facilities may result in impacts to water quality and ecosystems.

### Wastewater:

- Provision of new wastewater treatment infrastructure.

### Transportation:

- Achieve a sustainable balance between public and private transport modes;
- Protect lands planned for future public transport requirement from development;
- Integration of park and ride services with public transport provisions; and
- Need for significant traffic management/ calming measures, provision of integrated pedestrian/cyclist facilities and reduction in extent of on street car parking etc.

### Waste Management:

- Limited waste management infrastructure and impacts associated with over reliance on landfill.

## 5 Alternatives Considered

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### 5.1 Introduction

Four alternative scenarios for the Draft LAP were examined:

- **Scenario 1:** a scenario that focuses on the consolidation of the town centre;
- **Scenario 2a:** a scenario that focuses on both densification of the town centre and development in Fassaroe;
- **Scenario 2b:** a scenario that focuses on densification of the town centre and development in Fassaroe, Kilruddery and between Bray and Kilmacanogue;
- **Scenario 2c:** a scenario that focuses on densification of the town centre, development in Fassaroe and Kilruddery; and

- **Scenario 3:** a scenario that focuses entirely on development of new greenfield lands at the periphery.

## 5.2 Alternatives Considered

This section provides a summary of the alternative scenarios considered during the development of the Draft LAP. The following scenarios are relevant for the plan area, however it should be noted that Wicklow County Council did not propose any changes to the land use zoning in Enniskerry, Kilmacanogue or rural areas within the municipal district other than those aspects described below.

### 5.2.1 Scenario 1: Consolidation of the town centre

- Start with existing plans (including current provisions under the County Development Plan for Enniskerry and Kilmacanogue);
- Densification of development on all existing housing/mixed use/ town centre lands and change of use of suitable existing non-residential lands to residential use within the boundary of the former Bray Town Development Plan. All extra units achieved within the footprint of the town; and
- Do not alter density or number of units in Fassaroe.

### 5.2.2 Scenario 2a: Densification of the town centre and development in Fassaroe,

- Start with existing plans (including current provisions under the County Development Plan for Enniskerry and Kilmacanogue);
- Densification of development on all existing housing/mixed use/ town centre lands but no changes of use from non-residential use to residential (i.e. no open spaces/employment zones etc. to change to residential); and
- Shortfall to be made up by increasing number of units to be allowed in Fassaroe. This will reduce land dedicated to other uses e.g. employment.

### 5.2.3 Scenario 2b: Densification of the town centre and development in Fassaroe and greenfield lands

- Start with existing plans (including current provisions under the County Development Plan for Enniskerry and Kilmacanogue);
- Densification of development on all existing housing/mixed use/ town centre lands but no changes of use from non-residential use to residential (i.e. no open spaces/employment zones etc. to change to residential); and
- Shortfall to be made up by combination of some increases in Fassaroe and some zoning of greenfield lands at the periphery of the town e.g. around Kilruddery, between Bray and Kilmacanogue (only such a quantum of zoning that can be accommodated in this sensitive area –sensitivities including lands, Bray Head, Sugarloaf etc.) Capacities of these areas given sensitivities would determine how much should be channelled towards Fassaroe.

## 5.2.4 Scenario 2c: Densification of the town centre and development in Fassaroe and Kilruddery

- Start with existing plans (including current provisions under the County Development Plan for Enniskerry and Kilmacanogue);
- Densification of development on all existing housing/mixed use/ town centre lands and change of use of suitable existing non-residential lands to residential use within the boundary of the former Bray Town Development Plan (i.e. all extra units achieved within the footprint of the town); and
- Shortfall to be made up by combination of some increases in Fassaroe and limited additional zoning of greenfield lands around Kilruddery. Capacities of these areas given sensitivities would determine how much should be channelled towards Fassaroe.

## 5.2.5 Scenario 3: Development of new greenfield lands at the periphery.

- Start with existing plans (including current provisions under the County Development Plan for Enniskerry and Kilmacanogue);
- Make up for entire shortfall by significant zoning of new greenfield lands at periphery e.g.:
  - at Kilruddery;
  - between Bray and Kilmacanogue; and
  - west and south of Fassaroe.

## 5.3 Assessment of Alternatives

This section provides a detailed description and assessment of those alternative development scenarios outlined in Section 5.2.

### 5.3.1 Scenario 1: Consolidation of the town centre

Scenario 1 seeks to remedy the shortfall in housing by increasing the density of residential development in Bray town centre and changing the use of suitable non-residential land for residential development. Concentrating residential development in the town centre means that unzoned land in the environs of the plan area would not be impacted. This is generally beneficial for population and human health and air, noise and climate in that it limits sprawl of the town, maintains the urban/rural distinction, reduces traffic across the plan area and provides for large areas of open space with the environs of the plan area. However high population density arising from extensive residential development in Bray town could strain material assets and exacerbate landscape and visual impacts in Bray town. Further, the reduction in land zoned for employment use may limit employment opportunities for the local community, therefore impacts on population and human health are considered to be uncertain.

Scenario 1 would limit greenfield development and ensure that there is no new housing development undertaken in greenfield sites. This is consistent with the baseline conditions and considered to be neutral for the environment.

This scenario ultimately aims to reduce the zoning footprint of the environs of the plan area by increasing the density of development in the town centre. A reduction in zoning footprint means less extensive development which ultimately results in a reduced environmental impact. It could be considered that this scenario may limit the overall development potential and prosperity of the plan area by reducing employment opportunities for the local community.

### 5.3.2 Scenario 2a: Densification of the town centre and development in Fassaroe

Scenario 2a seeks to address the existing shortfall of housing by increasing the density of existing housing/mixed use/ town centre zoned lands in Bray. This scenario does not include any provision for change of use/zoning of new lands in Bray town centre. Additionally, the number of units to be allowed in Fassaroe would be increased to make up the shortfall by changing the use of existing zonings in the area where appropriate e.g. employment land to residential.

The densification of existing residential/mixed use/town centre zoned lands is likely to result in a neutral environmental impact when compared to the other scenarios. These lands are already zoned for development under the preceding town and environs local area plans therefore new sites will not be required for development and additional environmental impacts can be avoided. The provision of additional housing in the town centre is considered to be positive for population and human health considering the shortfall in housing in the area. It is however likely that the densification of development may strain material assets and exacerbate landscape and visual impacts in Bray town. Further, the densification of housing in the town centre may exacerbate air, noise and climate impacts due to increased congestion.

Scenario 2a also involves the change of use of existing (non-residential) zones in Fassaroe such to residential use. These lands are already zoned for development under the existing Bray Environs Local Area Plan 2009-2015. As such, new greenfield sites will not be zoned for residential use and additional environmental impacts can be avoided. This provision of additional housing through rezoning can lead to a positive impact on population and human health when considered in the context of the existing housing shortfalls in the plan area, however it would reduce employment opportunities associated with employment zoned land. It is also noted, that additional residential development may strain material assets and provision should be made for sufficient infrastructure to facilitate high density residential zonings, particularly in those portions of the plan area that lay outside of Bray town. Further, the provision of additional housing development in Fassaroe may give rise to landscape and visual impacts if units are too intrusive in this rural area.

### 5.3.3 Scenario 2b: Densification of town centre and development in Fassaroe and greenfield lands

Scenario 2b seeks to address the existing shortfall of housing by increasing the density of development within existing housing/mixed use/town centre lands in Bray, Fassaroe and peripheral town lands. This scenario does not include any provision for change of use/zoning of new lands in Bray town centre. Additionally, the number of units to be allowed in Fassaroe would be increased to make up the shortfall by changing the use of existing zonings in the area where appropriate e.g. employment land to residential. Further, zoning at some of the greenfield sites on the periphery of the town around Killruddery would be changed to accommodate additional residential development.

The densification of existing residential/mixed use/town centre zoned lands is likely to result in a neutral environmental impact when compared to the other scenarios. These lands are already zoned for development under the preceding town and environs local area plans therefore new sites will not be required for development and additional environmental impacts can be avoided. The provision of additional housing in the town centre is considered to be positive for population and human health considering the shortfall in housing in the area. It is however likely that the densification of development may strain material assets and exacerbate landscape and visual impacts in Bray town. Further, the densification of housing in the town centre may exacerbate air, noise and climate impacts due to increased congestion.

Scenario 2b also involves the change of use of existing (non-residential) zones in Fassaroe such to residential use. As previously noted, these sites are already zoned and no new greenfield sites will be

required. This provision of additional housing through rezoning can lead to a positive impact on Population and Human Health when considered in the context of the existing housing shortfalls in the plan area, however it would reduce employment opportunities associated with employment zoned land. It is also noted, that residential development may strain material assets and provision should be made for sufficient infrastructure to facilitate high density residential zonings, particularly in those portions of the plan area that lay outside of Bray town. Further, the provision of additional housing development in Fassaroe may give rise to landscape and visual impacts if units are too intrusive in this rural area.

Scenario 2b also comprises the conversion of greenfield sites to residential use in peripheral lands around Kilruddery and between Bray and Kilmacanogue. This rezoning and associated development of greenfield land is generally negative for the environment due to the loss of greenfield and the natural environment. The impact on population and human health is considered to be uncertain as the provision of additional housing is generally considered to be positive whilst the reduction in green space has the potential to be negative.

### **5.3.4 Scenario 2c: Densification of town centre and development in Fassaroe and Kilruddery**

Scenario 2c seeks to address the existing shortfall of housing by increasing the density of development within existing housing/mixed use/town centre lands in Bray, Fassaroe and Kilruddery. This scenario provides for change of use/zoning of suitable lands in Bray town centre. Additionally, the number of units to be allowed in Fassaroe would be increased to make up the shortfall by changing the use of existing zonings in the area where appropriate e.g. employment land to residential. Further, small portions of zoning at some of the greenfield sites around Kilruddery would be changed to accommodate additional residential development. This scenario would fulfil the overarching growth objectives for the plan area by facilitating projected population growth and enabling additional housing across the plan area in suitable lands instead of concentrating development in specific areas within the plan area. It is considered that the distribution of land use change across the plan area and balanced quantum of development would not significantly reduce employment opportunities within settlements or strain material assets.

Scenario 2c seeks to remedy the shortfall in housing by increasing the density of residential development in Bray town centre and changing the use of suitable non-residential land for residential development. Concentrating residential development in the town centre is generally beneficial for population and human health and air, noise and climate and landscape and visual in that it limits sprawl of the town, maintains the urban/rural distinction, reduces traffic across the plan area and provides for large areas of open space with the environs of the plan area.

Scenario 2c also involves the change of use of suitable existing (non-residential) zones in Fassaroe to residential use. As previously noted, these sites are already zoned for residential and mixed use development and no new greenfield sites will be required. This provision of additional housing through rezoning can lead to a positive impact on Population and Human Health when considered in the context of the existing housing shortfalls in the plan area. It is also noted that the provision of high density residential development in Fassaroe may give rise to landscape and visual impacts if units are too intrusive in this rural area.

Scenario 2c also comprises the conversion of greenfield sites to residential use in peripheral lands around Kilruddery. This rezoning and associated development of greenfield land is generally negative for the environment due to the loss of greenfield and the natural environment. The impact on population and human health is considered to be uncertain as the provision of additional housing is generally considered to be positive whilst the reduction in green space has the potential to be negative.

### 5.3.5 Scenario 3: Development of new greenfield lands at the periphery

Scenario 3 seeks to address the existing shortfall of housing by changing the zoning at some greenfield sites on the periphery of the town around Kilruddery, between Bray and Kilmacanogue and to the west and south of Fassaroe to accommodate additional residential development.

This rezoning and associated development of greenfield land is generally negative for the environment due to the loss of greenfield and natural environment. The impact on population and human health is considered to be uncertain as the provision of additional housing is generally considered to be positive whilst the reduction in green space has the potential to be negative.

### 5.3.6 Emerging Preferred Development Scenario

The assessment process categorised environmental impacts using the ratings outlined in Table 15 which is based on the impact assessment criteria defined by the EPA for environmental impact assessment.

Table 15: Impact ratings

Significance of Impact	
Positive	Positive
Neutral	Neutral
Negative	Negative
Uncertain	Uncertain

Table 16 identifies the likely unmitigated impacts associated with each of the alternative development scenarios. The emerging preferred development scenario is Scenario 2c.

As noted in Section 5.3.2, Scenario 2c seeks to address the existing shortfall of housing by increasing the density of development on existing housing/mixed use/town centre lands, and by increasing the number of units to be allowed in Fassaroe.

Table 16: Environmental assessment of the likely impacts from the alternatives considered for the Draft LAP

Scenario	Description	SEA Environmental Objectives							
		Biodiversity	Population and Health	Soils and Geology	Water Resources	Air, Noise and Climate	Heritage	Landscape & Visual	Material Assets
Scenario 1	Start with existing plans	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
	Densification of development on all existing housing/mixed use/ town centre lands and change of use of suitable existing non-residential lands to residential use within the boundary of the former Bray Town Dev. Plan. All extra units achieved within the footprint of the town	Blue	Yellow	Blue	Blue	Green	Red	Red	Red
	Do not alter density or number of units in Fassaroe.	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Scenario 2a	Start with existing plans	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
	Densification of development on all existing housing/mixed use/ town centre lands but no changes of use from non-residential use to residential (i.e. no open spaces/employment zones etc. to change to residential)	Blue	Green	Blue	Blue	Red	Blue	Red	Red
	Shortfall to be made up by increasing number of units to be allowed in Fassaroe. This will reduce land dedicated to other uses e.g. employment.	Blue	Yellow	Blue	Blue	Blue	Blue	Yellow	Yellow
Scenario 2b	Start with existing plans	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
	Densification of development on all existing housing/mixed use/ town centre lands but no changes of use from non-residential use to residential (i.e. no open spaces/employment zones etc. to change to residential)	Blue	Green	Blue	Blue	Red	Blue	Red	Red
	Shortfall to be made up by combination of some increases in Fassaroe and some zoning of greenfield lands at the periphery of the town e.g. around Kilruddery, between Bray and Kilmacanogue (only such a quantum of zoning that can be accommodated in this sensitive area –sensitivities including lands, Bray Head, Sugarloaf etc. Capacities of these areas given sensitivities would determine how much should be channelled towards Fassaroe.	Red	Yellow	Red	Red	Red	Red	Red	Red
Scenario 2c	Start with existing plans	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
	Densification of development on all existing housing/mixed use/ town centre lands and change of use of suitable existing non-residential lands to residential use within the boundary of the former Bray Town Development Plan. All extra units achieved within the footprint of the town	Blue	Green	Blue	Blue	Green	Blue	Green	Blue



Scenario	Description	SEA Environmental Objectives							
		Biodiversity	Population and Health	Soils and Geology	Water Resources	Air, Noise and Climate	Heritage	Landscape & Visual	Material Assets
	Shortfall to be made up by combination of some increases in Fassaroe and some zoning of greenfield lands around Kilruddery, (only such a quantum of zoning that can be accommodated in this sensitive area. Capacities of these areas given sensitivities would determine how much should be channelled towards Fassaroe.	Red	Yellow	Red	Red	Red	Red	Red	Red
Scenario 3	Start with existing plans	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
	Make up for entire shortfall by significant zoning of new greenfield lands at periphery e.g.: <ul style="list-style-type: none"> <li>- At Kilruddery;</li> <li>- Between Bray and Kilmacanogue; and</li> <li>- West and South of Fassaroe.</li> </ul>	Red	Yellow	Red	Red	Red	Red	Red	Red



## 6 SEA Objectives, Targets and Indicators

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### 6.1 Introduction

The SEA is designed to assess the potential environmental impact of the policies of the Draft LAP against the baseline (as described in Section 4). This section describes the objectives, indicators and targets used as part of the SEA for the Draft LAP.

The policies and recommendations in the Draft LAP are assessed against a range of established environmental objectives and targets. Further, indicators that are recommended in the SEA are utilised over the lifetime of the Draft LAP to quantify the level of impact that the Draft LAP may have on the environment. This enables us to measure whether they were successful in promoting the sustainable development of the plan area.

### 6.2 Environmental Objectives

The formation of the environmental objectives required cognisance of the environmental protection objectives established at a range of levels through the legislation and guidance (as described in Section 2). Global, EU and national level legislation, policy and associated environmental objectives were utilised to develop the following environmental objectives for the Draft LAP. The objectives are also placed in the context of and linked into the development of the policies and recommendations in the Draft LAP to ensure that the objectives are appropriate for the plan area.

The environmental objectives for the Draft LAP are as follows:

#### **Biodiversity**

- Conserve and protect the diversity of habitats and species by limiting adverse impacts on habitats and species of conservation concern.

#### **Population and Human Health**

- Improve people's quality of life based on high-quality residential, working and recreational environments and on sustainable travel patterns.

#### **Land and Soils**

- Protect quality and quantity of existing soil and geology.

#### **Water**

- Improve/maintain and protect water quality and the management of watercourses to comply with the standards of the Water Framework Directive and incorporate the objectives of the Floods Directive into sustainable planning and development.

#### **Air, Noise & Climate**

- Maintain and promote continuing environmental improvement where possible of emissions to air (including noise emissions).

#### **Archaeological, Architectural and Cultural Heritage**

- Promote the protection and conservation of the archaeological, architectural and cultural **heritage**.

## Landscape & Visual

- Conserve and enhance valued natural and historic landscapes and features within them.

## Material Assets

- Make best use of existing infrastructure, promote the sustainable development of new infrastructure and promote the sustainable efficient use of resources.

## 6.3 Environmental Targets

Each of the environmental objectives outlined in Section 6.2 has a range of targets which the policies and recommendations in the Draft LAP are aimed towards. These targets need to be quantifiable to ensure that monitoring can be carried out effectively. The following targets have been established to direct the sustainable implementation of the policies and recommendations in the Draft LAP and to ensure that the environment is maintained and/or improved where possible.

### Biodiversity

- Consider siting of new development on non-sensitive sites;
- Improve/conservate and protect all designated sites and species within and adjacent to the plan area;
- Deliver the requirement of the Habitats Directive (Article 4, Paragraph 4) for the maintenance or restoration of annexed habitats and species within SACs at a 'favourable conservation status';
- Promote the maintenance and, as appropriate, achievement of favourable conservation status of habitats and species, in association with the NPWS and other stakeholders;
- Protect SPAs, Annex I bird species, and regularly occurring migratory bird species and their habitats, and avoid pollution or deterioration of important bird habitats outside SPAs;
- Improve the ecological coherence of Natura 2000 network by encouraging the management of, maintaining, and where appropriate developing, features of the landscape which are of major importance for wild fauna and flora. Such features are those which, by virtue of their linear and continuous structure (such as rivers with their banks or the traditional systems for marking field boundaries) or their function as stepping stones (such as ponds or small woods), are essential for the migration, dispersal and genetic exchange of wild species;
- Protect NHAs, National Parks, Nature Reserves, Wildfowl Sanctuaries, Refuges for Fauna or Flora and sites proposed for designation;
- Improve/maintain protection for important wildlife sites, particularly urban wildlife corridors and linear and stepping stone features for migration, dispersal and exchange of wildlife and
- Improve access for the appreciation and promotion of wildlife.

### Population and Human Health

- Minimise population exposure to high levels of noise, vibration and air pollution;
- Increase modal shift to public transport;
- Improve local employment opportunities;
- Co-ordinate land use and transportation policies; and
- Improve access to recreation opportunities.

## Land and Soils

- Prevent pollution of soil through adoption of appropriate environmental protection procedures during construction and maintenance works on site;
- Ensure polluting substances are appropriately stored and banded;
- Ensure appropriate management of existing contaminated soil in accordance with the requirements of current waste legislation;
- Re-use of brownfield lands, rather than developing greenfield lands, where possible; and
- Minimise the consumption of non-renewable sand, gravel and rock deposits.

## Water

- Support the achievement of “good” ecological and chemical status/potential of waterbodies in accordance with the WFD;
- Minimise flood risk through appropriate management of flood vulnerable zones; and
- Promote sustainable drainage practices to improve water quality and flow

## Air, Noise & Climate

- Minimise air and noise emissions during construction and operation of new developments;
- Promote minimisation of greenhouse gas emissions to the atmosphere; and
- Mitigate climate change impacts and support adaptation efforts.

## Heritage

- Regeneration of derelict and underutilised heritage sites;
- Improve appearance of areas with particular townscape character;
- Improve protection for protected archaeological sites and monuments and their settings, protected structures and conservation areas and areas of archaeological potential; and
- Enhance access to sites of heritage interest.

## Landscape & Visual

- Improve protection for landscapes of recognised quality;
- Maintain clear urban/rural distinctions;
- Enhance provision of, and access to, green space in urban areas; and
- Ensure development is sensitive to its surroundings.

## Material Assets

- Improve availability and accessibility of commercially provided facilities and public services;
- Improve efficiencies of transport, energy and communication infrastructure;
- Promotion of sustainable transport infrastructure i.e. increased public transport; and
- Reduce the generation of waste and adopt a sustainable approach to waste management.

## 6.4 Environmental Indicators

The assessment of policies and recommendations with respect to the environmental objectives and targets is required to be measurable. The environmental indicators used for measuring need to be capable of the following:

- Describing trends in the baseline environment;
- Demonstrating the likely significant impact of the implementation LAP;
- Being used in a monitoring programme;
- Providing an early warning of significant unforeseen adverse effects;
- Prioritising key environmental impacts; and
- Ensuring the number and range of environmental indicators are manageable in terms of time and resources.

Consequently a range of Environmental Indicators required to assess the level of impact of the Draft LAP on the environment are outlined in Table 17.

Table 17: Environmental indicators

Item	Draft SEA Indicator
Biodiversity	Number and extent of protected sites. Areas actively managed for conservation. Population and range of protected species. Achievement of the Objectives of Biodiversity Plans.
Population & Health	Census population data. Rates of unemployment per area. % increase in housing (number and type).
Soils & Geology	Rates of re-use / recycling of construction waste. Rates of cement / concrete production. Rates of brownfield site and contaminated land reuse and development. Rates of greenfield development.
Water Resources	Compliance of potable water sources with water quality regulations. Compliance of surface waters with national and international standards. Potable and wastewater treatment capacities versus population. % of wastewater receiving tertiary treatment. Achievement of the Objectives of the River Basin Management Plans. Amount of new developments within flood plains. Annual costs of damage related to flood events.
Air, Noise & Climate	Traffic, transport and vehicular survey data. National and region specific emission data. Compliance with national standards. Reduction in greenhouse gas emissions. Number and extent of emission licensed facilities. Number of energy / renewable energy production facilities. Rates of energy / renewable energy consumption.

Item	Draft SEA Indicator
Heritage	Updating of inventories to include new sites / features. Achieving the objectives of development plans regarding heritage protection. Range and extent of areas of heritage potential. Range and extent of areas of special planning controls.
Landscape & Visual	Range and extent of amenity landscapes. Rates of development within designated landscapes. Rates of urban expansion. Rates of deforestation. Rates of agricultural land re-development. % change of land use from rural to urban.
Material Assets	Location / level of infrastructure. Achievement of development plan objectives. Rates of deprivation. Rate of waste disposal to landfill statistics. Range and extent of recycling facilities and services. Rates of recycling.

## 7 Impact Assessment

### 7.1 Introduction

The approach used for assessing likely significant impacts was objectives led. The assessment was primarily qualitative in nature, with some assessment based on expert judgement. This qualitative assessment compares the likely impacts against the objectives to see which policies and recommendations in the Draft LAP meet the objectives and which, if any, contradict these.

Particular reference was made to the potential for cumulative effects in association with other relevant plans and programmes within the Wicklow County and the Greater Dublin Area. Specifically, consideration has been given to the integration of Kilmacanogue and Enniskerry into the plan area in Section 7.2 and 7.3.

Particular regard was also paid to the need for the sustainable development of ecological resources (including the conservation of fish and other species of fauna and flora, habitats and the biodiversity of water ecosystems and commercial and natural fisheries) as economic resources. In conjunction with the Appropriate Assessment due consideration was given to potential significant impacts of the policies and recommendations on ecological resources for the following areas:

- Surface and ground water quality;
- Surface water hydrology;
- Fish spawning and nursery areas;
- Passage of migratory fish;
- Areas of natural heritage importance;
- Designated marine protected areas;
- Biological diversity;
- Ecosystem structure and functioning;

- Seabirds and marine mammals;
- Fish and shellfish cultivation;
- Sport and commercial fishing and angling;
- Amenity and recreational areas;
- Mineral and aggregate resources;
- Sediment transport and coastal erosion;
- Navigation; and
- Other legitimate use of the sea.

The assessment process categorised environmental impacts using the ratings outlined in Table 18 which is based on the impact assessment criteria defined by the EPA for environmental impact assessment.

Table 18: Impact ratings

Significance of Impact	
	Positive
	Neutral
	Negative
	Uncertain

The matrix provided in Table 19 identifies potential impacts associated with the objectives outlined in the Draft LAP. It assesses all objectives in the Draft LAP in an unmitigated scenario against the baseline conditions described in Section 4. The matrix provided in Table 20 identifies potential unmitigated impacts associated with the new land zonings outlined in the Draft LAP.

Where potential impacts are identified, it is expected that these can be mitigated through the implementation of those measures outlined in Table 21. It should be noted that the planning objectives outlined in the County Development Plan have not been repeated in Table 19 and Table 20, but are considered applicable to the Draft LAP.

Having regard to the objectives of the County Development Plan, in particular objectives NH1, NH8, NH24, NH36, NH20, NH21, NH23, BH1, BH2, BH3, BH9, BH10, it is assumed that the necessary provisions for the protection of biodiversity, land and soils, water and heritage will be undertaken prior to any development within the plan area.

## 7.2 Integration of the new areas into the Draft LAP

The Draft LAP incorporates two new areas (Kilmacanogue and Enniskerry) into the plan area. These areas were not previously included in the preceding local area plan and were considered as part of the County Development Plan. The inclusion of these areas is assessed in this Environmental Report.

The County Development Plan is currently being varied by Wicklow County Council to remove reference to the Kilmacanogue and Enniskerry areas. A SEA screening of this variation has also been completed and accompanies the variation.

### 7.3 Assessment matrix for the Draft LAP objectives of relevance to the plan area

Table 19: Environmental assessment of likely impacts of the Draft LAP objectives

Ref	Text	SEA Environmental Objectives								Comments	
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets		
<b>Residential Development Objectives</b>											
R1	All new housing developments shall be required to accord with the housing objectives and standards set out in the Wicklow County Development Plan										This is existing policy, therefore representing the baseline situation. As such, neutral impacts are envisaged,
R2	In order to make best use of land resources and services, unless there are cogent reasons to the contrary, new residential development shall be expected to aim for the highest density indicated for the lands. The Council reserves the right to refuse permission for any development that is not consistent with this principle. Lands zoned Residential – High Density will be expected to achieve a density of not less than 50 units / hectare.										<p>The creation of high density residential development is likely to positively impact on population and human health through the increase of local housing for the community.</p> <p>The creation of high density housing within the plan area has the potential to strain existing infrastructure and services. However, it is considered that the transport, energy and communications infrastructure is likely to be capable of coping with increased demand and that no major works are likely for development in urban areas. It considered that impacts on material assets are uncertain.</p> <p>It is assumed that this objective does not include any greenfield development, therefore all other impacts are assessed as neutral.</p>

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
R3	Housing development shall be managed and phased to ensure that infrastructure and in particular, community infrastructure, is provided to match the need of new residents. Where specified by the Planning Authority, new significant residential or mixed use development proposals, may be required to provide a social and community facility/facilities as part of the proposed development or the developer may be required to carry out a social infrastructure audit, to determine if social and community facilities in the area are sufficient to provide for the needs of the future residents. Where deficiencies are identified, proposals will be required to either rectify the deficiency, or suitably restrict or phase the development in accordance with the capacity of existing or planned services.									The creation of housing developments with appropriate infrastructure is likely to positively impact on population and human health through the increase of local housing availability and provision of social infrastructure for the community. It is assumed that this objective does not include any greenfield development, therefore all other impacts are assessed as neutral.
R4	To encourage in-fill housing developments, the use of under-utilised and vacant sites and vacant upper floors for accommodation purposes and facilitate higher residential densities at appropriate locations, subject to a high standard of design, layout and finish.									The encouragement of in-fill housing and optimisation of land use for housing is likely to positively impact on population and human health through the increase of local housing for the community. It is assumed that this objective does not include any greenfield development, therefore all other impacts are assessed as neutral.
<b>Economic Development and Employment Objectives</b>										
E1	To support all forms of employment creation, especially where this can mitigate long distance commuting, subject to the proper planning and sustainable development of the area and compliance with all other objectives of this plan.									The creation of employment is likely to positively impact on population and human health through the provision of local employment opportunities and more sustainable commuting patterns for the community. The creation of employment within the plan area has the potential to strain existing infrastructure and services. However, it is considered that the transport, energy and communications infrastructure is likely to be capable of coping with increased



Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
										<p>demand and that no major works are likely for development in urban areas. It considered that impacts on material assets are uncertain.</p> <p>It is assumed that this objective does not include any greenfield development, therefore all other impacts are assessed as neutral.</p>
E2	To normally require new employment generating developments to locate on suitably zoned in settlements. Proposals in settlements with no zoning plan should be assessed on the basis of their individual merits, taking into consideration the objectives set out in this chapter of the plan and all other matters pertaining to the proper planning and sustainable development of the area, including ensuring that the proposal is appropriately sited in a location so that it enhances, complements, is ancillary to or neutral to the existing land uses in the area. All other proposals for employment generating developments outside of settlements will be assessed on the 'Objectives for Wicklow's Rural Economy									<p>The provision of employment generating development in suitable areas is likely to result in a positive impact on population and human health through the provision of local employment opportunities and more sustainable commuting patterns for the community.</p> <p>Employment generating development is prioritised in suitably zoned development and appropriate sites in settlements within the plan area. It is considered that new employment generating development would be sustainably developed in zoned, urban areas and that this does not include any greenfield development, therefore all other impacts are assessed as neutral.</p>
E3	To protect employment zoned land from inappropriate development that would undermine future economic activity or the sustainable development of such areas									<p>The protection of employment zoned land from inappropriate development would support opportunities for employment and coordinated land use planning within the plan area. The safeguarding of such land would result in a positive impact on population and human health through the facilitation of economic activity and local employment opportunities in the community.</p> <p>By protecting employment zoned land and advocating for sustainable development in such areas, it is unlikely that any significant environmental impacts would result, therefore all other impacts have been assessed as neutral.</p>

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
E4	To encourage the redevelopment of brownfield sites for enterprise and employment creation throughout the District and to consider allowing ‘relaxation’ in normal development standards on such sites to promote their redevelopment, where it can be clearly demonstrated that a development of the highest quality, that does not create an adverse or unacceptable working environment or create unacceptable impacts on the built, natural or social environment, will be provided.									<p>The redevelopment of brownfield for enterprise and employment would positively impact on population and human health through the provision of employment opportunities in the local community.</p> <p>The landscape and visual impacts that may arise from such brownfield redevelopment are also unknown at this stage. It is unclear as to which sites would be redeveloped and the extent of previous development. New development could be more, or less visually intrusive than a previous development, therefore landscape and visual impacts are uncertain.</p> <p>Material assets impacts are also uncertain at this stage. The creation of employment within brownfield sites could strain existing infrastructure and create waste arisings, resulting in a negative impact on materials assets. However, it is considered that the transport, energy and communications infrastructure is likely to be capable of coping with increased demand and that connections to the existing grids would be integrated for development in urban areas.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>
E5	<p>Bray is an important centre for film making, based largely on the presence of Ardmore Studios. The industry contributes significantly to direct and indirect employment and also contributes to the international image of Bray. The Council will encourage the on-going development of the industry in Bray including the use of the studio as a visitor attraction. It is the objective of the Council to:</p> <ul style="list-style-type: none"> <li>facilitate and support the film industry in the District, including the development of new production facilities at appropriate locations</li> </ul>									<p>The protection, encouragement and support of the film industry would safeguard appropriate land and developments and generate positive outcomes associated with local employment, recreation and tourism opportunities. This is considered to have a positive impact on population and human health through the facilitation of economic activity as well as employment opportunities for the local community.</p> <p>Existing policy identifies the need to facilitate the film industry in Bray and restrict proposals to change the use of lands zoned for the industry in the plan area. It is unlikely that any additional significant environmental impacts would result, therefore all other impacts have been assessed as neutral.</p>

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
	<p>and the use of the County for film locations, including the erection of temporary structures and services</p> <ul style="list-style-type: none"> <li>resist and restrict proposals for change of use of lands zoned 'Film Industry' in the plan area.</li> </ul>									
E6	<p>It is the objective of the Council to promote and facilitate the development of large-scale employment generating developments, including industrial, knowledge, high-technology, office and service based and science space developments, at appropriate locations.</p>									<p>The provision of large-scale employment is likely to result in a positive impact on population and human health through the provision of a coordinated approach to land use master planning and employment opportunities for the community.</p> <p>The construction of large-scale employment development may strain on existing infrastructure and material assets within the plan area. Further, the construction of new large scale employment generating developments in greenfield can give rise to a range of environmental impacts. Further, the nature of impacts arising from such development is generally negative for material assets as demand on infrastructure and services is likely to increase with large scale development. Appropriate mitigation measures are outlined in Table 21.</p> <p>It is assumed that this objective does not include any greenfield development, therefore all other impacts are assessed as neutral.</p>
E7	<p>To encourage and facilitate the development of knowledge, high-technology and service based specialist industries at appropriate locations, in accordance with the relevant development and environmental standards, and to support and strengthen the capability and quality of research and development functions in the District. The Council will promote the clustering of these type industries and other inter-related industries.</p>									<p>The encouragement and development of service based specialist industries is likely to result in a positive impact on population and human health through increased education and employment opportunities for the local community.</p> <p>The development and clustering of knowledge, high-technology and service based specialist industry and inter-related industry within the plan area has the potential to strain existing infrastructure and services. However, it is considered that the transport, energy and communications infrastructure is likely to be capable of coping with increased demand and that no major works are likely for</p>

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
										development in urban areas. It considered that impacts on material assets are uncertain. It is assumed that this objective does not include any greenfield development, therefore all other impacts are assessed as neutral.
E8	<p>To encourage and facilitate the provision of office developments and small-scale service industries at appropriate locations. The most suitable location for local or small-scale office developments and small-scale service industries is generally in above-ground floor commercial premises at appropriate locations in town / village centres and neighbourhood centres. The development of these types of uses in neighbourhood centres can reinforce the existing service function of these centres, as well as create new opportunities for local employment in locations that are accessible to residential areas.</p> <p>The Council will permit office development in appropriate employment zoned locations that are deemed suitable with regard to sustainable traffic and land use considerations.</p>									<p>The facilitation of office development and small-scale services industries is likely to result in a positive impact on population and human health through the provision of local employment opportunities for the community.</p> <p>It is considered that the most suitable location for such development would be those over-site locations and those neighbourhood centres and appropriately zoned sites that have vacant office space and appropriate infrastructure in place. It is unlikely that any significant environmental impacts would arise, therefore all other impacts have been assessed as neutral.</p>
E9	<p>To encourage and facilitate the development of small to medium scale indigenous industries and services at appropriate locations within settlements. The Council acknowledges that the development of small scale projects with long term employment potential are important in sustaining both urban and rural settlements in County Wicklow and as such, the Council will adopt a proactive and flexible approach in dealing with applications on a case-by-case basis.</p>									<p>The encouragement and facilitation of small to medium scale indigenous industries and services is likely to result in a positive impact on population and human health through the provision of local economic activity and employment opportunities for the community.</p> <p>Additional small scale industrial projects and commercial activities within the plan area could strain existing infrastructure, resulting in a negative impact on materials assets. However, it is considered that the transport, energy and communications infrastructure is likely to be capable of coping with increased demand and that no major</p>

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										works are likely for development in urban areas. It considered that impacts on material assets are uncertain. It is assumed that this objective does not include any greenfield development, therefore all other impacts are assessed as neutral.
<b>Town centre development objectives</b>										
TC 1	To ensure the continued vibrancy and life of centres, to direct new development and investment into settlement centres (i.e. the ‘town centres’ and ‘primary development areas’) in the first instance and to particularly prioritise actions that enhance business, retail, leisure, entertainment and cultural uses, as well as making town centres an attractive place to live.									The enhancement of the town centre as an attractive place to live would improve accessibility to and within the town centre, quality of life for the local population as well as enhance business, retail, leisure, entertainment and cultural uses. This would positively impact on the population and human health. Further, this continued development of the town centres is likely to strengthen the urban/rural distinction and contribute to regeneration that ensures development is sensitive to its surroundings. This is considered a positive impact on landscape and visual. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
TC 2	To vigorously protect and promote the vitality and viability of town centres. Development proposals not according with the fundamental objective to support the vitality and viability of town centre sites must demonstrate compliance with the ‘sequential approach’ before they can be approved. The ‘sequential approach’ shall be applied and assessed in accordance with the ‘Retail Planning Guidelines, (DoECLG, 2012)’. The Planning Authority will discourage new retail development if they would either by themselves or cumulatively in conjunction with other developments seriously damage the vitality and viability of existing retail centres within the District. In the application of the ‘sequential									Enhancing the vitality and viability of city and town centres in all their functions through sequential development is an overarching objective in retail planning and the County Development Plan that is promoted through the Retail Planning Guidelines. This would positively impact on material assets by making the best use of existing infrastructure and improving the accessibility and availability of commercial premises in town centres. Retail development will be promoted in the core retail area of the town centre with due consideration to the sequential approach within the plan area. The development of retail in town centres is likely to strengthen the urban/rural distinction and contribute to regeneration that ensures development is undertaken sequentially in a manner that is sensitive

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	approach' due regard shall be paid to RT4 below which prioritises the 'core retail area' for new retail development.									to its surroundings. This is considered a positive impact on landscape and visual. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
TC 3	To promote the 'active' use of above ground floor levels, and in particular to promote the concept of 'living over the shop' in centres. Where a 'living over the shop' use is proposed, a relaxation in density, car parking and open space standards will be considered, where the development meets very high quality of design and accommodation.									The active use of above ground floor and promotion of 'living over shop' through over site development would generally increase the provision of housing for the community. However, the relaxation of density, car parking and open space standards in such developments may impact on the quality of life for residents of such spaces. Therefore the impact on population and human health is uncertain. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
TC 4	To control the provision of non retail uses at ground floor level in the principal shopping streets of centres, in order to protect the retail viability of centres and to maintain the visual character of streets. This objective aims to prevent the proliferation of 'dead frontages' on key streets. In particular, active use of corner sites, particularly within larger centres, is considered pivotal in creating a sense of vibrancy.									The protection of retail viability and promotion of retail units and active frontages on key streets would enhance the streetscape and retail offering on shopping streets. This would positively impact on the population and human health by reducing the fear of crime and improving amenity and associated opportunities for a vibrant economy and community. This would also positively impact on landscape and visual and heritage by strengthening the urban/rural distinction and providing sensitive development that is appropriate to its surroundings, improving the visual character of the streetscape and making a positive contribution to place making in town centres. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
TC 5	To promote the revitalisation of vacant / derelict properties / shop units. Where no viable retail use can be sustained, alternative uses will be assessed on their own merits against the requirements of the									The revitalisation of vacant units and reduction in dereliction would enhance the streetscape and encourage pedestrian activity at these locations. This would positively impact on the population and human health by discouraging antisocial behaviour and reducing

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	<p>proper planning and sustainable development of the areas within which they are located.</p> <p>This objective will be used to ensure that all proposals for the reuse of existing retail floorspace can be evaluated against the proportion of overall vacancy and to reduce the possibility of dereliction.</p>									<p>the associated the fear of crime, by improving neighbourhood amenity and access to retail and minimising community severance.</p> <p>Additionally, this would positively impact on landscape and visual and heritage. Active (rather than derelict) units would improve the streetscape and visual amenity of the local environment by ensuring sensitive development that is appropriate to its surroundings and make a positive contribution to place making.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>
<b>Retail development objectives</b>										
RT 1	<p>To promote and facilitate the development of retail developments in a sustainable manner. Retail related development shall be located on suitably zoned land within settlement boundaries. There shall be a general presumption against the development of retail uses within the rural area, except as otherwise provided for by a particular objective of the County Development Plan.</p>									<p>The promotion and facilitation of sustainable retail development is likely to result in a positive impact on population and human health through the provision of local employment opportunities for the community and enhanced access to commercial premises.</p> <p>It is considered that any retail development would be appropriately developed in urban areas and seek to avoid significant environmental impacts, therefore all other impacts have been assessed as neutral.</p>
RT 2	<p>To ensure that all retail development is generally in accordance with the Wicklow County Retail Strategy for the period up to 2022 and beyond to 2031. All development proposals shall be assessed having regard to the Retail Strategy for the Greater Dublin Area 2008-2016.</p>									<p>Ensuring appropriate retail development to 2031 (in accordance with regional priorities) would positively impact on material assets by making the best use of existing infrastructure and improving the accessibility and availability of commercial premises in the plan area.</p> <p>Retail development will be developed in accordance with the regional objectives, therefore all other impacts have been assessed as neutral.</p>
RT 3	<p>To promote developments which reinforce the role and function of the ‘core retail area’ as the prime shopping area of town centres. The ‘core retail area’ shall be promoted as the area of first priority</p>									<p>The promotion and reinforcement of core retail areas in town centres would positively impact material assets by making the best</p>



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	for new retail development. In settlements where no 'core retail area' is defined, regard shall be paid to the designated 'town centre' area, the location of the traditional/historical centre and the location of other retail units. Where an application is made for a new development with street frontage either in the defined retail core of a larger settlement or on the 'main street' of a smaller town, retail or commercial use will normally be required at street level.									<p>use of existing infrastructure and improving the accessibility and availability of commercial premises in town centres.</p> <p>This would also positively impact on landscape and visual and heritage by strengthening the urban/rural distinction, providing sensitive development that is appropriate to its surroundings and improving the visual character of the shopping areas in town centres.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>
RT 4	To promote an appropriate mix and balance of different types and styles of retail within centres and to control the number of bookmakers, off-licences (including off-licences in convenience stores), take-aways, 'cash for gold' and 'Pound' type shops, and other uses that can adversely affect the character of a centre. The mix and balance of different type of retail (including retail services) is important to attract people to centres, and to ensure centres remain the main meeting point for the community. Too many of certain types of outlet can destroy the balance of a centre.									<p>The promotion of appropriately balanced retail development within centres would generally increase the type of commercial premises available for the local population. This would positively impact on material assets by increasing the attractiveness of and accessibility to a diverse range of retail units and commercial premises in the plan area. This would also positively impact on population and human health as it would improve the range of employment and recreational opportunities as well as the quality of retail centres in the plan area.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>
<b>Open Space and Play Objectives</b>										
CD 1	To facilitate opportunities for play and support the implementation of the Wicklow County Council Play Policy and its objectives, including the collection of development levies.									<p>The facilitation of opportunities for play would positively impact on population and human health as well as material assets by improving the provision of and access to recreational facilities and opportunities for exercise for the local community.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>



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CD 2	In all new residential development in excess of 50 units, where considered necessary by the Planning Authority, the developer shall provide, in the residential public open space area, a dedicated children’s play area, of a type and with such features to be determined following consultation with Community, Cultural & Social Development Office of Wicklow County Council. The location of any such proposal shall be situated within a centrally located area capable of being passively supervised by surrounding developments.									The inclusion of residential public open space and children’s play areas in large residential units would positively impact on biodiversity, population and human health and material assets by increasing the provision of and access to nature and recreational facilities for the local community. This would represent a holistic approach to residential development that provides amenity, open space, nature and recreational facilities for residents whilst increasing the provision of housing within the plan area.  It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
CD 3	All new neighbourhood parks or active open space zones shall include a ‘mixed use games area’ (MUGA) of an appropriate size and nature to be determined in, pre-consultation with the Community, Cultural & Social Development Office of Wicklow County Council.									The provision of mixed use games areas within neighbourhood parks and active open space zones would positively impact on population and human health. This would lead to improvements in amenity, the provision of and access to recreational facilities and opportunities for exercise for the local community. Additionally, pre-consultation with Wicklow County Council is likely to deliver coordinated land use planning and equitable access to such facilities.  It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
CD 4	The redevelopment for alternative uses of open space and recreational lands whether owned by private recreational clubs or publicly owned, will normally be resisted by the Planning Authority unless suitable and improved alternative recreational facilities can be provided in a convenient location									The maintenance of open space and recreational lands would safeguard the provision of and access to open space and recreational facilities. This can encourage social cohesion, improve amenity, opportunities for recreation, exercise and interactions with nature, therefore representing positive impacts on biodiversity, population and human health. Further, this would be considered a positive impact on material assets as the availability and accessibility of such spaces would be maintained and/or improved where appropriate.

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										It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
CD 5	In existing residential areas, the areas of open space permitted, designated or dedicated solely to the use of the residents will normally be zoned 'RE' as they form an intrinsic part of the overall residential development. Non-community uses on such lands will not normally be permitted.									<p>The allocation and protection of open space for community use is likely to result in positive impacts for biodiversity and population and human health. The safeguarding of community open space in proximity to residential areas would provide access to nature thereby improving amenity, quality of life in addition to preserving ecological corridors.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>
CD 6	<p>To facilitate the development of allotments of an appropriate scale on lands which meet the following criteria:</p> <ul style="list-style-type: none"> <li>• Lands situated within or immediately adjacent to the edge of towns;</li> <li>• lands that are easily accessible to the residents of a particular town;</li> <li>• where an adequate water supply can be provided;</li> <li>• where adequate road infrastructure and access exists/can be provided; and</li> <li>• where adequate parking facilities can be provided.</li> </ul>								<p>The development of accessible allotments would be positive for population and human health and material assets. Allotments would provide a healthy, low cost food source and gardening would represent amenity and recreational opportunities for users. Further, this provision of allotments would support effective use of underused greenfield and brownfield site(s) and incentivise local food production and composting of organic materials in waste streams.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>	
CD 7	To preserve lands at Kilmacanogue GAA identified as KM2 on Map no. 1 for recreational and sports use only.									The preservation of Kilmacanogue GAA lands would positively impact on population and human health. The safeguarding of the facilities would maintain amenity, social cohesion, the provision of and access to recreational facilities and opportunities for exercise for the local community.

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										It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
<b>Public Transport Objectives</b>										
PT1	To cooperate with NTA and other relevant transport planning bodies in the delivery of a high quality, integrated transport system in the Bray MD area.									Continued cooperation to deliver a high quality, integrated transport system in the plan area would positively impact on material assets. It is likely to facilitate a strategic approach to deliver an efficient transport network and increase sustainable transport infrastructure within the plan area. This would also give rise to positive impacts on air, noise and climate associated with reduced congestion along key routes and decreased emissions from private cars. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
PT2	To support the NTA in the crafting of a Local Transport Plan for the Bray area and to facilitate the implementation of measures contained therein.									Coordination with the NTA to deliver a Local Transport Plan for the area would encourage a strategic approach to improve transport efficiencies and promote sustainable transport infrastructure within the plan area. This is likely to increase accessibility, support modal shift to public transport and decrease reliance on private cars and indirectly reduce associated emissions. This is considered a positive impact on air noise and climate and material assets. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
PT3	To promote the development of transport interchanges and ‘nodes’ in the Bray MD where a number of transport types can interchange with ease. In particular: <ul style="list-style-type: none"> <li>to facilitate the development of park and ride facilities at appropriate locations along strategic transport corridors which will be identified through the carrying out of required coordinated, plan-led transport studies and</li> </ul>									The development of public transport interchanges and nodes is positive for air, noise and climate and material assets when considered in the context of the heavy reliance on private car use, relatively low public transport mode share and existing congestion issues on the M50 and N/M11 corridors. Further, the creation of bicycle parking facilities and footpaths would generally increase opportunities for active transport across the plan area. However the development of new transport infrastructure and ancillary facilities (such as bicycle or park and ride facilities) can

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	<p>consultation with the appropriate transport agencies;</p> <ul style="list-style-type: none"> <li>to support the improvement of bus links to the train station in Bray;</li> <li>to promote the linkage of the Luas extension or other mass transit to Bray town centre, Bray train station and Fassaroe; with respect to the major development area of Fassaroe, west of the N11, the development of this area shall make provision for mass transit such as Luas or BRT, including any necessary infrastructure such as stabling;</li> <li>to encourage the improvement of bicycle parking facilities at all transport interchanges;</li> <li>to improve existing and provide new footpath / footway linkages to existing / future transport interchange locations; and in particular, the provision of a pedestrian link/shortcut shall be investigated between the centre of Enniskerry and the proposed BRT/LUAS terminus in Fassaroe.</li> </ul>								<p>give rise to a range of environmental impacts if undertaken on greenfield sites. At this stage, it is considered that the nature of impacts arising from such development is uncertain given the scale of proposed development and potential for cumulative impacts.</p>
PT4	<p>To continue to work with Iarnrod Eireann and the NTA on the improvement of mainline train and DART services into Bray station.</p>								<p>Coordination with the Iarnród Eireann to improve the mainline railway and DART services to Bray would enhance public transport efficiencies and infrastructure within the plan area. This is likely to give rise to modal shift to public transport and decrease reliance on private cars and indirectly reduce associated emissions. This is considered a positive impact on air noise and climate and material assets.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>

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PT5	To facilitate, through the zoning of land, the tie-in of new facilities with the development of land and the application of supplementary development contributions, the extension of the LUAS or other mass transit to Bray town centre, Bray train station and Fassaroe.									<p>The tie in of public transport with new development in appropriately zoned land would facilitate a coordinated, holistic approach to planning and deliver an accessible, integrated transport network across the plan area, particularly for residents of new developments. Further, this would encourage modal shift towards public transport and coordinate land use and transportation going forward. This is considered to be positive for air, noise and climate and material assets.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>
PT6	To improve the capacity of the N11 / M11 in a manner capable of facilitating greater free flow of public transport and reducing congestion at junctions serving Bray.									<p>Reducing congestion and the promotion and facilitation of free flow public transport would provide a more efficient road network within the plan area. This is considered a positive impact for material assets.</p> <p>Such improvements to the N11/M11 corridor would also encourage a shift to public transport and reduce emissions associated with idle vehicles in traffic jams. This is considered a positive impact for air, noise and climate.</p> <p>It is considered all improvements would occur within the existing road corridor and that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>
PT7	<p>To promote the delivery of improved and new bus services both in and out of the District but also within the District by:</p> <ul style="list-style-type: none"> <li>facilitating the needs of existing or new bus providers with regard to bus stops and garaging facilities (although unnecessary duplication of bus stops on the same routes / roads will not be permitted);</li> </ul>									<p>The provision of new and improved bus services can reduce reliance on private car use, facilitate efficient public transport and improve accessibility for residents and users at new large-scale employment and residential developments. This is likely to improve the provision of and access to public transport which is considered positive for population and human health and material assets. Additionally, the provision of new and improved bus services may facilitate modal shift to public transport and reduce congestion on</p>

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	<ul style="list-style-type: none"> <li>requiring the developers of large-scale new employment and residential developments in Bray that are distant (more than 2km) from train / LUAS stations to fund / provide feeder bus services until public bus services have been extended to that location.</li> </ul>									<p>key routes. As such, the impact on air, noise and climate is considered to be positive.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>
<b>Cycling and Walking Objectives</b>										
CW 1	To improve existing or provide new foot and cycleways on existing public roads, as funding allows and to facilitate the development of a cycling and walking amenity routes throughout the District including foot and cycleways off road (e.g. through open spaces, along established rights-of-way etc), in order to achieve the most direct route to the principal destination (be that town centre, schools, community facilities or transport nodes), while ensuring that personal safety, particularly at night time, is of the utmost priority.									<p>The promotion and provision of off-road walking and cycling paths would facilitate modal shift to active transport, enhance amenity, improve access to recreation opportunities, reduce reliance on private car use and provide a more sustainable transport network. This is considered to have a positive impact on population and human health, air noise and climate and material assets.</p> <p>By establishing new rights of way and improving safety along off-road routes there are also indirect opportunities to enhance biodiversity, heritage and landscape and visual by encouraging regeneration of open spaces and underused sites. However, these impacts are considered to be uncertain at this stage in the absence of detailed knowledge about particular routes and associated improvements.</p> <p>It is considered that no significant land and soil or water impacts would arise, therefore those impacts are assessed as neutral.</p>
CW 2	To require all new regional and local roads to include foot and cycleways, except in cases where shared road space is provided.									<p>The provision of footpaths and cycleways would increase a modal shift to active transport which would enhance amenity, improve access to recreation opportunities, reduce reliance on private car use and provide a more sustainable transport network. This is considered to have a positive impact on population and human health, air noise and climate and material assets.</p>

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										It is considered that no other significant environmental impacts would arise from the footpaths and cycleways as part of road corridors, therefore all other impacts are assessed as neutral.
<b>Road Objectives</b>										
RO 1	<p>To support major road improvements to the national road M/N11 including:</p> <ul style="list-style-type: none"> <li>Capacity and operational improvements</li> <li>Removal or reconfiguring of existing direct accesses and left on / left off junctions</li> </ul> <p>Upgrades to the regional / local road network to provide improved access between existing M11/N11 mainline junctions and regional / road network</p>									<p>Improvements to the N/M11 road would facilitate a more efficient transport network, reduce congestion and improve accessibility within the plan area, which is positive for population and health, air noise and climate and material assets.</p> <p>It is considered that all improvement works would be undertaken within the existing road corridor and that no other significant environmental impacts would arise. Therefore all other impacts are assessed as neutral.</p>
R02	To support major road improvements by reserving the corridors, as and when these are identified, of any such proposed routes free of development, which would interfere with the provision of such proposals. In particular, to reserve corridors along all potential route improvements / new routes identified in the 2017 Transport Infrastructure Ireland M11/N11 Corridor Study.									<p>Major road improvements would deliver a more efficient transport network and improve accessibility within the plan area, which is positive for population and health and material assets.</p> <p>The provision of new roads may also increase reliance on vehicular modes of transport which is likely to exacerbate private car use, increase the number of vehicles on the road and associated emissions. This is considered to be a negative impact on air, noise and climate. Further, the preservation of land and construction of new transport routes in greenfield can give rise to a range of environmental impacts. Appropriate mitigation measures are outlined in Table 21.</p>
RO 3	To significantly improve existing or provide alternative road links between Bray / the N11 and Enniskerry									Improvements to existing roads and the provision of new alternative road links between Bray/the N11 and Enniskerry would facilitate a more efficient transport network and improve accessibility within the plan area, which is positive for population and health and material assets.

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										The provision of new roads may also increase reliance on vehicular modes of transport which is likely to exacerbate private car use, increase the number of vehicles on the road and associated emissions. This is considered to be a negative impact on air, noise and climate. Further, the preservation of land and construction of new transport routes in greenfield can give rise to a range of environmental impacts. Appropriate mitigation measures are outlined in Table 21.
RO 4	<p>With respect to the major development area of Fassaroe, west of the N11 (Action Area 1):</p> <p>(a) The development of this area shall include the provision of an access road from the N11 to Ballyman Road; the scale of such a route shall reflect its primary function as a service road for a new neighbourhood, rather than that of a ‘by-pass’; the design and location of this route shall not affect the functionality of the major open space as a single park and an innovative design solution where park crossing is necessary will be required; access to the lands zoned for new residential in SLO X at Monastery shall be from Ballyman Road and any access road shall be designed to form an element of the future Fassaroe – Monastery link road.</p> <p>(b) Provision shall be made (unless necessity for same has been definitely ruled out by the transport agencies) for a north – south link route from the new distributor road to cross Ballyman Glen and continue into County Dublin and link up with old Conna Avenue. The nature and function of this link i.e. the type of traffic it will carry (vehicles / pedestrian / cyclist / light rail) shall be determined at application stage, following consultation with the</p>								<p>The provision of new distributor and access roads in Fassaroe would facilitate a more efficient transport network and improve accessibility within the plan area, which is positive for population and health and material assets.</p> <p>The provision of new roads may also increase reliance on vehicular modes of transport which is likely to exacerbate private car use, increase the number of vehicles on the road and associated emissions. This is considered to be a negative impact on air, noise and climate. Further, the preservation of land and construction of new transport routes in greenfield can give rise to a range of environmental impacts. Appropriate mitigation measures are outlined in Table 21.</p>	



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	transport agencies and the neighbouring local authority.									
RO 5	With respect to the major development area at the former Bray Golf Course, excellent linkages shall be provided from the site to surrounding areas; multiple access points for both vehicles and cyclists / pedestrians shall be developed and in particular, the development shall include linkages through the site between the Dublin Road and Bray seafront / the DART station and public walking route along the river;									The provision of transport infrastructure linking with the major development at Bray Golf Course is positive for material assets and population and human health. By providing multiple access points for vehicles, cyclists and pedestrians accessibility would improve and sustainable transport infrastructure would be incorporated encouraging active transport. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
RO 6	The layout and design of any development in SLO-2 (Rehills) shall facilitate the delivery of a link road from Dargle Road to Herbert Road, unless further study / analysis by WCC and the TII determines that this road is not necessary or feasible;									The provision of new link road from Dargle Road to Herbert Road would facilitate a more efficient transport network and improve accessibility within the plan area, which is positive for population and health and material assets. The provision of new roads may also increase reliance on vehicular modes of transport which is likely to exacerbate private car use, increase the number of vehicles on the road and associated emissions. This is considered to be a negative impact on air, noise and climate. Further, the preservation of land and construction of new transport routes in greenfield can give rise to a range of environmental impacts. Appropriate mitigation measures are outlined in Table 21.
RO 7	To improve (as funding allows) the following roads in Bray MD, and ensure developments along these routes are so designed as to allow for / not impede the delivery of required improvements: <ul style="list-style-type: none"> <li>• Castle Street – Dublin Road</li> <li>• Vevay Road</li> <li>• Novara Avenue</li> </ul>									Improvements to existing roads within the plan area would facilitate a more efficient transport network, reduce congestion and improve accessibility within the plan area, which is positive for population and health, air noise and climate and material assets. It is considered that all improvement works would be undertaken within the existing road corridor and that no other significant

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	<ul style="list-style-type: none"> <li>Seapoint Road</li> <li>Killarney Lane</li> <li>Kilbride Lane</li> <li>Ballyman Road from County Brook to the R117</li> </ul>									environmental impacts would arise. Therefore all other impacts are assessed as neutral.
RO 8	To promote the development of a new route east of the Kilmacanogue Interchange that would serve (from the east) zoned lands and properties that currently are accessed only via the N11. No further development of any lands to the NE of Kilmacanogue interchange will be permitted unless access from the east (rear) is provided / available.									<p>The development of a new route east of Kilmacanogue would deliver a more efficient transport network and improve accessibility within the plan area, which is positive for population and health and material assets.</p> <p>The provision of new roads may also increase reliance on vehicular modes of transport which is likely to exacerbate private car use, increase the number of vehicles on the road and associated emissions. This is considered to be a negative impact on air, noise and climate. Further, the construction of new transport routes in greenfield sites can give rise to a range of environmental impacts. Appropriate mitigation measures are outlined in Table 21.</p>
RO 9	<p>To promote and support the development of enhanced or new greenways at the following locations and require development in the vicinity of same to enhance existing routes and / or provide new links:</p> <ul style="list-style-type: none"> <li>Bray - Dargle River south bank</li> <li>Bray – North Beach – Ravenswell – People’s Park</li> <li>Bray Head – Esplanade – Bray Harbour – North Beach</li> <li>Bray - Swan River Kilruddery to Dargle River</li> <li>Fassaroe - Ballyman Glen to Cookstown River</li> <li>Kilmacanogue River</li> </ul>									<p>The development of greenways is positive for population and human health, air, noise and climate, landscape and visual and material assets. The provision of greenways would optimise land use, encourage active transport and improve opportunities for recreation and amenity in those key locations within the plan area.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
	<ul style="list-style-type: none"> <li>Enniskerry – Glencullen River - Cookstown River</li> <li>San Souci Wood / Vevay Crescent - San Souci Wood – Sidmonton Gardens, with links to St. Cronan’s, St. Patricks and St. Thomas’s school sites and Novara Avenue / Sidmonton Road</li> </ul>									
<b>Flood Management Objectives</b>										
FL1	To implement the ‘Guidelines on the Planning System and Flood Risk Management’ (DoEHLG/OPW, 2009).									<p>The implementation of effective flood risk management planning in the plan area is considered to be positive for water and population and human health as it would enhance resilience to flood risk. Effective flood risk management planning would also mitigate adverse impacts on land and soils, aquatic habitats and material assets in vulnerable zones within flood plains during extreme flood events.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>
FL2	The zoning of land that has been identified as being at a high or moderate flood risk (flood zone A or B) shall be in accordance with the requirements of the Flood Risk Guidelines and in particular the ‘justification test for development plans’ (as set out in Section 4.23 and Box 4.1 of the guidelines).									<p>Effective zoning and transposition of the Flood Risk Guidelines for new development is considered to be positive for water as it would ensure that flood risk is appropriately assessed and considered as part of proposals for new development in vulnerable areas.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>
FL3	Applications for new developments or significant alterations/extension to existing developments in a flood risk area shall comply with the following: <ul style="list-style-type: none"> <li>Follow the ‘sequential approach’ as set out in the Flood Risk Guidelines.</li> <li>Flood risk assessments will be required with all planning applications proposed in areas</li> </ul>									<p>Effective consideration of flood risk and decision making on the appropriateness of development in vulnerable zones for development is considered to be positive for water. It would ensure that flood risk is appropriately assessed and considered for new development (or significant alterations/extensions) in advance of planning decisions from Wicklow County Council.</p>

Ref	Text	SEA Environmental Objectives								Comments
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	<p>identified as having a flood risk, to ensure that the development itself is not at risk of flooding and the development does not increase the flood risk in the relevant catchment (both up and down stream of the application site).</p> <ul style="list-style-type: none"> <li>Where a development is proposed in an area identified as being at low or no risk of flooding, where the planning authority is of the opinion that flood risk may arise or new information has come to light that may alter the flood designation of the land, an appropriate flood risk assessment may be required to be submitted by an applicant for planning permission.</li> <li>Restrict the types of development permitted in Flood Zone A and Flood Zone B to that are ‘appropriate’ to each flood zone, as set out in Table 3.2 of the guidelines for Flood Risk Management (DoEHLG/OPW, 2009).</li> <li>Developments that are an ‘inappropriate’ use for a flood zone area, as set out in Table 3.2 of the guidelines, will not be permitted, except where a proposal complies with the ‘Justification Test for Development Management’, as set out in Box 5.1 of the Guidelines.</li> <li>Flood Risk Assessments shall be in accordance with the requirements set out in the Guidelines.</li> <li>Generally a Flood Impact Assessment will be required with all significant developments and</li> </ul>									It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.

Ref	Text	SEA Environmental Objectives								Comments
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	a certificate (from a competent person stating that the development will not contribute to flooding within the relevant catchment) will be required with all small developments of areas of 1 hectare or less.									
FL4	For developments adjacent to all watercourses of a significant conveyance capacity or where it is necessary to maintain the ecological or environmental quality of the watercourse, any structures (including hard landscaping) must be set back from the edge of the watercourse to allow access for channel clearing/ maintenance / vegetation. A minimum setback of up to 10m (or other width, as determined by the Council) will be required either side depending on the width of the watercourse.									Setting back infrastructure from watercourses would deliver positive impacts for biodiversity and water as it would facilitate maintenance of rivers. Setting back hard landscaping and regular maintenance activities are likely to preserve hydrological characteristics of watercourses and facilitate a diversity of habitats and species within the river and on adjoining land banks. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
<b>Architectural Heritage</b>										
AH 1	To ensure the protection of all structures (or parts of structures) contained in the Record of Protected Structures.									Effective protection of heritage structures contained in the Record of Protected Structures would ensure that architectural and archaeological heritage values are appropriately considered and preserved. This is considered to be a positive impact for heritage. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
AH 2	To positively consider proposals to improve, alter, extend or change the use of protected structures so as to render them viable for modern use, subject to consultation with suitably qualified Conservation Architects and / or other relevant experts, suitable design, materials and construction methods. All development works on or at the sites of protected									The regeneration and improvement of protected structures by relevant experts is considered to have a positive impact for heritage. Improvements that would not compromise the quality of heritage assets would improve amenity value and quality of assets, therefore contributing to positive heritage outcomes. It is also noted that improvements to protected structures and the reintroduction of traditional features may also positively impact on

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
	structures, including any site works necessary, shall be carried out using best heritage practice for the protection and preservation of those aspects or features of the structures / site that render it worthy of protection. To support the re-introduction of traditional features on protected structures where there is evidence that such features (e.g. window styles, finishes etc) previously existed, while not compromising the need for energy conservation.									landscape and visual by improving streetscapes and protected landscape and visual values. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
AH 3	To strongly resist the demolition of protected structures, unless it can be demonstrated that exceptional circumstances exist. In cases where demolition or partial demolition is permitted or where permission is given for the removal of feature(s), the proper recording of the building / feature will be required before works are undertaken and where possible the reuse of such features should be considered in any replacement buildings.									Strong resistance to the demolition of protected structures is considered to have a positive impact for heritage. This would ensure that developers are appropriately considering and preserving of heritage values as part of developments where practicable. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
AH 4	Where an item or a structure (or any feature of a structure) is considered to be of heritage merit (where not identified in the RPS), the Planning Authority reserves the right to refuse permission to remove or alter that structure / item, in the interests of the protection of the County's architectural heritage.									The protection of items or structures with heritage merit would ensure that heritage values are appropriately considered and preserved within the plan area. This is considered to be a positive impact for heritage. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
AH 5	To maintain and protect the nationally significant demesne settings of the Powerscourt Estate and Kilruddery House, and to require all development proposals within or directly adjoining these									Effective maintenance and protection of nationally significant demesne settings is considered to be a positive impact for heritage and landscape and visual. It would ensure that architectural and archaeological heritage values are appropriately preserved and maintained on site. Further, it would maintain the urban/landscape

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
	demesnes to fully evaluate and address any impacts of the setting and character of the demesne.									distinction and ensure appropriate consideration for and assessment of any likely significant impacts of proposals for development in the vicinity of those sites. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
<b>Biodiversity Objectives</b>										
B1	To ensure that the impact of new developments on biodiversity is minimised and to require measures for the protection and enhancement of biodiversity in all proposals for large developments.									The implementation of effective protection and enhancement of biodiversity as part of large development proposals is positive for biodiversity. This would protect flora and fauna, enhance the diversity of habitats and species and opportunities for residents to access nature. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
B2	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 projects).									The consideration for and protection of Natura 2000 sites for all forms of development in the plan area is positive for biodiversity. Effective conservation would preserve valuable habitats and species identified for their importance at the European level. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
B3	To maintain the conservation value of all proposed and future Natural Heritage Areas (NHAs) and to protect other designated ecological sites in Wicklow.									The consideration for and protection for pNHAs is considered positive for biodiversity. Effective conservation of all proposed and future NHAs would preserve habitats and species identified (but not yet legally designated) for their importance at the national level. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
B4	To support the protection and enhancement of biodiversity and ecological connectivity within the plan area in accordance with Article 10 of the Habitats Directive, including linear landscape features like watercourses(rivers, streams, canals, ponds, drainage channels, etc), woodlands, trees, hedgerows, road and railway margins, semi-natural grasslands, natural springs, wetlands, stone walls, geological and geo-morphological systems, features which act as stepping stones, such as marshes and woodlands, 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 that taken as a whole help to improve the coherence of the Natura 2000 network.									The implementation of effective protection and enhancement of ecological corridors and/or stepping stones in the aquatic and terrestrial environment is considered to be positive for biodiversity. The protection and enhancement of such features would facilitate ecological coherence and the development of an integrated ecological network within the plan area and thus enhance the diversity of habitats and species.  It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
<b>Green Infrastructure Objectives</b>										
GI1	New development and redevelopment proposals, where considered appropriate, are required to contribute towards the protection, management and enhancement of the existing green infrastructure assets (as identified in the GI audit) of the local area in terms of the design, layout and landscaping of development proposals.									The protection, management and enhancement of existing green infrastructure assets is considered to have a positive impact on biodiversity, population and human health, water, air noise and climate, landscape and visual and material assets. Green infrastructure has been recognised for its positive contribution to economic, environmental, social, health and wellbeing and it provides a range of ecosystem services including sustainable drainage, climate change resilience and amenity value.  It is considered that no significant impacts on land and soil and heritage would arise, therefore those impacts are assessed as neutral.
GI2	To facilitate the development and enhancement of suitable access to and connectivity between areas of interest for residents, wildlife and biodiversity, with									The development and enhancement of linkages between green infrastructure and biodiversity assets would facilitate the development of an integrated ecological network and enhance



Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
	focus on promoting river corridors, Natura 2000 sites, nature reserves and other distinctive landscapes as focal features for linkages between natural, semi natural and formalised green spaces where feasible and ensuring that there is no adverse impact (directly, indirectly or cumulatively) on the conservation objectives of Natura 2000 sites.									ecosystem services provided in the plan area. This is considered as a positive impact on biodiversity, population and human health, water, air noise and climate, landscape and visual and material assets.  It is considered that no significant impacts on land and soil and heritage would arise, therefore those impacts are assessed as neutral.
GI3	To minimise alterations or interference with river / stream beds, banks and channels, except for reasons of overriding public health and safety (e.g. to reduce risk of flooding); a buffer of generally 10m along watercourses should be provided (or other width, as determined by the Planning Authority) free from inappropriate development, with undeveloped riparian vegetation strips, wetlands and floodplains generally being retained in as natural a state as possible. In all cases where works are being carried out, to have regard to Regional Fisheries Board “Requirements for the protection of fisheries habitat during the construction and development works at river sites”. New river / watercourse road crossings and / or piping shall be strongly resisted except for reasons of overriding public health and safety.									Minimising alterations and interference with water bodies and the retention of natural features would deliver positive impacts for biodiversity and water as it would facilitate aquatic biodiversity and natural river conveyance. Setting back development is also likely to preserve hydrological characteristics of watercourses and facilitate a diversity of habitats and species within the river and on adjoining land banks.  It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
GI4	To promote the preservation of trees, groups of trees or woodlands in particular native tree species, and those trees associated with demesne planting, in the interest of amenity or the environmental, as set out in Schedule X of this plan.									The preservation of trees would ensure that biodiversity and heritage values (where there is a TPO in place) are appropriately considered and conserved. This is considered to be positive for biodiversity, heritage and landscape and visual as amenity and flora would be sustained.

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
										It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
GI5	<p>To promote the development of a series of major open spaces and recreational areas linked by green corridors where feasible, in the Bray MD area as follows:</p> <ul style="list-style-type: none"> <li>• along the south bank of River Dargle from Bray Harbour, as far as Rehills (SLO-2);</li> <li>• on the former Bray golf course lands, linked to harbour and north beach to the east and the People’s Park to the west; ;</li> <li>• From Bray Head, down to the Esplanade, and up through Bray Harbour, to the north beach;</li> <li>• On the Kilruddery estate as part of SLO-1 linking along the Swan River, through the OS to the west of Hollybrook Park; from the Bray SCR, through lands zoned for employment use onto the Boghall Road; continuing through new and proposed residential areas onto Herbert Road and onto the River Dargle; in particular, (a) any new development at or in the vicinity of Oldcourt House shall make provision for the continuation of the green corridor between Giltspur Brook and Rycroft; (b) any infill development along Herbert road adjacent to the green corridor shall make provision for green link between Herbert Road and the Dargle corridor. ;</li> </ul>								<p>The promotion and development of major open spaces and linked green corridors across the plan area represents a positive impact on the environment generally. Specifically, positive impacts on biodiversity, population and human health, water, air noise and climate and landscape and visual are envisaged. The delivery of an integrated, accessible network of open space across the plan area would deliver positive environmental, social, health and wellbeing outcomes and provide ecological coherence across the plan area as well as amenity value for the community.</p> <p>It is considered that no significant impacts on land and soil, heritage and material assets would arise, therefore those impacts are assessed as neutral.</p>	

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
	<ul style="list-style-type: none"> <li>In the new development zone of Fassaroe west of the N11, linking river valleys to the north and south of the action area ;</li> <li>A linked area from Enniskerry GAA, through to designated open space in Action Area 2, connecting to Knocksink Wood, through the Bogmeadow recreational area, and onto the Cookstown River to the N11.</li> </ul>									
<b>Recreational Use of Natural Resource Objectives</b>										
RN 1	To facilitate the use of natural areas for active outdoor pursuits, subject to the highest standards of habitat protection and management and all other normal planning controls.									The use of natural areas for active outdoor pursuits can encourage social cohesion as well as improve amenity, opportunities for recreation, exercise and interactions with nature, representing positive impacts on biodiversity, population and human health. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
RN 2	The facilitate access to amenity areas in the District for the benefit of all, on the basis of cooperation with landowners, recreational users and other relevant stakeholder groups to promote "agreed access" on public and privately owned land in the District on the basis of sustainability, consultation and consensus.									The provision of equitable access to amenity areas in the district can facilitate social cohesion as well as improve amenity, opportunities for recreation, exercise and interactions with nature, representing positive impacts on biodiversity, population and human health. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
RN 3	To preserve the open character of commonage land and similar hill land and secure access over paths and tracks through consensus with local landowners, particularly in mountain areas.									The preservation of commonage land and provision of equitable access to paths and tracks can improve amenity, opportunities for recreation, exercise and interactions with nature, representing positive impacts on biodiversity, population and human health. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.

## 7.4 Assessment matrix for the Draft LAP objectives of relevance to specific sites within the plan area

Table 20: Site specific zoning assessment

Ref	Text	SEA Environmental Objectives								Comments	
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets		
<b>Bray specific housing objectives</b>											
R5	Designated housing lands at Fassaroe (Action Area 1) shall only be developed as part of comprehensive (not piecemeal) integrated schemes, in accordance with the objectives for this Action Area set out in this plan.										The County Development Plan sets out provisions to encourage phasing of integrated residential development, therefore mostly neutral environmental impacts are envisaged.  The development of integrated scheme within the town centre is positive for material assets as it would ensure that appropriate infrastructure and services in provided as part of the residential development, therefore ensuring that there is no strain on material assets.
<b>Enniskerry specific housing objectives</b>											
R6	The maximum size of any single ‘housing estate’ shall be 60 units and developments that include more than 60 units should be broken into a number of smaller ‘estates’, which shall be differentiated from each other by the use of materially different design themes.										The County Development Plan sets out provisions for this objective, therefore this represents the baseline and as such neutral environmental impacts are envisaged.
R7	A full range of unit sizes, including smaller 1 and 2-bedroomed units shall be provided in all new housing areas. No more than 50% of the units in any development shall exceed 3 bedrooms or 125sqm in size.										The County Development Plan sets out provisions for this objective, therefore this represents the baseline and as such neutral environmental impacts are envisaged.

Ref	Text	SEA Environmental Objectives								Comments	
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets		
<b>Kilmacanogue specific housing objectives</b>											
R8	A full range of unit sizes, including smaller 1 and 2-bedroomed units shall be provided in all new housing areas. No more than 50% of the units in any development shall exceed 3 bedrooms or 125sqm in size.										A mixture of housing types in residential developments would increase the range and types of housing availability for local residents. However, the limitation of larger homes may restrict opportunities for large families to access housing in Kilmacanogue, therefore the impacts on population and health are considered to be uncertain.  It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
R9	Kilmacanogue shall be prioritized for moderate housing growth and shall absorb demand for new housing from inside and outside the County subject to the following controls: <u>Multi-house development</u> <ul style="list-style-type: none"> <li>75% no restriction</li> <li>25% Applicant / purchaser of any new home must be either a resident for at least 3 years duration in County Wicklow or in permanent employment for at least 3 years duration in County Wicklow prior to making of application / purchase of new house.</li> </ul> <u>Single house development</u> Applicant / purchaser of any new home must be either a resident for at least 3 years duration in County Wicklow or in permanent employment for at least 3 years duration in County Wicklow prior to making of application / purchase of new house.										The County Development Plan sets out provisions for this objective, therefore this represents the baseline and as such neutral environmental impacts are envisaged.

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
R10	<p>In the Primary Development Zone:</p> <ul style="list-style-type: none"> <li>To encourage residential development that contributes to the vitality of the primary area and provides for passive / night-time supervision of the primary area, although loss of active commercial or retail floorspace to residential use will be discouraged;</li> <li>To promote the use of upper floors for ‘Living over the Shop’;</li> <li>To allow residential development at a suitable density, and not to provide residential density limits, but to assess proposals on the basis of qualitative standards such as layout, design, amenity and impacts on adjacent properties, transportation infrastructure and environmental quality.</li> </ul>									<p>The creation of suitable density housing developments that contribute to the local area and make the best use of vacant ‘over shop’ space is likely to positively impact on population and human health. Such housing in primary development zones would increase of local housing availability for the community.</p> <p>It is assumed that this objective does not include any greenfield development, therefore all other impacts are assessed as neutral.</p>
R11	<p>In the Secondary Development Zone, to promote densities in the order of 15 dwelling units per hectare. A higher or lower density may be considered appropriate, having regard to the context of the site and the prevailing density in the vicinity of the site.</p>									<p>The creation of lower density housing developments that contribute in secondary development zones is likely to positively impact on population and human health as it would increase of local housing availability for the community.</p> <p>It is assumed that this objective does not include any greenfield development, therefore all other impacts are assessed as neutral.</p>
R12	<p>In the Tertiary Development Zone,</p> <ul style="list-style-type: none"> <li>To restrict the residential development to low density (max 5/ha) single house developments and multi house developments not exceeding 4 units (other than social housing developments).</li> <li>Multi-house development shall only be considered where they share a single road</li> </ul>									<p>The provision of low density housing and social housing that is supported by appropriate infrastructure in tertiary development zones is likely to positively impact on population and human health as it would increase of local housing availability for the community.</p> <p>It is assumed that this objective does not include any greenfield development, therefore all other impacts are assessed as neutral.</p>

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
	<p>entrance, are sufficiently clustered together and are sufficiently set back from the public road.</p> <ul style="list-style-type: none"> <li>to allow for social housing provided it is located in accordance with firm planning principles especially with respect to proximity to services and connectivity to the settlement core.</li> </ul>									
R13	<p>A full range of unit sizes, including smaller 2 and 3 bedrooled units shall be provided in all new housing developments (i.e. developments exceeding 4 units). Generally, no more than 50% of the units in any new development shall exceed 3 bedrooms or 120sqm in size.</p>									<p>A mixture of housing types in residential developments would increase the range and types of housing availability for local residents. However, the limitation of larger homes may restrict opportunities for large families to access housing in Kilmacanogue, therefore the impacts on population and health are considered to be uncertain.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>
R14	<p>To allow for development of up to 25 new dwellings on lands identified as KM1 on Map No.1, contingent on the development on these lands of public active open space measuring not less than 1 ha.</p>									<p>The County Development Plan sets out provisions for this objective, therefore this represents the baseline and as such neutral environmental impacts are envisaged.</p>
<b>Kilmurray specific housing objectives</b>										
R15	<p>The indicative growth target for Kilmurray is in the order of 4 units given the overall population target for the rural clusters. Given the controls that apply for these clusters, some flexibility in this target may be applied where the number of bona fide applicants exceeds the target. Where permission is sought for development that would result in the development of more than 5 units in Kilmurray during the lifetime of the plan, permission may be</p>									<p>The creation of housing developments in Kilmurray is likely to positively impact on population and human health through the increase of local housing availability for the community.</p> <p>It is assumed that this objective does not include any greenfield development, therefore all other impacts are assessed as neutral.</p>

Ref	Text	SEA Environmental Objectives								Comments
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	considered subject to it being determine that (a) the settlement has the form and infrastructural capacity to accommodate the additional development proposed and (b) the total housing growth target for the rural clusters as a group will not be exceeded.									
<b>Enniskerry specific economic objectives</b>										
EE1	To maintain the existing level of land in employment use in the form of service based employment and tourist based activities in Enniskerry.									The maintenance of existing levels represents the baseline scenario and thus no significant environmental impacts would arise. As such, all environmental impacts are assessed as neutral.
EE2	To provide c. 1ha of employment lands in the form of high quality office / surgery / studio type employment and local service and incubator businesses (in Action Area 2).									This is the baseline as this objectives is described in the Wicklow County Development Plan, thus no significant impacts are likely to arise and as such all environmental impacts are assessed as neutral.
<b>Bray Town Centre Specific Objectives</b>										
BT 1	To promote Bray town centre as the primary retailing and commercial sector location in the town. Retailing will be promoted as the core function of the town centre. Bray Town Centre consists of the area of land which is zoned ‘TC: Town Centre Uses’, which extends in a north/south direction from the Dublin Road to Market Square, and in an easterly direction, encompassing Quinsborough Road, Florence Road, Bray Dart Station and part of Novara Avenue. It is the area of the town that provides a broad range of facilities and services and which fulfils a function as a focus for both the population of Bray and public transport.									<p>The enhancement of Bray town centre as an attractive place for retail and commercial uses would improve economic activity, supplement leisure, entertainment and cultural uses and provide local opportunities for employment. This would positively impact on the population and human health.</p> <p>Further, the focus of commercial development in the town centre is likely to strengthen the urban/rural distinction and ensure that development is sensitive to its surroundings. This is considered a positive impact on landscape and visual.</p> <p>This would positively impact on material assets by making the best use of existing infrastructure and improving the accessibility and availability of commercial premises in Bray town centre.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>



Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
BT 2	To promote and support the development of significant new retail, retail services, commercial and cultural / community floorspace in Bray town centre, at the following locations: - the 'Florentine Centre' (see Objectives for 'Opportunity Sites' to follow) - Former Bray golf club lands (see Objectives for SLO 3)									The promotion of commercial and cultural floorspace in Bray town centre is likely to strengthen the urban/rural distinction and ensure that development is sensitive to its surroundings. This is considered a positive impact on landscape and visual. This would also positively impact on material assets by making the best use of existing infrastructure and improving the accessibility and availability of commercial and cultural floorspace in the identified opportunity sites. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
BT 3	Generally, a maximum height of 3-storeys above ground level will be considered appropriate in Bray town centre, irrespective of adjoining property heights. However, the Council may permit heights above this, where the specific context of the site and the design of the building allow it (for example where additional storeys are set back from street frontage).									The establishment of a height limitations for development in Bray town centre would ensure that development is sensitive to its surrounding, it would help protect the landscape and visual values and heritage assets in the centre. This is considered a positive impact on landscape and visual and heritage. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
<b>Bray Neighbourhood Centre Specific Objectives</b>										
BT 4	Within designated neighbourhood centres at Boghall Road / Ballywaltrim, Vevay Road, Dargle Road, Dublin Road – Little Bray, Albert Road and walk, Fassaroe and Bray Southern Cross Road, it is the objective of the Planning Authority to protect, provide for, and improve the mix of neighbourhood centre services and facilities, which provide for the day-to-day needs of the local community, to a degree that is akin to their role and function as outlined in the Retail Strategy and the objectives of this plan.									The provision of neighbourhood centres that deliver a range of services and facilities to the local community can contribute to social cohesion, quality of life and deliver critical services to vulnerable groups including the elderly, children and minority groups. This is considered to be a positive impact for population and human health. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
<b>Bray Opportunity Sites (OP1: Florentine Centre, OP2: Former Heiton Buckley's, OP3: Former Everest Centre, OP4: Former Chemical Plant and the Maltings)</b>										
OP 1	<ul style="list-style-type: none"> <li>To provide for a landmark mixed use development which may include commercial, retail, retail services, residential, community and cultural uses; the priority consideration in determining the optimal mix of uses shall be to reinvigorate and bring activity (including evening time) to this area</li> <li>A high density development, that makes the best use of this serviced urban land will be expected, in a 3-4 storey development;</li> <li>Any development on the lands shall include street frontage directly onto Main Street, following and restoring the established building line;</li> <li>Any development shall include a significant below ground / under podium car park</li> </ul>									<p>The provision of additional residential and commercial premises as part of this mixed use development is likely to increase the availability of housing and accessibility to commercial units and employment opportunities. This is considered to be a positive impact on population and human health.</p> <p>The provision of high density mixed use development and significant car parking in the town centre is likely to strain existing infrastructure and exacerbate congestion in the town centre. This is considered a negative impact for material assets.</p> <p>Further, the provision of high density development of 3-4 storeys in close proximity to Main Street and the town centre is likely to negatively impact on landscape and visual.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>
OP 2	<ul style="list-style-type: none"> <li>To provide for a mixed use development including commercial, retail, residential, community and cultural uses;</li> <li>A high density development, that makes the best use of this serviced urban land will be expected, with a plot ratio of not less than 2, in a 3-4 storey development;</li> <li>The design (including height) of any development shall pay particular regard to the height of immediately adjoining (mostly 2-storey) residences and in general heights shall not exceed 3-storeys along Dwyer Park;</li> </ul>									<p>The provision of additional residential and commercial premises as part of this mixed use development is likely to increase the availability of housing and accessibility to commercial units and employment opportunities. This is considered to be a positive impact on population and human health.</p> <p>The provision of high density mixed use development and significant car parking is likely to strain existing infrastructure and exacerbate congestion on the Dublin Road. This is considered a negative impact for material assets.</p> <p>The provision of 3-4 storey development in close proximity to lower rise buildings could negatively impact on landscape and visual. However, due consideration of adjoining properties and improvements to active street frontage on Castle Street may</p>

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	<ul style="list-style-type: none"> <li>Any development on the lands shall include street frontage directly onto Castle Street, ideally with limited set back across the frontage of the site; (other than that required for adequate pedestrian / cyclist usage); any set back in excess of 5m from the road kerb will require to be justified based on specific design criteria and in any event buildings shall not be set back any further than 15m from the kerb.</li> <li>Those parts of any proposed development that adjoin existing streets shall provide for an active street frontage; in particular, active commercial use shall be expected at ground floor, opening onto the street.</li> </ul>									<p>improve the streetscape. As such, the impacts on landscape and visual are considered to be uncertain.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>
OP 3	<ul style="list-style-type: none"> <li>To provide for a mixed use development including commercial, retail, residential, community and cultural uses;</li> <li>A high density development, that makes the best use of this serviced urban land will be expected, with a plot ratio of not less than 2 in a 3-4 storey development;</li> <li>Any development on the lands shall include full street frontage across the majority of the site onto Castle Street, ideally with limited set back across the frontage of the site; (other than that required for adequate pedestrian / cyclist usage); any set back in excess of 5m from the road kerb will require to be justified based on specific design criteria and in any event buildings shall not be set back any further than 15m from the kerb.</li> </ul>									<p>The provision of additional residential and commercial premises as part of this mixed use development is likely to increase the availability of housing and accessibility to commercial units and employment opportunities. This is considered to be a positive impact on population and human health.</p> <p>The provision of high density mixed use development and significant car parking is likely to strain existing infrastructure and exacerbate congestion on the Dublin Road. This is considered a negative impact for material assets.</p> <p>The provision of 3-4 storey development could negatively impact on landscape and visual. However, improvements to active street frontage on Castle Street may improve the streetscape. As such, the impacts on landscape and visual are considered to be uncertain.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>

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	<ul style="list-style-type: none"> <li>Those parts of any proposed development that adjoin Castle Street shall provide for an active street frontage; in particular, active commercial use shall be expected at ground floor, opening onto the street.</li> </ul>									
OP 4	<ul style="list-style-type: none"> <li>To support the redevelopment of the lands for a mix of uses, including commercial, residential, community and cultural uses; retail use will only be considered acceptable where it would add and not detract from the vitality and viability of the core retail area along Main Street; in the event that redevelopment comprising residential use only is brought forward, there would be no requirement to accompany same with commercial / retail development;</li> <li>A high density development that makes the best use of this serviced urban land will be expected.</li> </ul>									<p>The provision of additional residential and community and cultural premises as part of this mixed use development is likely to increase the provision of housing and accessibility to social infrastructure within the plan area. This is considered to be a positive impact on population and human health.</p> <p>It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>
<b>Enniskerry Specific Town Centre and Retail Objectives</b>										
EN 1	<p>New town centre developments shall incorporate new “streets” where possible, and developers of town centre sites shall co-operate with each other in order to provide a new network of streets and spaces and to minimise duplication of car parks and vehicular access points on the square.</p>									<p>The development of a new streets in Enniskerry would improve accessibility and facilitate a more efficient transport road network, however it may also increase reliance on vehicular modes of transport. This is likely to increase private car use and increase the number of vehicles on the road in the town centre whilst improving the physical infrastructure itself. This is considered to be a negative impact on air, noise and climate.</p> <p>Further, the construction of new streets in Enniskerry town centre can also give rise to a range of environmental impacts. At this</p>

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										stage, it is considered that the nature of impacts arising from such development is uncertain.
EN 2	New developments (including the refurbishment of buildings) shall generally be two-storey in the town centre area and shall have regard to the protection of the residential and architectural amenities of structures in the immediate environs, but alternative and contemporary designs shall also be encouraged (including alternative materials, heights and building forms), to provide for visual diversity.									The establishment of a height limitations for development in Enniskerry would ensure that development is sensitive to its surrounding, it would help protect the landscape and visual values and heritage assets in the centre. This is considered a positive impact on landscape and visual and heritage. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.
<b>Kilmacanogue Specific Town Centre and Retail Objectives</b>										
KL 1	To support existing uses and facilitate the development of new uses that will improve the vitality, connectivity and vibrancy of the primary lands.									Enhancing the vitality and viability of Kilmacanogue town centre would positively impact on material assets by making the best use of existing infrastructure and facilitating the development of complementary uses in the town centre. The development of Kilmacanogue town centre is also likely to strengthen the urban/rural distinction and contribute to regeneration that ensures development is undertaken sequentially in a manner that is sensitive to its surroundings. This is considered a positive impact on landscape and visual. It is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.

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<b>Change in land zoning within the plan area</b>											
	Conversion of employment zoned land in Fassaroe to high density residential	Blue	Yellow	Blue	Blue	Blue	Blue	Blue	Yellow	Yellow	Refer to Section 5.3 for further detail
	Establishment and provision of different types of open space through land zoning	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	The classification of open space types would not have a significant impact, therefore all impacts have been assessed as neutral.
	Conversion of civic, commercial and community use zones land in Bray town centre to high density residential	Blue	Green	Blue	Blue	Red	Blue	Red	Red	Red	Refer to Section 5.3 for further detail
	Densification of development on existing residential zoned land (i.e. conversion to high density residential lands) within Fassaroe and the town centre areas	Blue	Green	Blue	Blue	Red	Blue	Red	Red	Red	Refer to Section 5.3 for further detail
<b>Action Areas</b>											
	<p><u>Action Area 1: Fassaroe</u></p> <p>Fassaroe is identified as the location of major development in Bray; the growth of the settlement in accordance with regional plan targets is contingent on the delivery of the major residential and community services development at this location, there being no other suitable lands in the environs of Bray for such large scale development.</p> <p>While a large part of the lands that are the subject of this action area were zoned in previous plans, and on foot of such zonings, a masterplan produced and agreed, that masterplan is now moot as the development requirements and expectation for this lands has been revised in light of changed circumstances and additional research.</p> <p>The new ‘concept plan’ for Fassaroe is set out on the land use zones shown on Map 1 in the Draft LAP reflect this</p>	Green	Green	Blue	Blue	Blue	Blue	Blue	Blue	Green	<p>The provision of additional housing, open space (including conservation of the Ballyman SAC), link road and central village is positive for biodiversity, population and human health and material assets. The Fassaroe development would improve accessibility and provide a range of housing, commercial and education facilities as well as open space for the local community. Further, phasing of this development and provisions for transport</p> <p>This development would occur on previously zoned land for development, therefore all other impacts are assessed as neutral.</p>

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	<p>layout. Key parameters that have led to this concept include:</p> <ul style="list-style-type: none"> <li>• Existence of a Natura 2000 site along the northern boundary (Ballyman SAC); development will be suitable set back from this site and lands reserved for passive open uses;</li> <li>• The necessity of a link road through the area from Bray directly to Enniskerry; the provision of such a road could provide an alternative link to Enniskerry, allow for adjustment to the existing main access road to Enniskerry from the N11, the R117;</li> <li>• While plans for Luas extension to Bray have undergone a number of revisions, the plan should retain the possibility of Luas extension to and stabling in Fassaroe;</li> <li>• The area will require a new, central ‘village centre’ which will provide for both the retail and services needs of the resident population but will also include a school campus;</li> <li>• The need for a significant new open space facility to serve both the future residents of the area and the wider area; significant parts of the area were formerly used for aggregate extraction and for land filling and such areas are considered optimal for such use.</li> </ul>									
	<p><u>Action Area 2: Parknasilloge</u> This action area is located west of Enniskerry town centre and immediately north of Kilgarron housing development, in the townland of Parknasilloge. This action area measures c. 13.5ha. This action area shall be developed as</p>									<p>The County Development Plan sets out provisions for this Action Area, therefore this represents the baseline and as such neutral environmental impacts are envisaged.</p>

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	<p>a residential, open space, employment and community zone in accordance with the following criteria:</p> <ul style="list-style-type: none"> <li>• A minimum area of 2ha shall be reserved as Active Open Space (this is the size of the area currently occupied by Enniskerry GAA). In the event of the relocation of the GAA to an alternative location, this quantum of AOS shall, as a minimum, be maintained within the overall action area. Any alternative AOS shall be maintained available for general public use, shall be suitably sized to allow for organised sporting activities i.e. pitches, courts etc and shall be so located within the action area so as to be easily accessible by the wider community. (Any proposals to redevelop the existing GAA grounds will only be considered when the Planning Authority has been satisfied that suitable alternative lands have been secured for this sporting facility).</li> <li>• A minimum of 1.2ha shall be reserved for education use.</li> <li>• A minimum of 0.4ha shall be provided for a community uses, including a community centre of not less than 500sqm and an equipped playground of not less than 400sqm.</li> <li>• A minimum of 1ha shall be provided for employment uses. Generally, this shall comprise office/studio/surgery type development of the highest architectural quality and layout. A minimum of 0.4ha of this area shall however be reserved for local service and incubator businesses.</li> <li>• The car park associated with the employment area shall be so located and designed to facilitate tourist</li> </ul>									



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	<p>use during non-business hours and shall at all times remain available and open for this use</p> <ul style="list-style-type: none"> <li>• A maximum of 156 residential units may be provided on the remainder of the site (8.8ha).</li> <li>• The development shall be delivered in phases such that adequate education, community and employment facilities are provided for each phase; in particular, the school site shall be provided in Phase 1 accompanied by no more than 50% of the residential development and the employment facilities shall be provided no later than Phase 2 accompanied by no more than an additional 75% of the residential units.</li> <li>• A maximum of two vehicular access points onto Local Primary Road L1010 (Enniskerry – Glencree) shall be permitted.</li> <li>• To achieve a sense of place and allow for visual diversity any residential application should provide for a number of identifiable and distinct housing estates (not exceed 60 units), each containing different house designs within an overall unified theme.</li> <li>• Full geotechnical and archaeological assessment of the lands shall be undertaken prior to any development taking place.</li> <li>• Development proposals within the Parknasilloge Action Area shall take cognisance of the requirement to maintain the rate, quality and general areas where groundwater recharge occurs in order to maintain or enhance the recharge supplying the groundwater-dependent habitats of Knocksink Wood SAC. This shall be achieved by the use of an appropriate SuDS system(s) developed throughout any development site</li> </ul>									

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	and taking into account the cumulative in-combination impact of other development.									
	<p><u>Action Area 3: Cookstown</u></p> <p>This action area is located south of the town centre, in the townland of Cookstown. This action area measures c. 9.4ha. This action area shall be developed as a residential, open space and community space in accordance with the following criteria:</p> <ul style="list-style-type: none"> <li>• A maximum of 105 housing units may be provided in this action area, with density not exceeding 10/ha on the lands zoned R10, and the remainder may be developed at a higher density but not exceeding 20/ha.</li> <li>• A minimum area of 0.4ha shall be provided for voluntary / sheltered housing, of a type to be agreed with the Local Authority, as part of any Part V obligations under the Wicklow Housing Strategy. Permission will not be considered for private housing until sufficient progress has been made on this element.</li> <li>• Access to the site shall be from local road LP-1020.</li> <li>• A public park of a minimum of 2ha shall be established along the full southern and western boundaries of the action area, which shall comprise an amenity walk area along the existing tree lined field boundaries connecting through the development to regional road R760 (Enniskerry – Kilmacanogue) and to the existing pedestrian route along the Dargle. In light of the provision of such an amenity space, the incidental open space required to be interspersed</li> </ul>									The County Development Plan sets out provisions for Action Area 3, therefore this represents the baseline and as such neutral environmental impacts are envisaged.

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	<p>throughout the residential area may be reduced to 7.5% of the total zoned residential area.</p> <ul style="list-style-type: none"> <li>Any development shall be so designed to maintain maximum views of the Sugarloaf from Cookstown Road.</li> </ul>									
<b>Specific Local Objectives</b>										
	<p><u>SLO1: Kilruddery House</u></p> <p>Kilruddery House and grounds are considered an important asset to the town and Bray, providing important cultural, recreational and tourism services to the area. It is an objective to support the ongoing protection of the house and gardens and their development as a visitor attraction, and to facilitate the growth of this business into other related areas, such as tourist accommodation, tourism retail, visitor centre etc.</p> <p>In the previous development plan, some lands surrounding the house and gardens were zoned for tourism use, with the majority given ‘greenbelt’ designation, while lands to the west / north-west of the house were zoned for housing and open space. In light of changed circumstances, including a new County Development Plan and associated Core Strategy, the previous strategy for this area has been reviewed.</p> <p>The development of these lands shall comply with the following objectives:</p> <ul style="list-style-type: none"> <li>The lands immediately surrounding the house and garden are zoned in this plan ‘Kilruddery Demesne Conservation and Tourism Zone’ and this mixed use type zoning extends to the entire house and gardens, not just a limited area to the north. Notwithstanding</li> </ul>									<p>The change of land use zoning (immediately surrounding the Kilruddery House) from greenbelt to conservation and tourism is deemed to be negligible as protection and conservation of the asset remains the key objective irrespective of the land use zone.</p> <p>The conversion of designated open space and green belt land to residential use can give rise to a range of environmental impacts. Appropriate mitigation measures are outlined in Table 21. It should be noted that the provision of public open space, additional employment opportunities and transport links as part of this development can positively impact biodiversity, population and human health and material assets, therefore those impacts are deemed to be uncertain in nature.</p>

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	<p>this change in zoning, the priority in this area remains the protection and conservation of this valuable heritage asset. The types of uses that will be considered in this area will not be prescribed but rather any development that is considered to enhance the conservation and tourism offer of the area will be considered open for consideration. Only those projects which show a direct link to enhancement of the estate and its visitor product will be considered for permission.</p> <ul style="list-style-type: none"> <li>Former Kilruddery Demesne lands have in the past been released to the market and developed for a variety of essential uses such as for housing, employment and recreation. It is considered that such development has been successful in delivering much needed housing and employment to Bray, and did not unacceptably damage the historical and cultural setting of the main house and gardens. In this regard, given the extreme shortfall of suitable housing land in Bray and the high demand for housing in the area, and taking into account the Core Strategy of the Wicklow County Development Plan and the findings of the environmental sensitivity mapping carried out for the Strategic Environmental Assessment of this plan, it is considered that there is additional land at Kilruddery that may be suitable for new housing and active uses. Therefore this plan designates 12ha of land for new housing (at density of 20 units/ha).</li> <li>A key element of the revised concept is the delivery of a significant area of public open space of not less than 4ha, which shall be laid out as playing pitches, courts, playgrounds etc which shall be linked by a linear park</li> </ul>									

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	<p>to an existing area of wooded open space along the Bray SCR adjacent to Hollybrook Park, generally following the route of the stream. No housing may commence until such a time of the design, implementation plan and future management structure of this space has been agreed in writing with the Planning Authority. An additional area of ‘buffer’ open space shall be maintained in a natural condition between any housing development and Kilruddery House.</p> <ul style="list-style-type: none"> <li>• In order to facilitate commercial uses which may not be strictly linked to the tourism product on these lands, land is designated for general ‘employment’ use, generally to be accessed via the Bray Business Park adjoining to the north. The density, design and height of buildings in this area shall be particularly managed so as to ensure minimal visual impact on the area.</li> <li>• Vehicular access to the housing and open space elements shall be via the existing Kilruddery entrance; additional pedestrian and cycling routes shall however be provided where opportunities arise e.g. via Giltspur Lane to the west and Hollybrook Park.</li> <li>• The location of such uses are shown indicatively on the concept plan to follow, which is reflect in the zoning objectives but may be amended in light of best fit that arises on the lands. However, no structure may be built above the 70m contour line and the ridgeline of any structure shall exceed not 78m.</li> </ul>									

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	<p><u>SLO2 – Rehills</u></p> <p>This riverside area, just east of the M11, measures c. 7ha and is bounded to the north and west by the River Dargle and the south by a steep bank up to Herbert Road. The majority of this area is owned by the Local Authority. Upon completion of the River Dargle Flood Scheme, those lands zoned ‘R-HD’ in this action area will suitable for development. The remaining lands are designated as ‘open space’ and comprise part of the River Dargle flood conveyance area (which may be suitable for informal park use, but the area will be required to remain free of any objects / items that could become dislodged in the event of high water flow, such as trees and park benches).</p> <p>Access to these lands can be achieved through the construction of a new bridge from La Vallée; Transport Infrastructure Ireland has also indicated in their 2017 N11 study that a route from Dargle Road to Herbert Road through these lands could aid in traffic circulation in this area, easing pressure and congestion on the N11. In light of these significant infrastructural requirements, it is considered that a high intensity of development is deemed necessary to offset land loss or cost associated with such works.</p> <p>Development of these lands shall be in accordance with the following objectives:</p> <ul style="list-style-type: none"> <li>• Up to 3.3ha may be developed for residential use, which shall be in a high intensity format of not less than 50 units / ha;</li> <li>• The remaining lands shall be laid out and developed as public amenity areas in a layout and of a format to be agreed before development commences. All open</li> </ul>									<p>The provision of high density residential and open space within the land that was zoned as mixed use is generally considered to give rise to neutral impacts given that the land was previously zoned for similar development.</p> <p>The creation of high density residential development is likely to positively impact on population and human health through the increase of local housing for the community.</p> <p>The creation of high density housing within the plan area has the potential to strain existing infrastructure and services. However, it is considered that the proposed new link road and existing energy and communications infrastructure is likely to be capable of coping with increased demand and that no major works are likely for development in urban areas. It considered that impacts on material assets are uncertain.</p>

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	<p>spaces either in the ‘OS’ or ‘R-HD’ zones shall be linked and shall connect in as many locations possible to existing public areas (existing parks, open spaces, public roads etc) and in particular to the future riverine amenity route along the south bank of the Dargle to Bray town centre, which is an objective of this plan, as well as to the Herbert Road if possible.</p> <ul style="list-style-type: none"> <li>The layout and design of any development shall facilitate the delivery of a link road from Dargle Road to Herbert Road, unless further study / analysis by WCC and the TII determines that this road is not necessary or feasible;</li> </ul>									
	<p><u>SLO3: Former Bray Golf Course</u></p> <p>This MU zoned area measures c. 17ha. It is an objective that this land be developed as a mixed commercial, residential, education / community facilities and open space zone. While only c. 5ha has been developed to date (schools / sports zone) there is an extant permission on the remainder valid until 2020 and as substantial works have been carried out an application may be made for this permission to be extended for a further 5 years to 2025. In the event that this permission is not taken up, any new / revised proposals shall comply with the following requirements:</p> <ul style="list-style-type: none"> <li>The lands shall be developed as an extension to the existing town centre and shall involve the creation of a number of new streets and squares, where pedestrians and non-motorised forms of transport have priority, buildings front directly onto streets and squares with active, attractive ground floor frontage;</li> </ul>									<p>The provision of mixed use development within the land that was zoned as mixed use is generally considered to give rise to neutral impacts given that the land was previously zoned for similar development.</p> <p>The creation of high density residential development with supporting social infrastructure, transport routes, retail development and open space is likely to positively impact on population and human health and material assets through the increase of local housing, employment opportunities and accessibility for the community.</p>

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	<ul style="list-style-type: none"> <li>The design, finishes etc of all buildings shall draw reference and inspiration from the existing traditional town centre and the development shall flow from ‘old’ to ‘new’ without jarring distortions of scale, format or design;</li> <li>Excellent linkages shall be provided from the site to surrounding areas; multiple access points for both vehicles and cyclists / pedestrians shall be developed and in particular, the development shall include linkages through the site between the Dublin Road and Bray seafront / the DART station and public walking route along the river;</li> <li>Car parking shall generally to located under or within buildings; not more than 20% of the total overall parking provision required for the entire MU area may be located on open surface locations;</li> <li>The residential element shall generally be delivered in a high density format and shall achieve the delivery of not less than 1,000 units in a variety of unit sizes and formats;</li> <li>Retail development shall be integrated into the development in a manner that flows from the existing retail core of the town and brings vitality and vibrancy to the streets and squares of the new development. Retail floor space (including retail services such as restaurants, hairdressers etc) of not less than 20,000sqm (of which a minimum of 10,000sqm shall be comparison floorspace) will be required;</li> <li>Non retail commercial floor space, such as offices, professionals services etc of not less than 5,000sqm</li> </ul>									



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		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
	<p>shall be integrated into the development at both ground and above retail levels;</p> <ul style="list-style-type: none"> <li>The existing schools / sports zone shall be retained; excellent access shall be retained to the schools and associated sports facilities and such access shall avoid the need to bring traffic through new residential areas or town shopping streets;</li> <li>Not less than 2ha shall be developed as a public park;</li> <li>Any application shall include a detailed phasing programme that ensures the timely delivery of all elements of the SLO. In order to ‘kick start’ the development, a first phase of housing, being those units that are not integrated into the mixed use retail / commercial element, in conjunction with the public park, may be developed as a ‘Phase 1’ of the overall development, strictly on the basis of the remaining housing being delivered in tandem with the retail / commercial element.</li> </ul>									
	<p><u>SLO 4: Former Dell site, Vevay Road – Boghall Road</u> This site was formerly occupied by computer company Dell and has been vacant for some years. The site is occupied by a large manufacturing building and surrounding grounds and car parking, measuring c. 3.75 ha. While there is a demand for additional housing in Bray, it is not considered appropriate that any and every vacant employment site should be considered for solely residential redevelopment as it is not sustainable to only deliver significant new housing at the expense of employment opportunities. Given that this site is surrounded by both residential and employment uses, it is considered that a mixed, high</p>									<p>The provision of high density residential development in a site that was zoned for employment use is considered to have an uncertain impact on population and human health. This is attributable to the positive impacts associated with the provision of additional housing but loss in the footprint of land zoned for employment use which would contribute to job creation and economic activity within the plan area.</p> <p>The creation of high density housing within the plan area has the potential to strain existing infrastructure and services. However, it is considered that the existing transport, energy and communications infrastructure is likely to be capable of coping with increased demand and that no major works are likely for this</p>

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
	<p>intensity employment and residential scheme would be suitable on these lands, in accordance with the following criteria:</p> <ul style="list-style-type: none"> <li>The development shall be delivered a high density format and in particular, shall have a plot ratio of not less than 1:1. Development of up to 4 storeys may be considered;</li> <li>The employment element shall be in modern office format and low density manufacturing / warehousing will not be considered; on the basis of achievement of a 1:1 plot ratio, a total employment floor space yield of at least 20,000sqm is desired;</li> <li>Not more than 40% of total floor space shall be devoted to residential use; depending on the range of unit sizes and formats, at least 150 units is desired (c. 15,000sqm)</li> <li>Any planning application shall include a detailed phasing programme that ensures the timely delivery of all elements of the SLO. In order to ‘kick start’ the development, a first phase of housing, comprising not more than 50% of the total housing programme, may be developed as a ‘Phase 1’ of the overall development, strictly on the basis of the remaining housing being delivered in tandem with the employment element.</li> </ul>									<p>phased development given its urban location. It considered that impacts on material assets are uncertain.</p> <p>Given that the land was previously zoned for development, it is considered that no other significant environmental impacts would arise, therefore all other impacts are assessed as neutral.</p>
	<p><u>SLO 5: Bray Gateway &amp; Transportation Hub (GTH zone)</u> It is objective of this plan that the area designated as GTH are Bray railway station shall be identified and prioritised as the principal transport hub for the County, with a range of transport services, of various modes, being available</p>									<p>The Bray Town Development Plan 2011 - 2017 sets out similar provisions for this area, therefore this represents the baseline and as such neutral environmental impacts are envisaged.</p>

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
	<p>and emanating from here to all parts of the District and the wider east coast of the County.</p> <p>In addition, it is the objective that the area surrounding the station shall be developed as a ‘gateway’ to the town with clear linkages to Bray Town Centre and the Seafront. The area is considered suitable for higher density mixed use development including retail, commercial, office, residential and civic use.</p> <p>The Council will favour attractive developments incorporating uses that give rise to increased footfall, including, inter alia shops, restaurants, cultural and recreation related developments.</p>									
	<p><u>SLO 6: Employment lands between Boghall Road – Bray SCR</u></p> <p><u>This SLO is located between Boghall Road and the Bray Southern Cross Road and is zoned for employment use. This is considered a significant development site that could add substantially to employment creation in the town. Any development on these lands shall accord with the following objectives:</u></p> <ul style="list-style-type: none"> <li>• To accommodate the traffic movements generated by this zoning, the roads / footpaths servicing development on these lands shall access onto both Boghall Road and the Bray SCR;</li> <li>• <u>Any development on the southern part of the lands shall include landmark buildings, of the highest architectural quality, fronting onto the Bray SCR;</u></li> <li>• <u>The development shall be so designed as to provide for a ‘green route’ link between Boghall Road and Bray SCR (‘Swan River green route’</u></li> </ul>								<p>The Bray Town Development Plan 2011 - 2017 sets out similar provisions for this area, therefore this represents the baseline and as such neutral environmental impacts are envisaged.</p>	

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
	<p><u>SLO7: Monastery</u></p> <p>This SLO is located on the northern side of the settlement, in the townland of Monastery. This SLO measures c. 5.7ha and includes 3ha zoned for housing, 0.25ha is occupied by an existing dwelling, and the remainder being reserved for its existing agricultural use with an open space zoning. The SLO area shall be developed in accordance with the following criteria:</p> <ul style="list-style-type: none"> <li>• A maximum of 12 residential units may be constructed.</li> <li>• The optimum location for housing shall be determined following (1) an archaeological evaluation of the action area, with particular regard to the existing National Monument (Annabaskey Church) (2) agreement with the Planning Authority of the final route corridor of the Fassaroe – Monastery link road and (3) consideration of the amenities of existing properties along Ballyman Road.</li> <li>• Suitable access shall be provided from Ballyman Road and any access road shall be designed to form the final element of the future Fassaroe – Monastery link road.</li> </ul>									<p>The County Development Plan sets out provisions for this SLO, therefore this represents the baseline and as such neutral environmental impacts are envisaged.</p>
	<p><u>SLO8: Kilgarron</u></p> <p><u>This SLO is located south of the town centre, in the townland of Kilgarron. This SLO measures c.2.5ha. These lands shall be developed as a residential area in accordance with the following criteria:</u></p> <ul style="list-style-type: none"> <li>• <u>Access to the site shall strictly be from local road LP-1010 (Enniskerry - Kilgarron) and no opening,</u></li> </ul>									<p>The County Development Plan sets out provisions for this SLO, therefore this represents the baseline and as such neutral environmental impacts are envisaged.</p>

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
	<p><u>entrance or otherwise (including for construction purposes) shall be made along the Forge Road.</u></p> <ul style="list-style-type: none"> <li>• <u>Development proposals shall be accompanied by a detailed tree survey of the entire area, including all trees along site boundaries. Development proposals shall include measures to protect and re-enforce existing mature trees and proposals for new tree planting.</u></li> <li>• <u>The finished floor level of any development shall not exceed 90.00mOD (for the avoidance of doubt, this being the existing ground level at the south-east of the existing jumping arena); the top ridge height of any structure shall not exceed 98.00mOD.</u></li> <li>• <u>A maximum of 0.7ha of the area may be developed for residential use. The site shall be developed at ‘town centre’ type densities (i.e. 40 units/ha max) and shall generally comprise terraces and courtyards of dwellings, as opposed to detached format housing; commercial development is not permitted within the area.</u></li> <li>• <u>The design of any development proposed shall have due regard to the protection of the privacy and amenity of the houses on the north side of the area and in particular, the design shall include significant screening and planting proposals.</u></li> <li>• <u>Any development proposals shall be accompanied by a Visual Impact Assessment which shall have particular regard to views of the site from the town square and the approach roads to the north of the town and where adverse visual impacts are identified, suitable mitigation measures shall be proposed.</u></li> </ul>									

Ref	Text	SEA Environmental Objectives								Comments
		Biodiversity	Population and Human Health	Soils and Geology	Water	Air, Noise and Climate	Heritage	Landscape and Visual	Material Assets	
	<ul style="list-style-type: none"> <li>The remainder of the site, zoned open space, is not designated for a particular purpose (either housing or amenity use), shall be retained in its current agricultural use.</li> </ul>									

## 7.5 Summary of Impacts

This section outlines the principal findings of the SEA of the Draft LAP and summarises those impacts identified in Sections 7.3 and 7.4.

### 7.5.1 Biodiversity

The potential impacts on biodiversity are mostly neutral or positive in nature. The Draft LAP generally avoid impacts on natural ecosystems and biodiversity.

Positive impacts on biodiversity are likely to arise from the protection and conservation of flora and fauna (through setting back of riverside development and creation of natural recreation/amenity areas) as well as the provision of green space and enhancement of green infrastructure across the plan area.

Negative impacts may arise where greenfield development is undertaken, for example to construct new roads or residential development, however it is envisaged that assessment would be undertaken to support such developments in accordance with legislative and planning obligations.

### 7.5.2 Population and Human Health

The potential impacts on population and human health are generally neutral or positive in nature. The Draft LAP improves accessibility and provides additional housing and employment opportunities to facilitate projected growth within the plan area.

The objectives in the Draft LAP would create employment opportunities, improve accessibility and/or provide additional sources of recreation and amenity for the local population thereby improving the quality of life for residents. Further, the Draft LAP also increase the provision of housing within the plan area and improve the vitality, vibrancy of town centres and other characteristics that can strengthen social cohesion within the plan area.

### 7.5.3 Soils and Geology

The potential impacts on soils and geology are predominantly neutral. The draft LAP generally avoid impacts on soils and geology.

Uncertainties are identified where the precise nature and extent of development proposals are unknown. Further, there is the potential for negative impacts where greenfield development is undertaken and there is the potential to create pollution and/or increase the likelihood of contamination. It is envisaged that assessments would be undertaken to support such developments in accordance with legislative and planning obligations.

### 7.5.4 Water Resources

The potential impacts on water resources are generally neutral as the Draft LAP would avoid negative impacts on water bodies and flood risk.

Positive impacts are likely where provisions have been made to avoid in-water development and enhance effective flood risk management in vulnerable areas. This would maintain the conveyance capacity of rivers, ensure that development in vulnerable areas is cognisant of flood risk and generally enhance water resources within the plan area. The SFRA, undertaken as part of this SEA, also demonstrates that flood risk in the plan area can be adequately managed and that this Draft LAP will not cause unacceptable adverse impacts.

### 7.5.5 Air, Noise and Climate

The potential impacts on air, noise and climate are generally neutral or positive in nature. The Draft LAP generally seeks to avoid impacts on air, noise and climate.

The Draft LAP generally consolidates high density development in the town centre, promotes sustainable transport infrastructure and seeks to enhance the modal share of public transport and active transport by providing additional cycleways and footpaths. This would reduce reliance on private cars and thus reduce associated emissions.

Negative impacts may arise from the construction of new roads within greenfield sites and new streets within Enniskerry which may increase vehicular movements and exacerbate congestion respectively.

### 7.5.6 Heritage

The potential impacts on heritage are generally neutral with some positive impacts likely to occur. The Draft LAP seeks to avoid impacts on architectural, archaeological and/or vernacular heritage values.

Significant emphasis is given to the protection and conservation of heritage values in the Draft LAP and positive impacts are likely to arise due to the incorporation of measures to regenerate derelict/underused sites, enhancement of existing assets and improvements to the accessibility of heritage features and values.

Negative impacts may arise where development is undertaken in the vicinity of designated heritage sites, for example the construction of new roads and development of opportunity sites, however it is envisaged that assessment would be undertaken to support such developments in accordance with legislative and planning obligations.

### 7.5.7 Landscape and Visual

The potential impacts on landscape and visual are predominantly neutral with some positive impacts likely to occur. Development would generally be consolidated within Bray town centre, undertaken on appropriately zoned lands in Fassaroe and generally avoid impacts on landscape and visual.

The identification of key landscape areas within the plan area (particularly around Kilruddery), promotion of revitalisation, reinforcement of the urban/rural distinction in the plan area and encouragement for sensitive design is positive for landscape and visual.

Negative impacts may arise where intrusive development is undertaken, particularly in landscape character areas, greenfield sites or low density zones. It is envisaged that assessment would be undertaken to support such developments in accordance with legislative and planning obligations.

### 7.5.8 Material Assets

Generally, there is a mixture of impacts on material assets likely to arise from the Draft LAP.

The Draft LAP generally consolidates high density development in the town centre, encourages the provision of efficient infrastructure networks, promotes accessibility and seeks to enhance existing material assets within the plan area. This would positively impact on material assets.

Extensive development (such as the creation of large-scale employment clusters and densification at opportunity sites) may strain the existing energy, telecommunications, transport and waste infrastructure. It is envisaged that the scale of development would be appropriate to the site and that the relevant assessments would be undertaken to support such developments in accordance with legislative and planning obligations.



## 8 Mitigation Measures and Monitoring

### 8.1 Mitigation

Mitigation measures are measures envisaged and designed to prevent, reduce and as fully as possible offset any significant adverse impacts on the environment of implementing the Draft LAP. All mitigation measures have been developed and agreed with Wicklow County Council as part of the SEA iterative process.

The primary mitigation measure is to ensure the sustainable and appropriate development of the plan area without compromising the integrity of the natural and built environment. All new development requiring an Environmental Impact Assessment will need to address the range of environmental objectives, indicators and targets and associated environmental mitigation measures and incorporate them into the project specific mitigation measures.

Table 21: Mitigation measures for the Draft LAP

Aspect	Mitigation measures	Relevant objectives	
		County Development Plan	Draft LAP
Biodiversity	Ensure that appropriate measures for conservation and enhancement of the natural and built environment are incorporated into all relevant plans and programmes.	NH1, NH2, NH3, NH4, NH5, NH6, NH8, NH11, NH12, NH13, NH15, NH16, NH17, NH18, NH19, NH20, NH21 and NH22	R1, R2, R3, R4
	Ensure that all new development plans are cognisant of the Biodiversity Action Plan for the County.	Refer to the Natural Heritage Strategy of the County Development Plan.	
	Ensure the protection of ecological resources that have economic benefits e.g. ecological zones that draw tourism.	NH38, NH41 and NH44	
	Compliance with the zoning of the SACs, NHAs, SPAs which prohibits non-compatible developments.	NH2, NH3, NH4, NH5 and NH6	R1, R2, R3, R4
	Ensure that an AA is carried out for all development proposals with potential to impact on Natura 2000 sites.	NH2, NH3, NH4, NH5 and NH6	R1, R2, R3, R4
	The development of new distributor routes should be subject to route option assessment and environmental assessment, where required.	NH1, NH2, NH3, NH4, NH5, NH6, NH8, NH11, NH12, NH13, NH15, NH16, NH17, NH18, NH19, NH20, NH21 and NH22	R1, R2, R3, R4
Population and Human Health	Ensure that access to adequate health and education facilities to meet the demand of the current and projected populace are included in development plans.	CD 6, CD7, CD8, CD9, CD10, CD11, CD12, CD13, CD14, CD15, CD16 and CD17	

	Encourage the further development of regional public transport infrastructure including rail and bus corridors.	TR1, TR2, TR3, TR3, TR4, TR5, TR6, TR7 and TR8	E6, PT3
Soils and Geology	Perform a survey of obsolete urban renewal areas and facilitate and promote the reuse and regeneration of brownfield sites, derelict land and buildings in and around urban centres.	RT13 and the general town centre and retail objectives for Level 5 Town Plans	R1, R2, R3, R4
	Promote the recycling of construction and demolition waste and the reuse of aggregate and other materials in order to reduce the quantities of virgin material being extracted.	WE1	R1, R2, R3, R4
	Ensure that the 'polluter pays principle' is adhered to in full cooperation with the EPA.	WE6	R1, R2, R3, R4
Water Resources	Ensure that the objectives and the programme of measures outlined the River Basin Management Plans are fully implemented.	W12, NH3 and NH20	
	Provide adequate capacity at water and wastewater treatment and storage facilities for current and projected populace.	WI1, WI2, WI3, WI4, WI5, WI6, WI7, WI8, WI9, WI10	OP1, OP2, OP3
	Prevent the alteration of natural drainage systems and in the case of development works require the provision of acceptable mitigation measures in order to minimise the risk of flooding and negative impacts on water quality.	FL4, FL5, FL6, FL7, FL8, FL9	
	Comply with the objectives and policies of the Eastern Catchment Flood Risk Assessment Management Study.		
	Promote SUDS principles for all drainage including the integration of storm water attenuation facilities for new developments and existing catchment areas.	FL8	OP1, OP2, OP3
	Ensure that any new development does not present an inappropriate risk of flooding or does not cause or exacerbate such a risk at other locations.	FL4, FL5, FL6, FL7, FL8, FL9	R1, R2, R3, R4
	Preserve and protect the water quality of Wicklow's river systems where these help to regulate stream flow, recharge ground water and screen pollutant.	NH20, NH21, NH22, and NH23	
	Comply with the DoECLG/OPW guidance on development and flood risk through the control of development in any flood plain so that new and existing developments are not exposed to increased risk of flooding and that any loss of flood storage is compensated for elsewhere in the river catchment.	FL4, FL5, FL6, FL7, FL8, FL9	OP1, OP2, OP3
	Ensure that mitigation measures proposed under the SFRA are implemented as appropriate.		
Air, Noise and Climate	Ensure that the objectives and policies of EU Air Quality legislation are incorporated into plans and programmes upon implementation into Irish law.	WE9, WE10, and WE11	R1, R2, R3, R4, EN1

	Promote the reduction of emissions of Greenhouse Gases to ensure Ireland's compliance with our Kyoto Protocol Targets.	WE9, WE10, WE11	R1, R2, R3, R4, EN1
	Facilitate sustainable transport modes and the use of walking, cycling and public transport.	TR1, TR2, TR3, TR4, TR5, TR6, TR7	R1, R2, R3, R4, OP1, OP2, OP3, EN1
	Consideration of existing noise policy in County Wicklow for example noise mapping and noise action plans produced by the Local Authority. Consideration of likely noise impacts/effects associated with new developments.	WE12, WE13, WE14 and WE15	R1, R2, R3, R4, EN1
	This includes being cognisant of proximity to sensitive receptors when siting new developments and consideration of existing noise sources when zoning lands for residential development.	WE12, WE13, WE14 and WE15	R1, R2, R3, R4, EN1
Heritage	Ensure the protection of all features of architectural and archaeological merit.	BH1, BH3, BH4, BH7, BH8, BH9, BH11, BH13, BH15, BH17, BH18, BH19, BH20, BH22	R1, R2, R3, R4, OP1, OP2, OP3
	Promote the designation of areas of architectural merit throughout the County.	BH1, BH3, BH4, BH7, BH8, BH9, BH11, BH13, BH15, BH17, BH18, BH19, BH20, BH22	R1, R2, R3, R4, OP1, OP2, OP3
	Prevent inappropriately designed developments in designated areas of architectural merit.	BH2, BH8, BH10, BH11, BH13, BH16, BH19, BH21, BH22	R1, R2, R3, R4, OP1, OP2, OP3,
Landscape and Visual	Ensure that all new plans and programmes incorporate the findings of the Landscape Character Assessment for County Wicklow.	Refer to the Natural Heritage Strategy of the Wicklow County Development Plan.	OP1, OP2, OP3
	Promote the integration of suitably designed developments into existing urban and rural landscapes	BH1, BH2	R1, R2, R3, R4, OP1, OP2, OP3
Material Assets	Protect the hydrological environment from adverse effects of the wastewater discharges by ensuring that there is suitable wastewater treatment to meet demands before discharge to the environment.	W7, W8, W9, W10	E6, OP1, OP2, OP3
	Promote the development of sustainable transportation infrastructure where considered feasible.	TR1, TR2, TR3, TR4, TR5, TR6, TR7	E6, PT3, R1, R2, R3, R4, OP1, OP2, OP3
	Promote the implementation of the Waste Management Plan together with any future National or Regional Waste Management Plans. Additionally, ensure national policies and regulations regarding waste are adhered to.	WE6, WE7 and WE8	E6, R1, R2, R3, R4, OP1, OP2, OP3
	Encourage waste prevention, minimisation, reuse, recycling and recovery as methods of managing waste.	WE2, WE3, WE4, WE5, WE6	E6, R1, R2, R3, R4, OP1, OP2, OP3

	Promote and facilitate community awareness and involvement in community-based recycling initiatives or environmental management initiatives that will lead to local Sustainable waste management practices.		OP1, OP2, OP3
	Promote the development of sufficient energy resources to meet the needs of the plan area and promote the use of renewable energies to meet those needs.	CCE6, CCE7, CCE8, CCE9, CCE10, CCE11, CCE12, CCE13, CCE14, CCE15 and CCE16	E6, OP1, OP2, OP3

## 8.2 Monitoring

Article 10 of the SEA Directive requires that monitoring should be carried out in order to identify at an early stage any unforeseen adverse impacts associated with the implementation of the plan or programme.

A monitoring programme is developed based on the indicators selected to track progress towards achieving strategic environmental objectives and reaching targets, enabling positive and negative impacts on the environment to be measured. As previously described, the environmental indicators have been developed to show changes that would be attributable to implementation of the revised LAP.

The SEA carried out has ensured that any potential significant environmental impacts have been identified and given due consideration.

Wicklow County Council is responsible for collating existing relevant monitored data, the preparation of preliminary and final monitoring evaluation reports, the publication of these reports and, if necessary, the carrying out of corrective action.

Table 22: Monitoring programme for the Draft LAP

Environmental Category	Target	Indicators	Data Sources, Responsibility, and Frequency
Biodiversity	<p>Improve protection for protected sites and species.</p> <p>Improve protection for important wildlife sites, particularly protection of ecological linkages through the provision of green infrastructure.</p> <p>Improve access for the appreciation and promotion of wildlife.</p> <p>Preferably site new development in non-sensitive locations</p>	<p>Number and extent of protected sites.</p> <p>Areas actively managed for conservation.</p> <p>Population and range of Protected Species.</p> <p>Achievement of the Objectives of Biodiversity Plans</p>	<p>Sources: Wicklow County Council, National Parks and Wildlife Services, Fisheries Board and EPA.</p> <p>Responsibility: Wicklow County Council</p> <p>Frequency: Align with monitoring evaluation report on the effects of implementing the County Development Plan.</p>
Population and Human Health	<p>Reduce population exposure to high levels of noise, vibration and air pollution.</p> <p>Increase modal shift to public transport.</p> <p>Co-ordination of land use and transportation policies.</p> <p>Reduction in journey to work (time/distance).</p> <p>Improve access to recreation opportunities</p>	<p>Census population data.</p> <p>Rates of unemployment per area.</p> <p>% increase in housing (number and type).</p> <p>% change of commuter transport distances / times / range of public transport utilised.</p> <p>% of commuters using public transport.</p> <p>% change in education levels.</p>	<p>Sources: Wicklow County Council and Central Statistics Office.</p> <p>Responsibility: Wicklow County Council</p> <p>Frequency: Align with monitoring evaluation report on the effects of implementing the County Development Plan.</p>
Soils and Geology	<p>Maintain the quality of soils.</p> <p>Safeguard strategic mineral reserves.</p> <p>Re-use of brownfield lands, rather than developing Greenfield lands.</p> <p>Minimise the consumption of non-renewable sand, gravel and rock deposits</p>	<p>Rates of re-use / recycling of construction waste.</p> <p>Rates of quarrying.</p> <p>Rates of brownfield site and contaminated land reuse and development.</p> <p>Rates of greenfield development.</p>	<p>Sources: Wicklow County Council and Environmental Protection Agency.</p> <p>Responsibility: Wicklow County Council</p> <p>Frequency: Align with monitoring evaluation report on the effects of implementing the County Development Plan.</p>

Water Resources	<p>Improve water quality in rivers, lakes and groundwater.</p> <p>Protection of catchments/basins.</p> <p>Management of zones vulnerable to flooding.</p> <p>Promote sustainable drainage practices to improve water quality and flow</p>	<p>Compliance of potable water sources to water quality regulations.</p> <p>Compliance of surface waters with national and international standards.</p> <p>Potable and wastewater treatment capacities versus population.</p> <p>% of wastewater requiring treatment.</p> <p>Achievement of the Objectives of the River Basin Management Plans.</p> <p>Amount of new developments within flood plains.</p> <p>Annual costs of damage related to flood events.</p>	<p>Sources: Wicklow County Council, Environmental Protection Agency and Fisheries Board.</p> <p>Responsibility: Wicklow County Council</p> <p>Frequency: Align with monitoring evaluation report on the effects of implementing the County Development Plan.</p>
Air, Noise and Climate	<p>Reduce levels of air pollution including air and noise emissions.</p> <p>Consideration of noise exposure when zoning land for new developments.</p> <p>Minimise emissions of greenhouse gases.</p> <p>Reduce waste of energy, and maximise use of renewable energy sources</p>	<p>Traffic, transport and vehicular survey data.</p> <p>National and region specific emission data.</p> <p>Compliance with national standards.</p> <p>Reduction in greenhouse gas emissions.</p> <p>Compliance of emission licensed facilities.</p> <p>Number of energy / renewable energy production facilities.</p> <p>% of dwellings / businesses using renewable energies.</p> <p>Rates of energy / renewable energy consumption.</p>	<p>Sources: Wicklow County Council, Environmental protection Agency and Central Statistics Office.</p> <p>Responsibility: Wicklow County Council</p> <p>Frequency: Align with monitoring evaluation report on the effects of implementing the County Development.</p>
Archaeological, Architectural and Cultural Heritage	<p>Enhance access to sites of heritage interest</p> <p>Regeneration of derelict and underutilised heritage sites.</p> <p>Improve appearance of areas with particular townscape character.</p> <p>Improve protection for protected archaeological sites and monuments and their settings, protected</p>	<p>Updating of inventories to include new sites / features.</p> <p>Achieving the objectives of development plans regarding heritage protection.</p> <p>Range and extent of areas of heritage potential.</p> <p>Range and extent of areas of special planning controls.</p>	<p>Sources: Wicklow County Council and Department of Environment Community and Local Government.</p> <p>Responsibility: Wicklow County Council</p>

	structures and conservation areas and areas of archaeological potential.		Frequency: Align with monitoring evaluation report on the effects of implementing the County Development.
Landscape and Visual	<p>Improve protection for landscapes of recognised quality.</p> <p>Maintain clear urban/rural distinctions.</p> <p>Enhance provision of, and access to, green space in urban areas</p>	<p>Range and extent of amenity landscapes.</p> <p>Rates of development within designated landscapes.</p> <p>Rates of urban expansion.</p> <p>Rates of deforestation.</p> <p>Rates of agricultural land re-development likely to impact landscape.</p> <p>% change of land use from rural to urban.</p>	<p>Sources: Wicklow County Council and Department of Environment, Community and Local Government.</p> <p>Responsibility: Wicklow County Council</p> <p>Frequency: Align with monitoring evaluation report on the effects of implementing the County Development Plan.</p>
Material Assets	<p>Improve availability and accessibility of commercially provided facilities and public services.</p> <p>Increase local employment opportunities.</p> <p>Improve efficiencies of transport, energy and communication infrastructure.</p> <p>Improve waste water treatment infrastructure.</p> <p>Reduce the generation of waste and adopt a sustainable approach to waste management.</p>	<p>Location / level of infrastructure.</p> <p>Achievement of development plan objectives.</p> <p>Rates of deprivation.</p> <p>Rate of waste disposal to landfill statistics.</p> <p>Range and extent of recycling facilities and services.</p> <p>Rates of recycling.</p>	<p>Sources: Wicklow County Council, Central Statistics Office, National Roads Authority and Environmental Protection Agency.</p> <p>Responsibility: Wicklow County Council</p> <p>Frequency: Align with monitoring evaluation report on the effects of implementing the County Development Plan.</p>

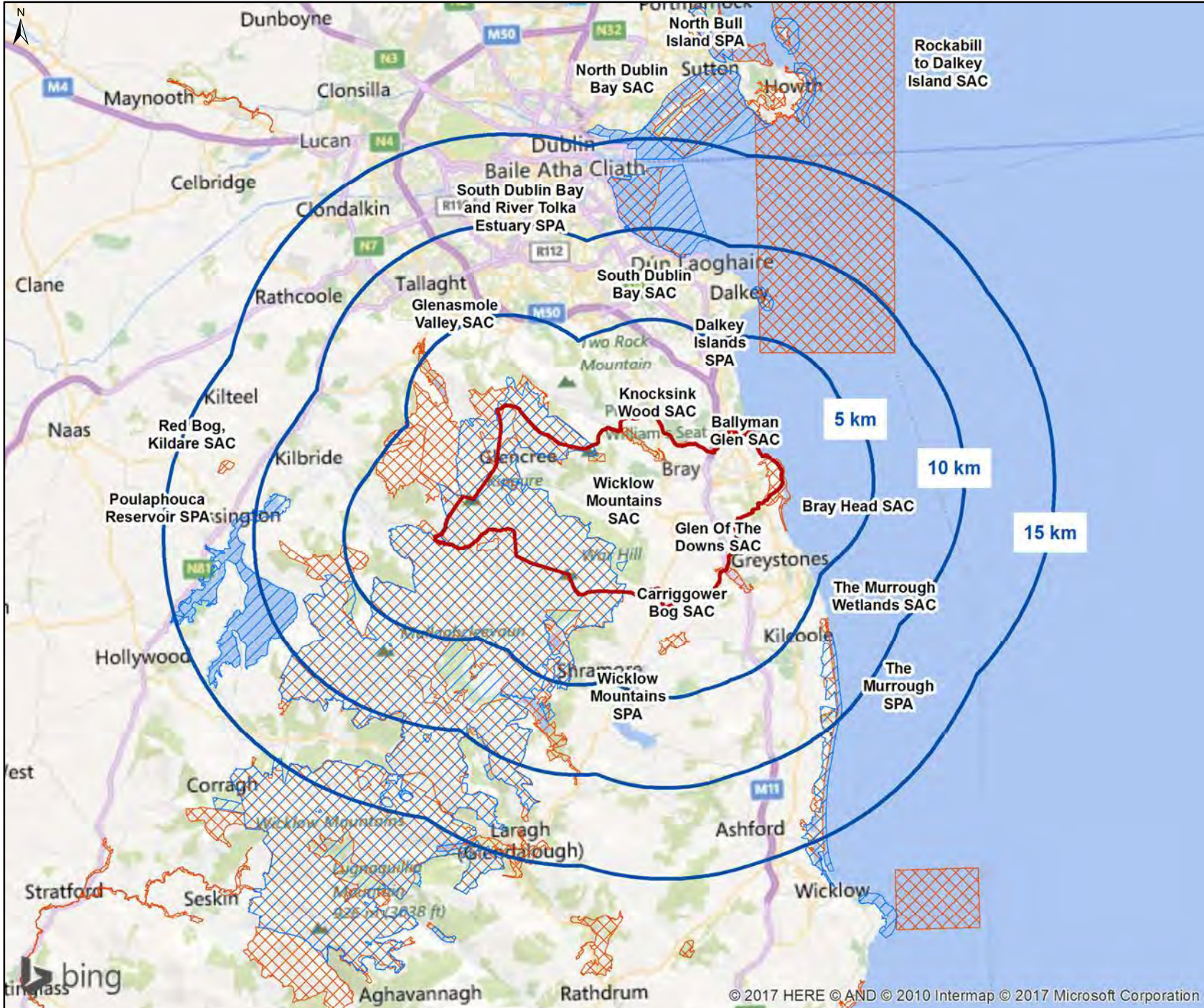
## Appendix A1

### Figures



# **A1 SEA – Draft Environmental Report Figures**

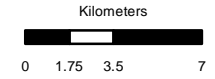
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- Legend**
- Bray Municipal District
  - Bray Municipal Area Buffer
  - Special Protection Areas
  - Special Areas of Conservation

Associated datasets and digital information objects connected to this resource are available at the EPA GeoPortal managed by Environmental Protection Agency Ireland <http://gis.epa.ie/GetData/Download>

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Issue	Date	By	Chkd	Appd



**ARUP**

50 Ringsend Road  
 Dublin 4, D04 T6X0  
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Client  
**Wicklow County Council**

Job Title  
**Bray Municipal District LAP 2017-2023**

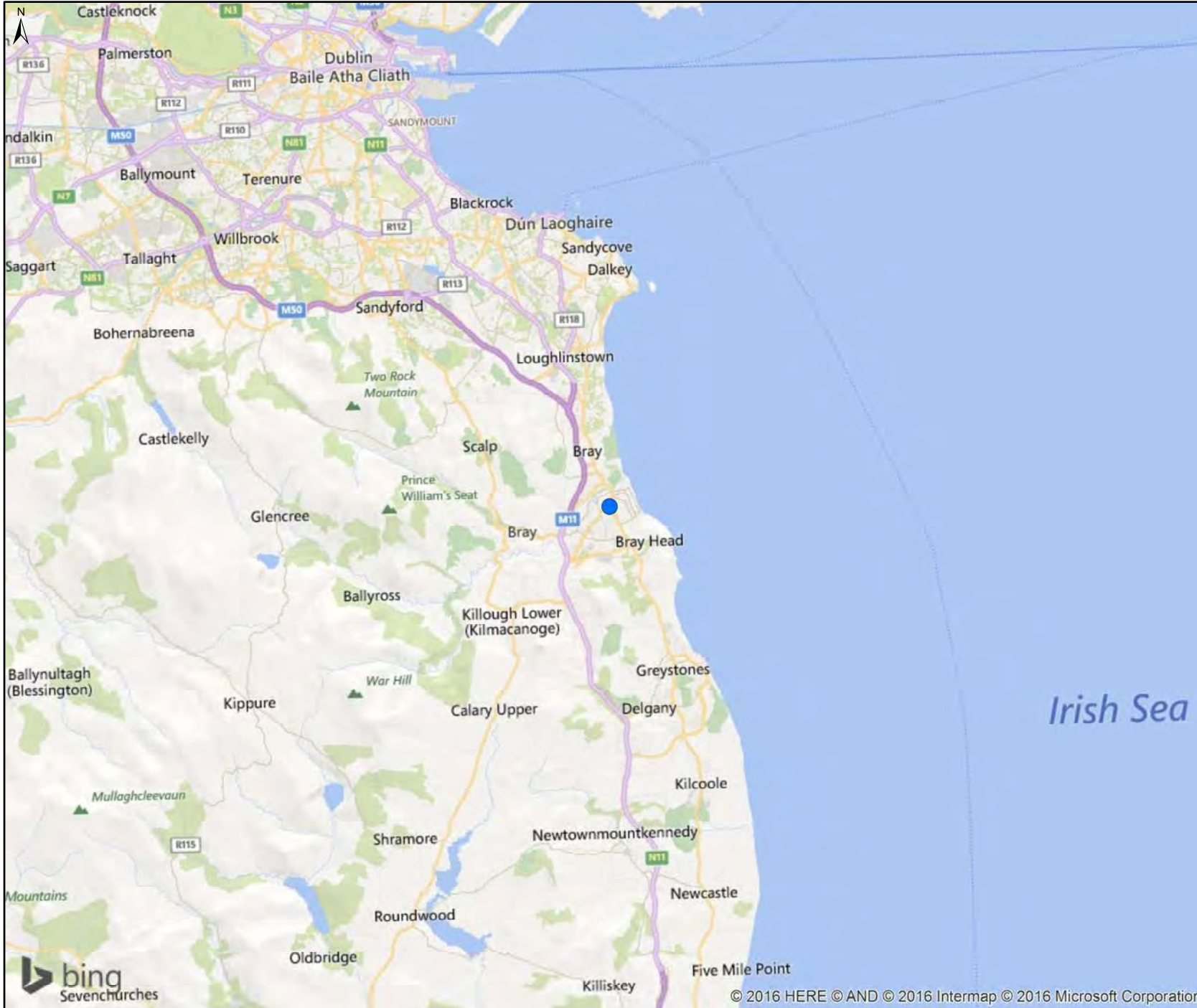
**Natura 2000 Sites**

Scale at A4  
**1:300,000**

Job No <b>251896-00</b>	Drawing Status <b>For Issue</b>
----------------------------	------------------------------------

Drawing No <b>Figure 1</b>	Issue <b>F1</b>
-------------------------------	--------------------





**Legend**

- Location of Bray

D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd

Kilometers

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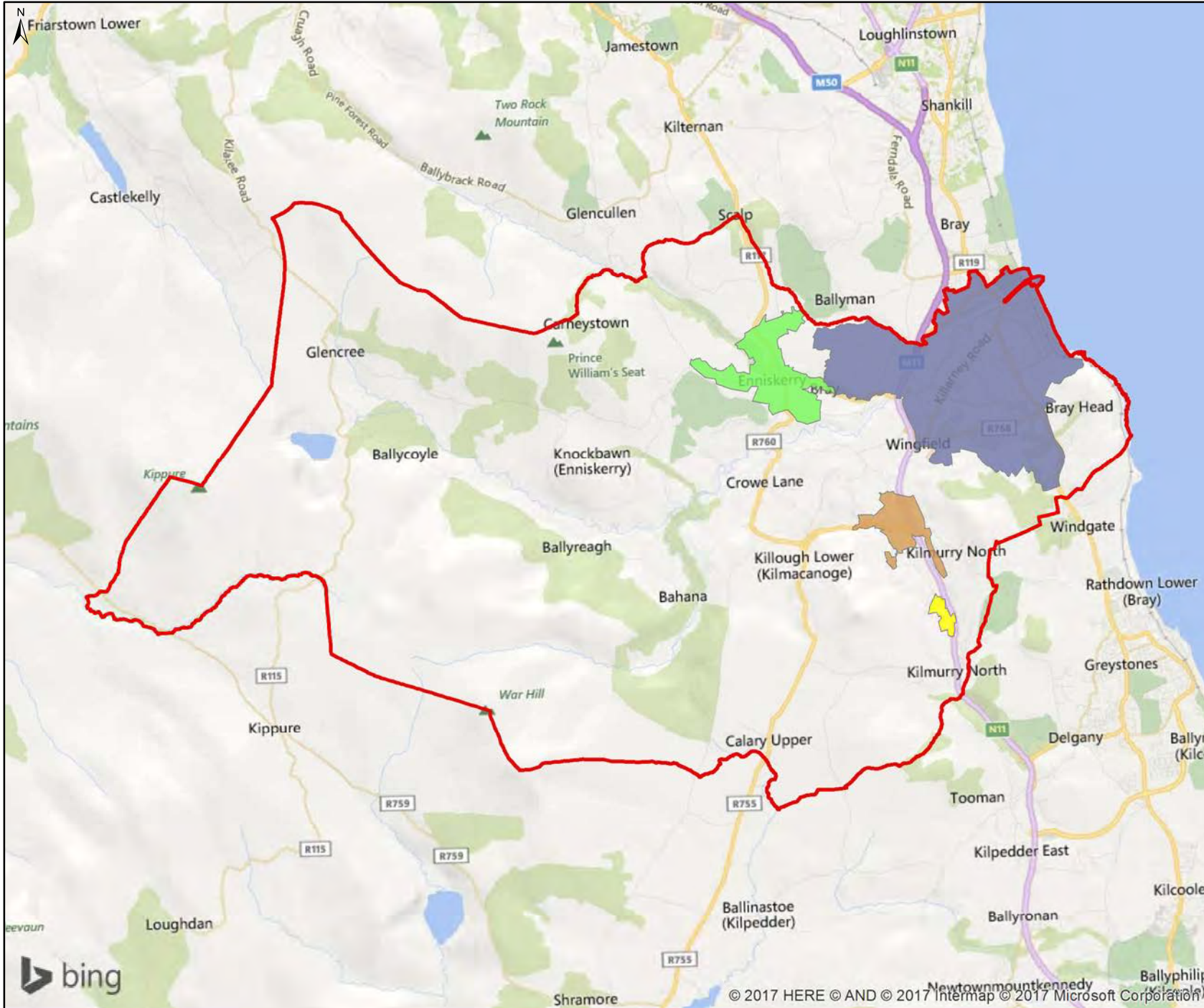
Job Title  
**Bray Municipal District LAP 2017-2023**

**Location of Bray**

Scale at A4  
**1:200,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
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Drawing No <b>Figure 1.1</b>	Issue <b>D2</b>
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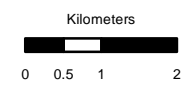


**Legend**

- Bray Municipal District
- Bray Town and Environs
- Enniskerry
- Kilmacanogue
- Kilmurray

Associated datasets and digital information objects connected to this resource are provided by Wicklow County Council

D3	2017-07-28	LD	SW	SW
Issue	Date	By	Chkd	Appd



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Job Title  
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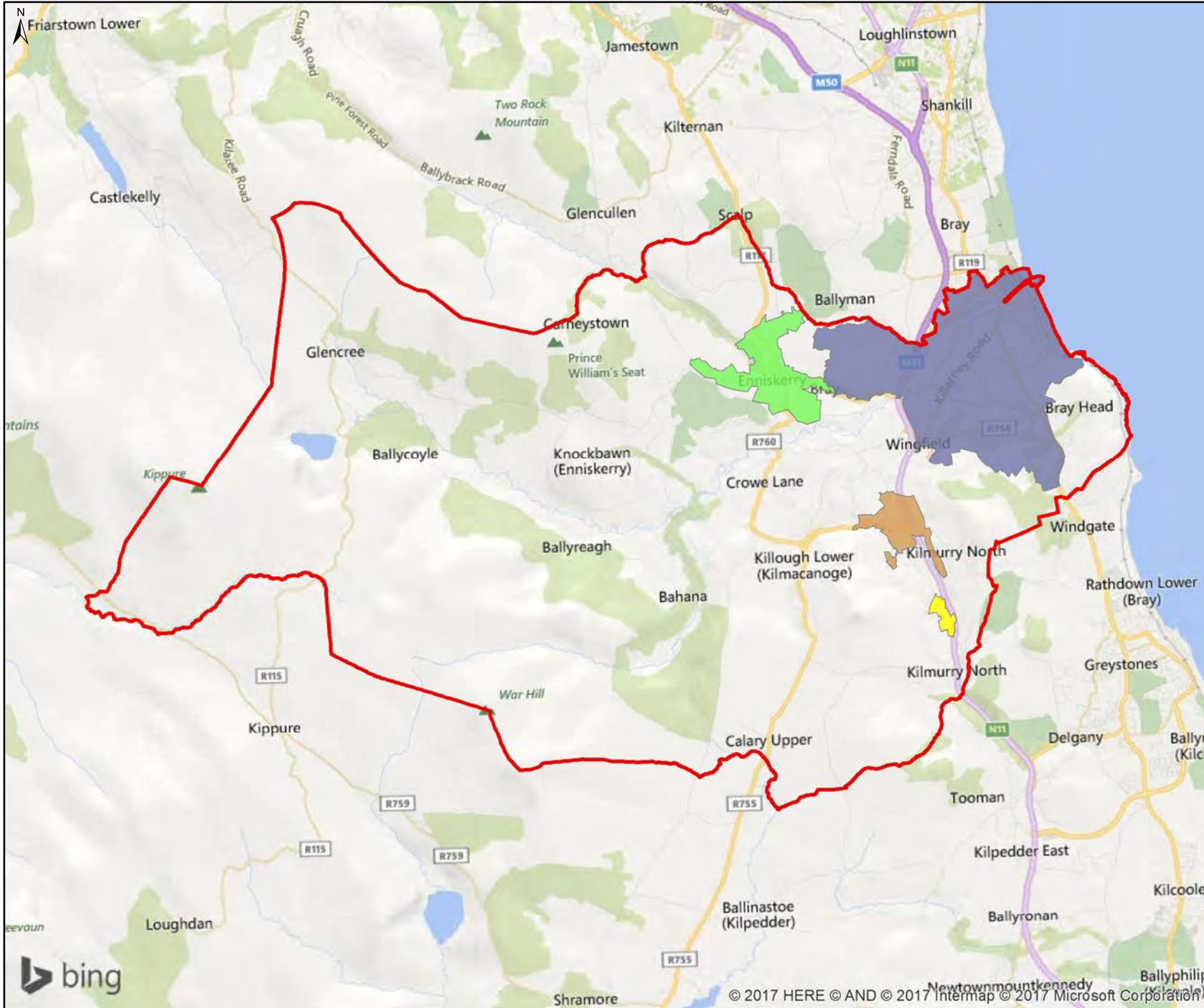
**Extent of the Plan**

Scale at A4  
**1:100,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
----------------------------	--------------------------------

Drawing No <b>Figure 1.2</b>	Issue <b>D3</b>
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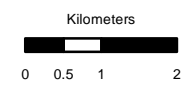


**Legend**

- Bray Municipal District
- Bray Town and Environs
- Enniskerry
- Kilmacanogue
- Kilmurray

Associated datasets and digital information objects connected to this resource are provided by Wicklow County Council

D3	2017-07-28	LD	SW	SW
Issue	Date	By	Chkd	Appd



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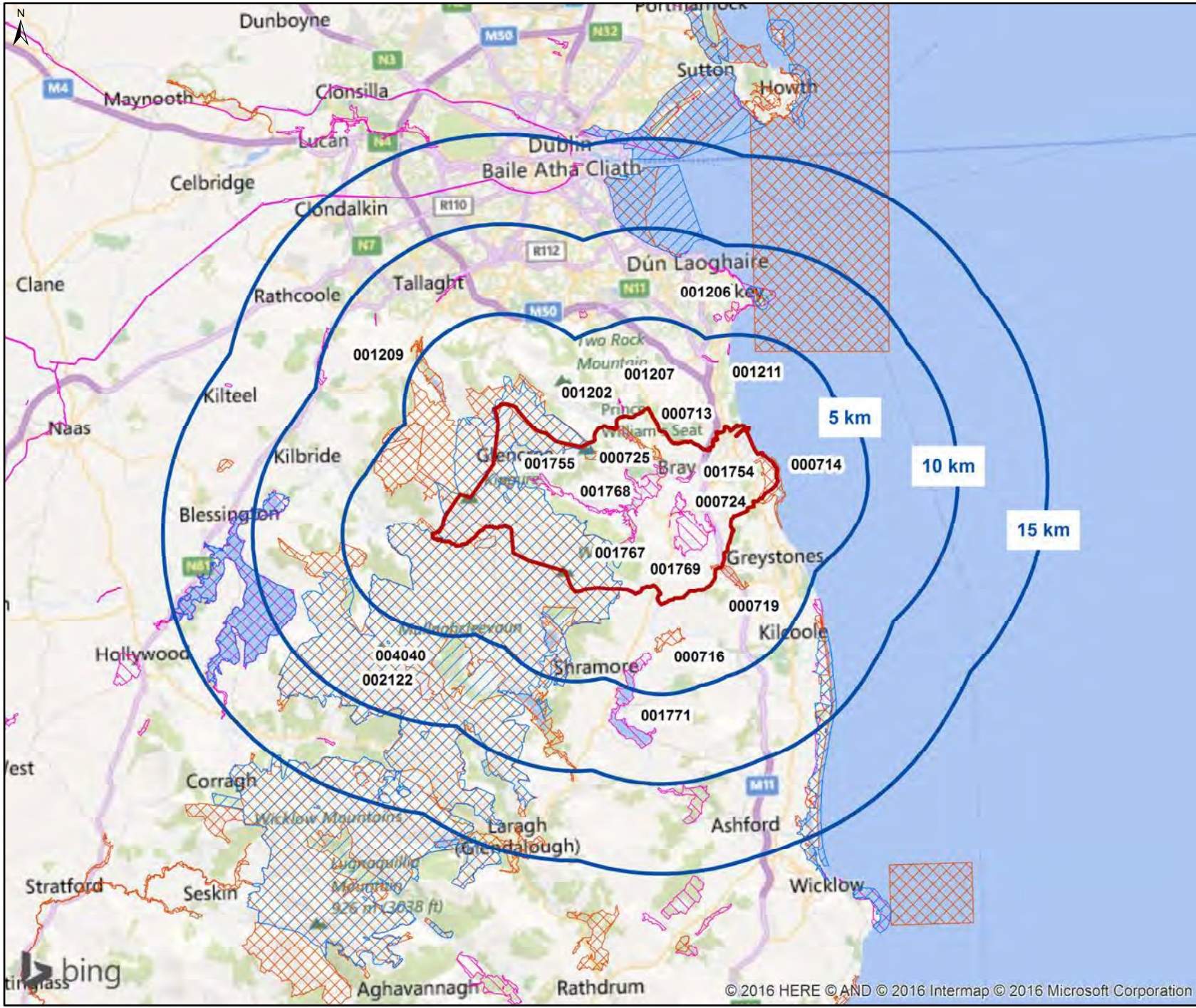
**Proposed Plan Boundaries**

Scale at A4  
**1:100,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
----------------------------	--------------------------------

Drawing No <b>Figure 1.2</b>	Issue <b>D3</b>
---------------------------------	--------------------

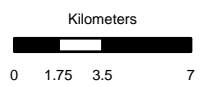




- Legend**
- Bray Municipal District
  - Bray Municipal Area Buffer
  - Special Protection Areas
  - Special Areas of Conservation
  - National Heritage Areas
  - Proposed National Heritage Areas

Associated datasets and digital information objects connected to this resource are available at the EPA GeoPortal managed by Environmental Protection Agency Ireland <http://gis.epa.ie/GetData/Download>

D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd



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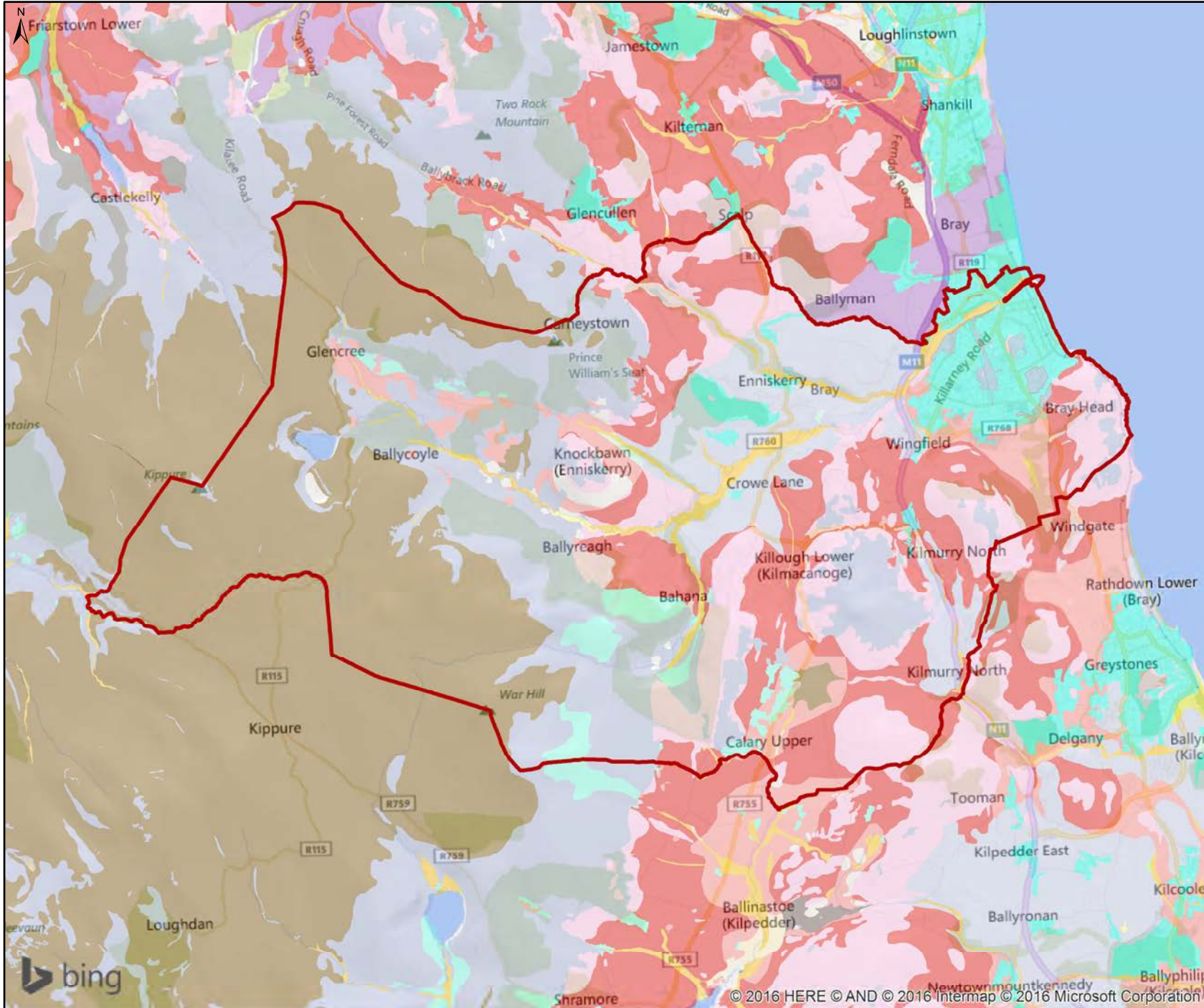
**Ecological Designated Sites (including Natura 2000 sites)**

Scale at A4  
**1:300,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
----------------------------	--------------------------------

Drawing No <b>Figure 4.1</b>	Issue <b>D2</b>
---------------------------------	--------------------



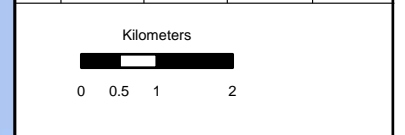


**Legend**

- Bray Municipal District
- Mineral Alluvium
- Acid Deep Well Drained Mineral
- Acid Deep Poorly Drained Mineral
- Acid Poorly Drained Mineral Soils with Peaty Topsoil
- Acid Shallow, lithosolic or podzolic type soils potentially with peaty topsoil
- Acid Shallow Well Drained Mineral
- Blanket Peat
- Grey Brown Podzolics / Brown Earths Basic
- Basic Deep Poorly Drained Mineral
- Basic Shallow Poorly Drained Mineral
- Basic Poorly Drained Mineral Soils with Peaty Topsoil
- Basic Shallow Well Drained Mineral
- Cut
- Fen peat
- Lac
- Made
- Beach sand and gravels
- Sere

Associated datasets and digital information objects connected to this resource are available at the EPA GeoPortal managed by Environmental Protection Agency Ireland <http://gis.epa.ie/GetData/Download>

D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd



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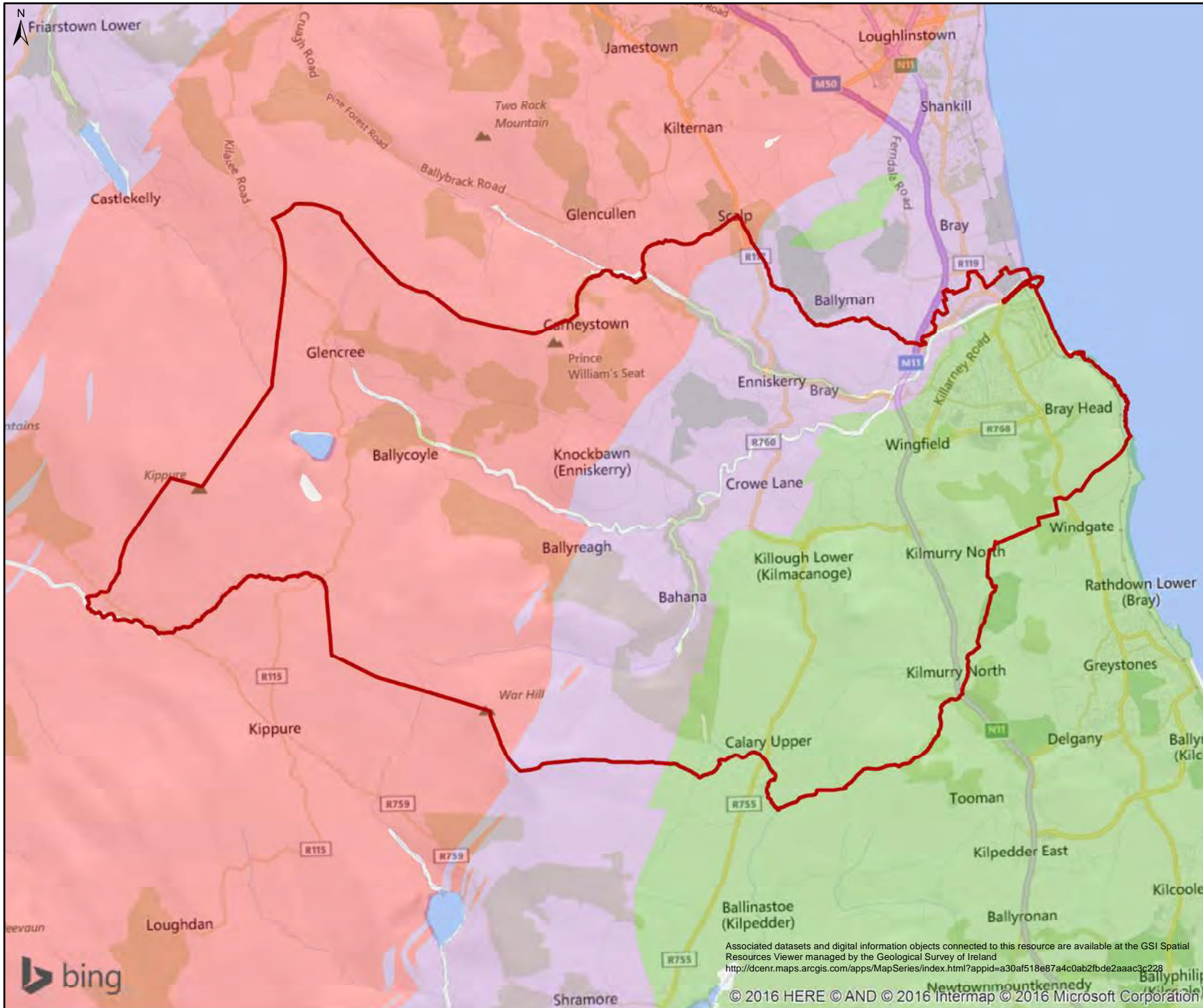
**Soils**

Scale at A4  
**1:100,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
----------------------------	--------------------------------

Drawing No <b>Figure 4.2</b>	Issue <b>D2</b>
---------------------------------	--------------------





**Legend**

- Bray Municipal District
- CM - Cambrian Metasediments
- GII - Granites and other Igneous Intrusive rocks
- OM - Ordovician Metasediments

D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd

Kilometers  
  
 0 0.5 1 2

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Job Title  
**Bray Municipal District LAP 2017-2023**

**Geology**

Scale at A4  
**1:100,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
----------------------------	--------------------------------

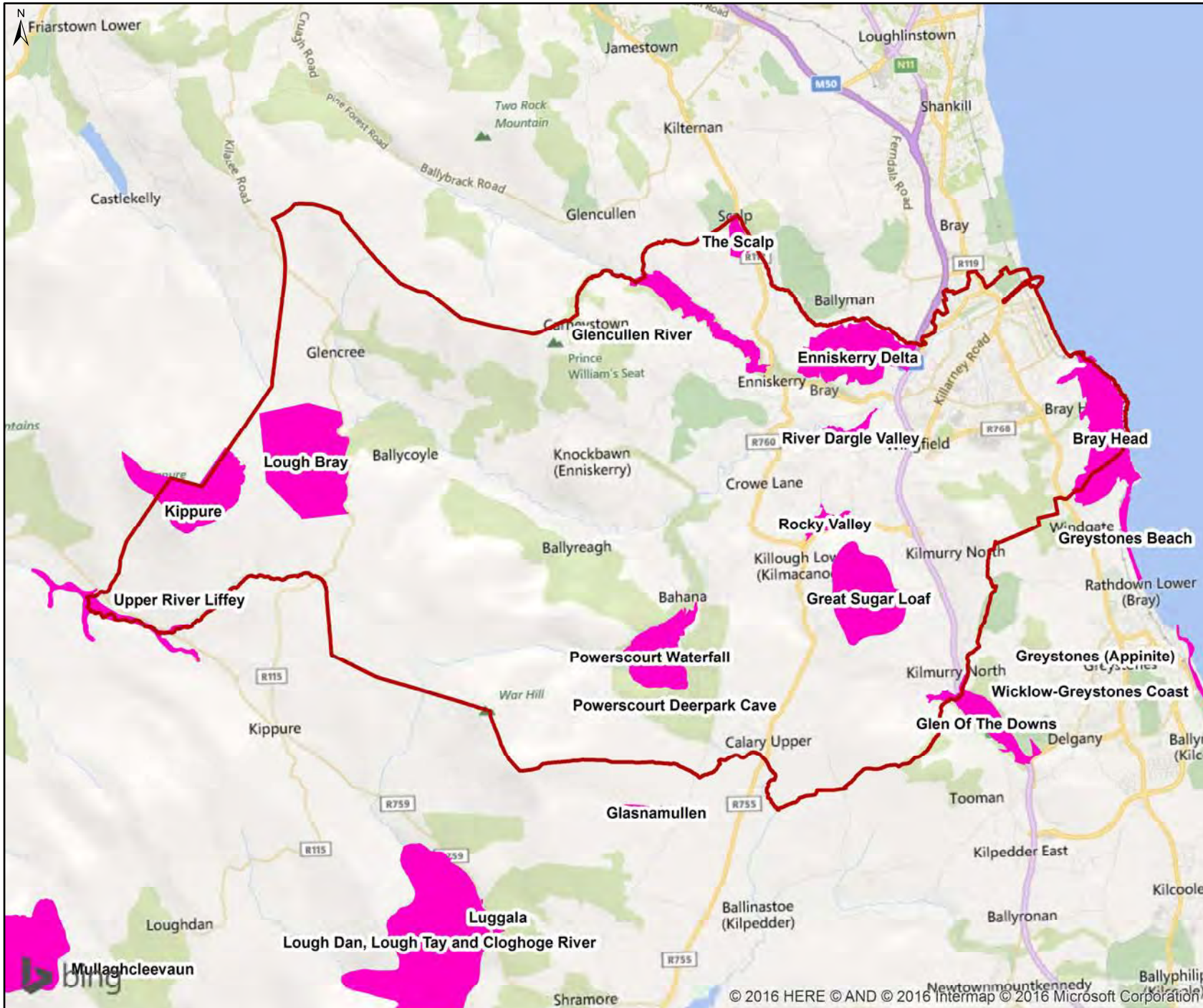
Drawing No  
**Figure 4.3**

Issue  
**D2**

Associated datasets and digital information objects connected to this resource are available at the GSI Spatial Resources Viewer managed by the Geological Survey of Ireland  
<http://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbd2aaac3228>

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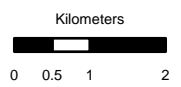


**Legend**

- Bray Municipal District
- Geological Heritage Sites

Associated datasets and digital information objects connected to this resource are available from the Geological Survey of Ireland at [www.gsi.ie](http://www.gsi.ie)

D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd



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Client  
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Job Title  
**Bray Municipal District LAP 2017-2023**

**Geological Heritage**

Scale at A4  
**1:100,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
Drawing No <b>Figure 4.4</b>	Issue <b>D2</b>

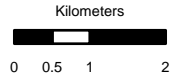




- Legend**
- Bray Municipal District
  - Streams
  - Rivers

Associated datasets and digital information objects connected to this resource are available at the EPA GeoPortal managed by Environmental Protection Agency Ireland <http://gis.epa.ie/GetData/Download>

D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd



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Job Title  
**Bray Municipal District LAP 2017-2023**

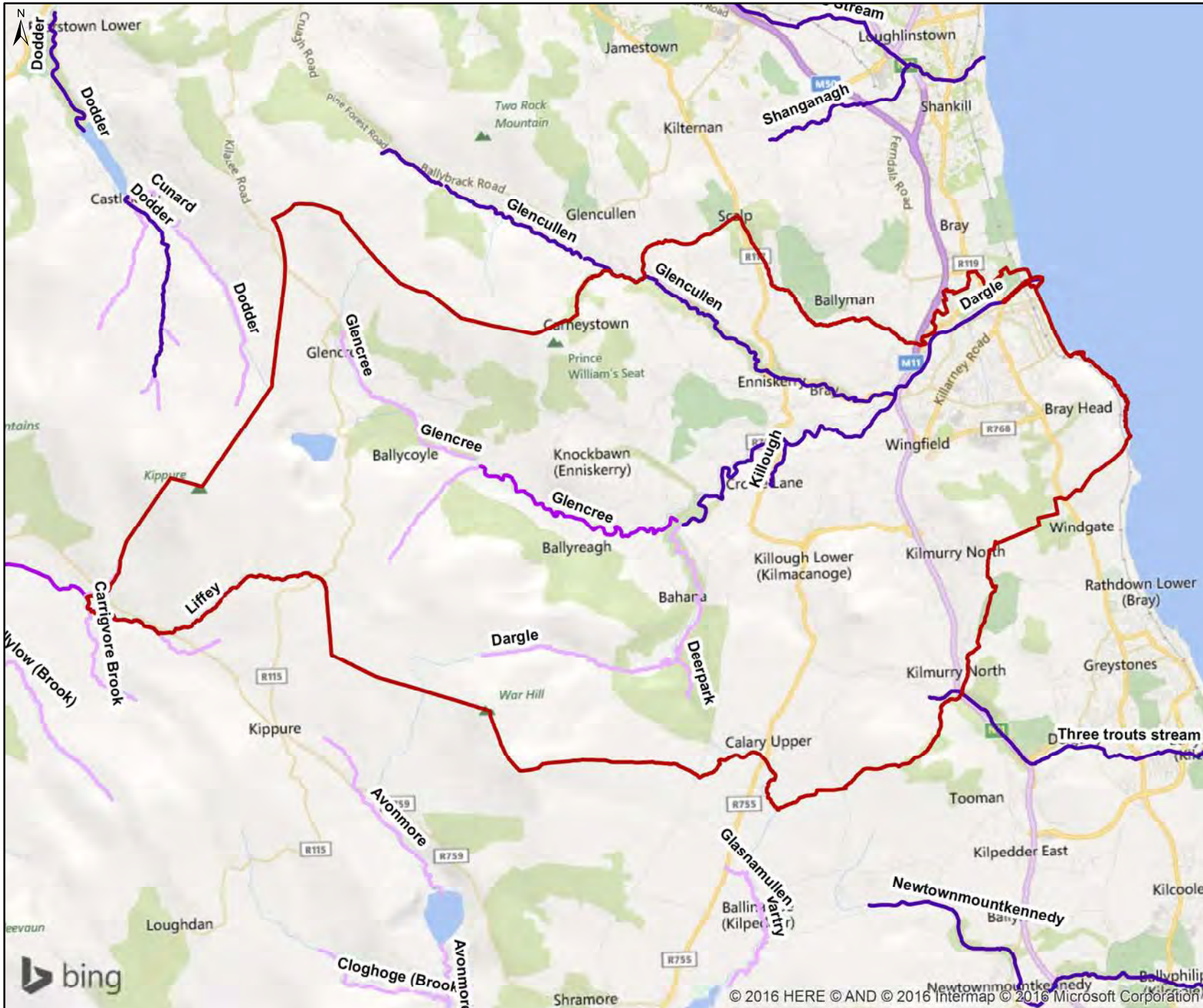
**Surface Water Features**

Scale at A4  
**1:100,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
----------------------------	--------------------------------

Drawing No <b>Figure 4.5</b>	Issue <b>D2</b>
---------------------------------	--------------------





**Legend**

- Bray Municipal District

**WFD Risk**

- 1a At risk of not achieving good status
- 1b Possibly at risk of not achieving good status
- 2a Expected to achieve good status

Associated datasets and digital information objects connected to this resource are available at the EPA GeoPortal managed by Environmental Protection Agency Ireland <http://gis.epa.ie/GetData/Download>

D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd

Kilometers  
0 0.5 1 2

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Job Title  
**Bray Municipal District LAP 2017-2023**

**Water Framework Directive Risk Status for Waterbodies**

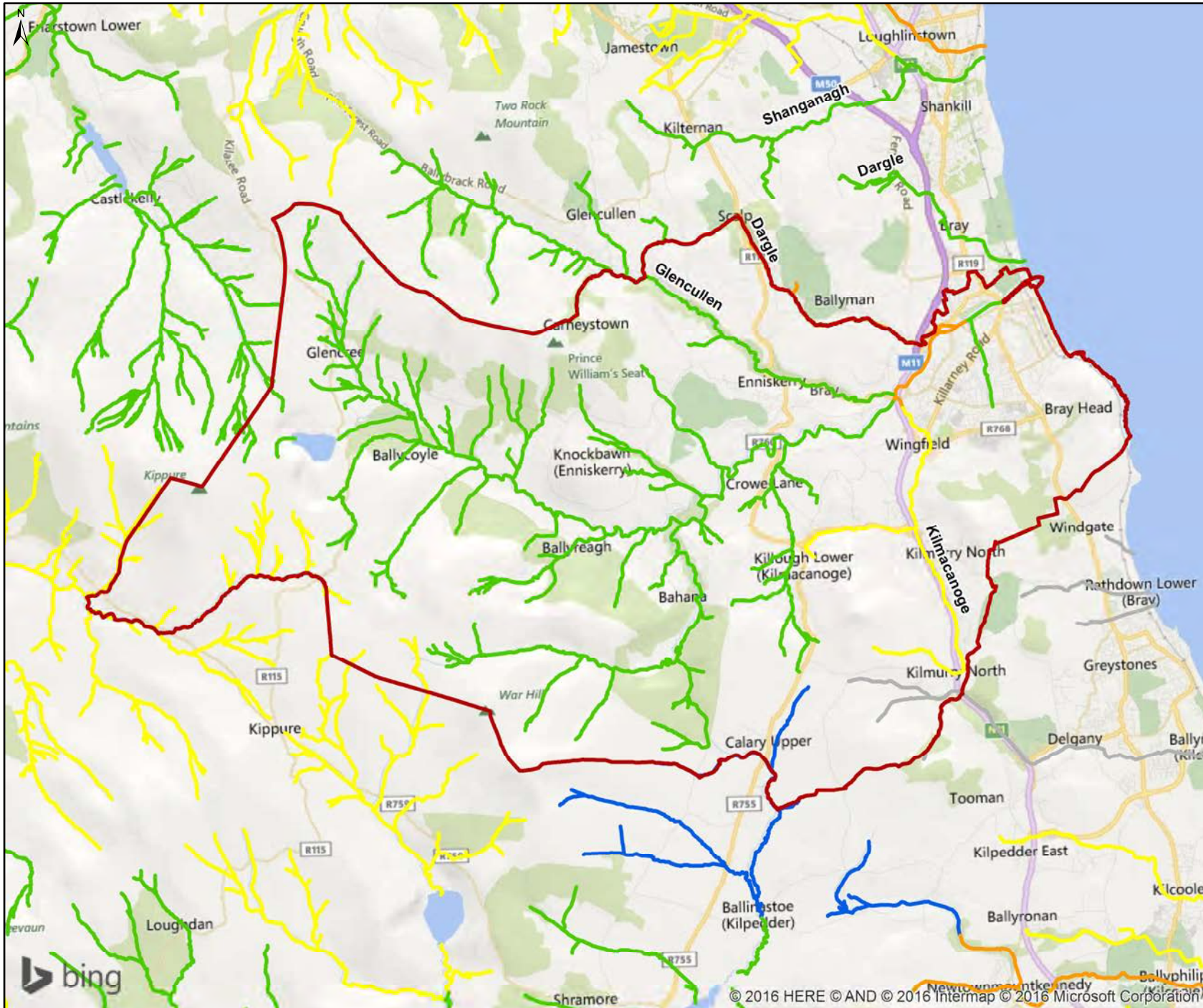
Scale at A4  
**1:100,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
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Drawing No  
**Figure 4.6**

Issue  
**D2**





**Legend**

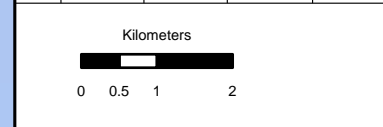
- Bray Municipal District

**WFD Status**

- High
- Good
- Moderate
- Poor
- Bad
- Unassigned

Associated datasets and digital information objects connected to this resource are available at the EPA GeoPortal managed by Environmental Protection Agency Ireland <http://gis.epa.ie/GetData/Download>

D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd



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Client  
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Job Title  
**Bray Municipal District LAP 2017-2023**

**Water Framework Directive Status for Rivers and Lakes**

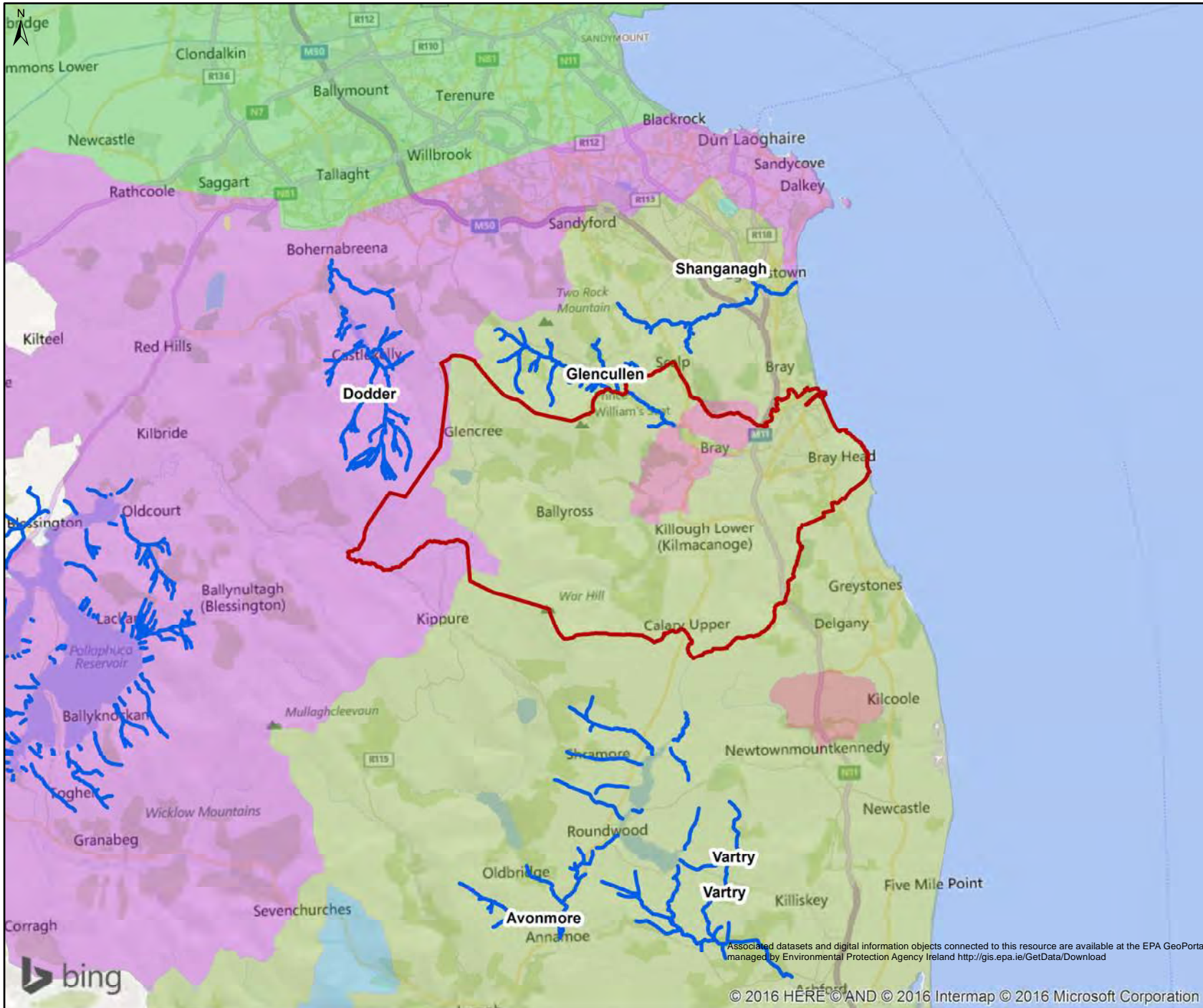
Scale at A4  
**1:100,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
----------------------------	--------------------------------

Drawing No  
**Figure 4.7**

Issue  
**D2**





**Legend**

- Bray Municipal District
- Rivers for Drinking Water

**Groundwater for Drinking Water**

- Dublin
- Enniskerry Gravels
- Historic Mine (Glendalough)
- Historic Waste Facility (S22-02748)
- Historic Waste Facility (S22-02779)
- Industrial Facility (P0019-02)
- Kilcoole Gravels
- Kilcullen
- Wicklow

D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd

Kilometers

0 1.25 2.5 5

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Client  
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Job Title  
**Bray Municipal District LAP 2017-2023**

**Drinking Water**

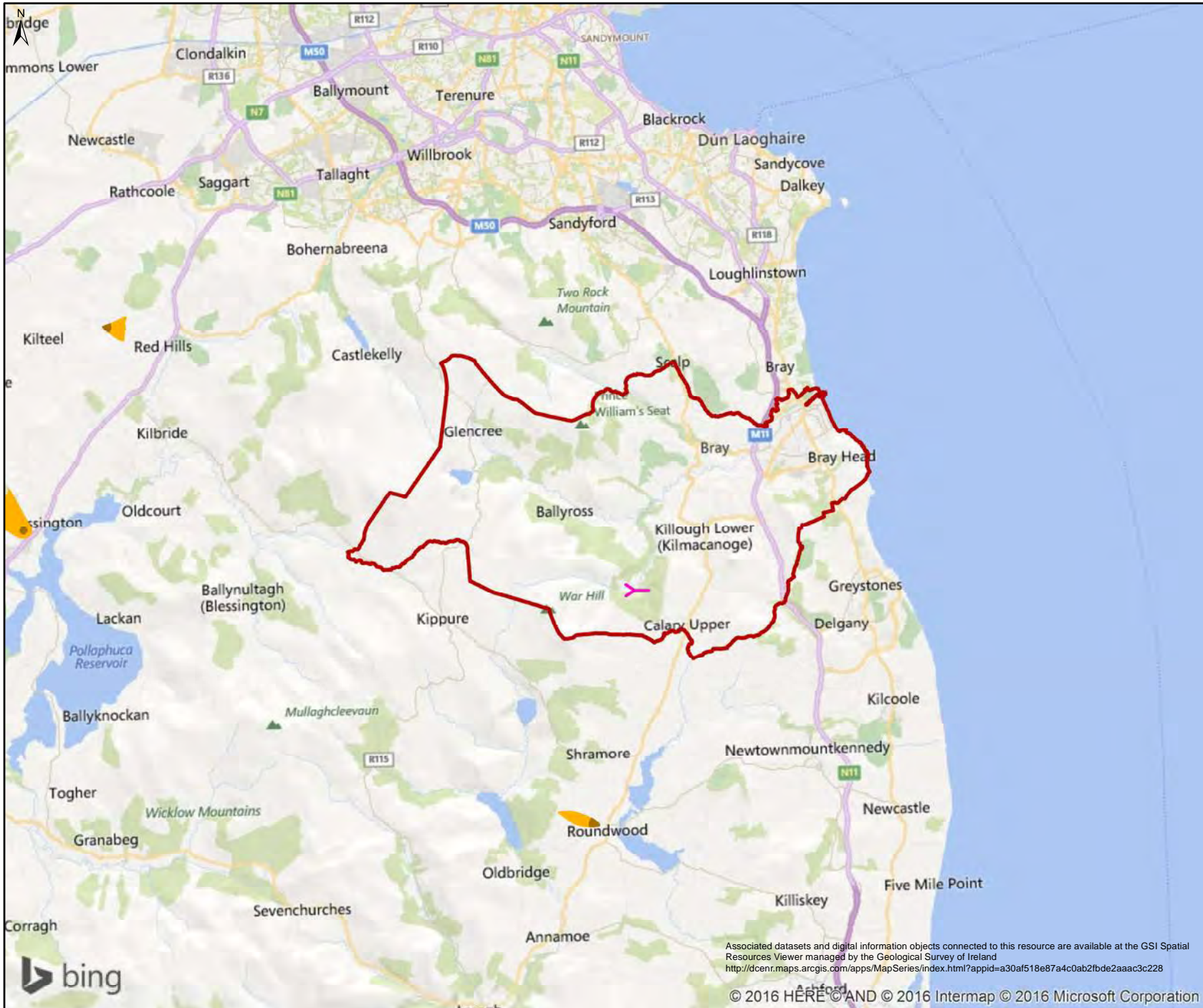
Scale at A4  
**1:200,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
----------------------------	--------------------------------

Drawing No <b>Figure 4.8</b>	Issue <b>D2</b>
---------------------------------	--------------------

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**Legend**

- Bray Municipal District
- Karst Features**
  - Cave
- Source Protection Areas**
  - SI - Inner Protection Zone
  - SO - Outer Protection Zone

D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd

Kilometers  
0 1.25 2.5 5

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Job Title  
**Bray Municipal District LAP 2017-2023**

**Groundwater Features and Source Protection Zones**

Scale at A4  
**1:200,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
----------------------------	--------------------------------

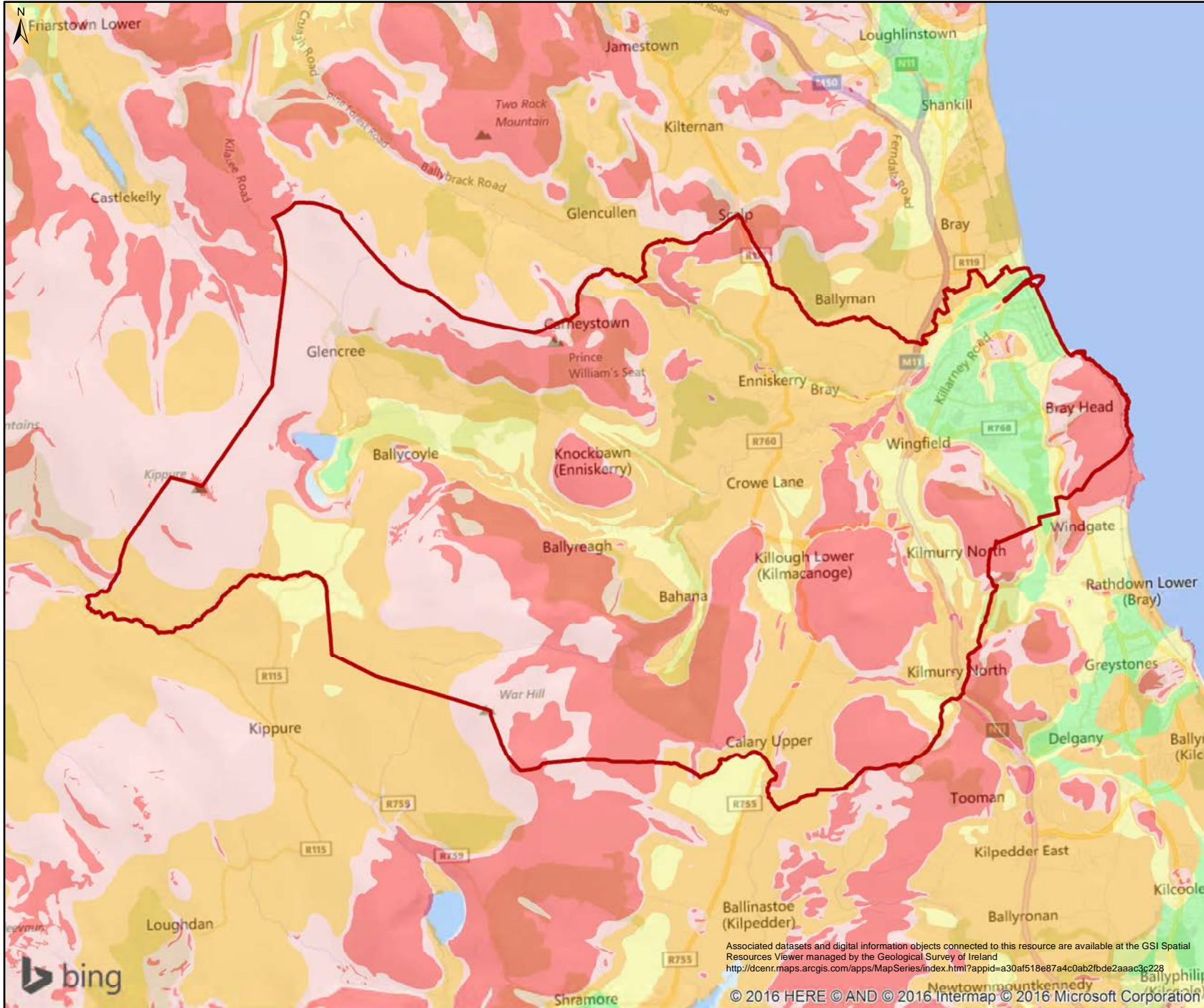
Drawing No  
**Figure 4.9**

Issue  
**D2**

Associated datasets and digital information objects connected to this resource are available at the GSI Spatial Resources Viewer managed by the Geological Survey of Ireland  
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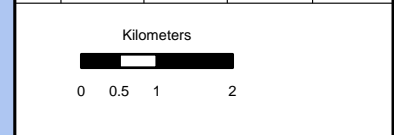
**Legend**

- Bray Municipal District

**Groundwater Vulnerability**

- X - Rock at or near Surface or Karst
- E - Extreme
- H - High
- L - Low
- M - Moderate
- Water

D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd



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Job Title  
**Bray Municipal District LAP 2017-2023**

**Groundwater Vulnerability**

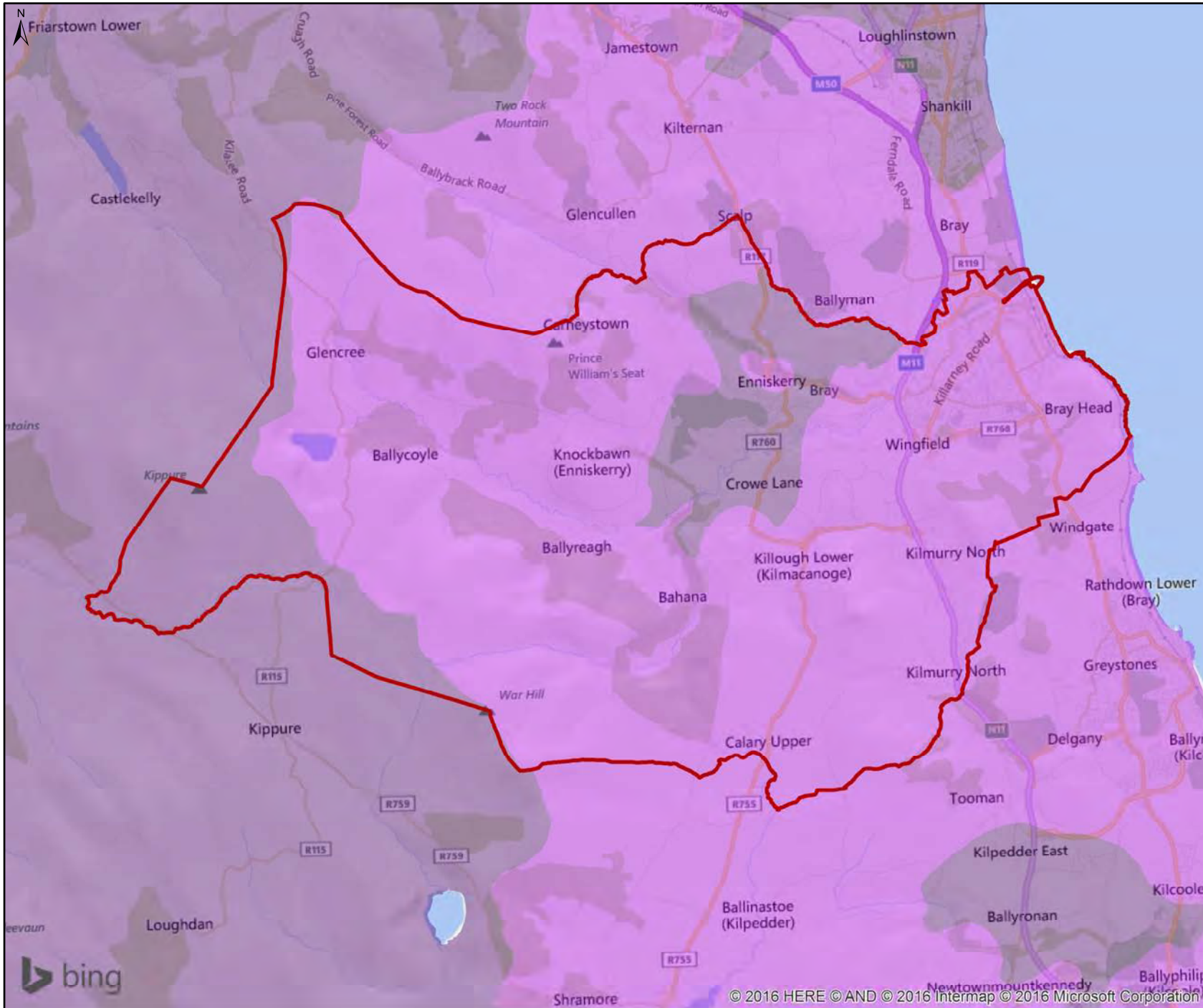
Scale at A4  
**1:100,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
----------------------------	--------------------------------

Drawing No  
**Figure 4.10**

Issue  
**D2**

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**Legend**

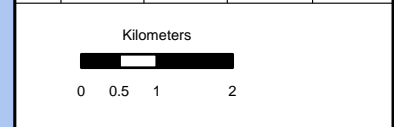
Bray Municipal District

**WFD Groundwater Waterbody Risk Scores**

- 1a - At risk of not achieving good status
- 1b - Possibly at risk of not achieving good status
- 2a - Expected to achieve good status
- 2b - Strongly expected to achieve good status

Associated datasets and digital information objects connected to this resource are available at the EPA GeoPortal managed by Environmental Protection Agency Ireland <http://gis.epa.ie/GetData/Download>

D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd



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Job Title  
**Bray Municipal District LAP 2017-2023**

WFD Groundwater Risk

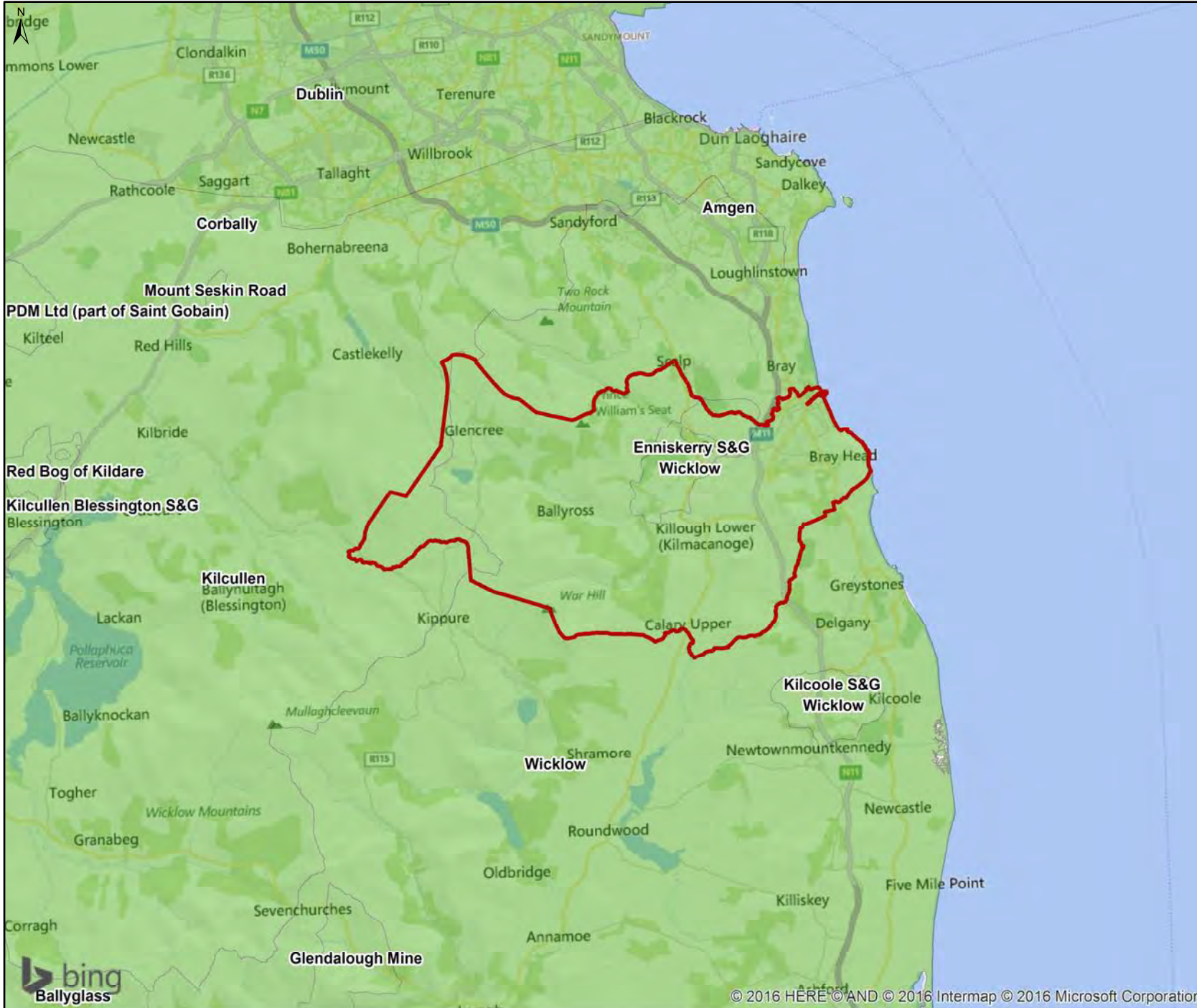
Scale at A4  
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Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
----------------------------	--------------------------------

Drawing No  
**Figure 4.11**

Issue  
**D2**





**Legend**

Bray Municipal District

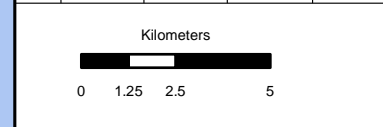
**WFD Groundwater Status**

Good

Poor

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D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd



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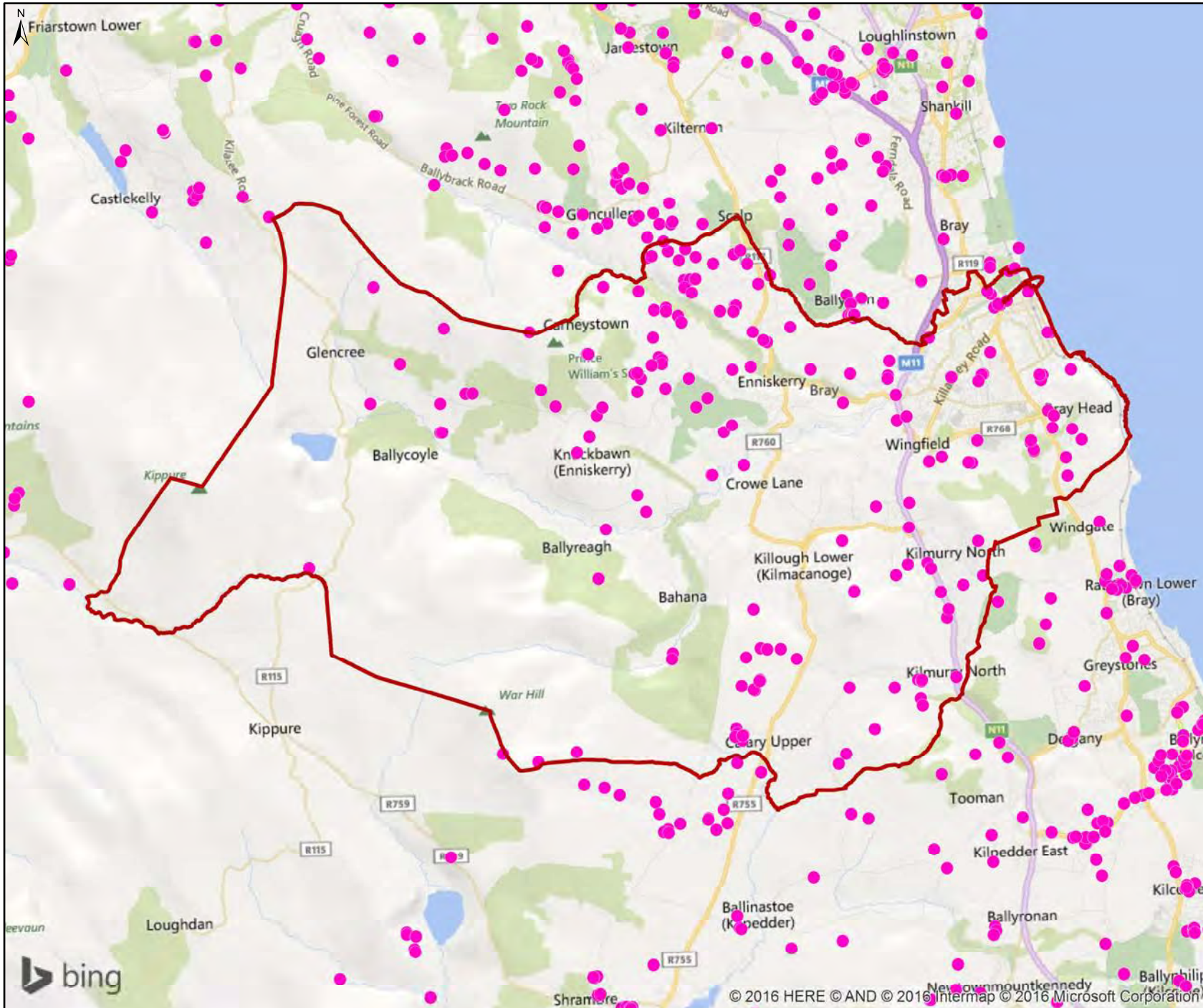
**WFD Groundwater Status**

Scale at A4  
**1:200,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
----------------------------	--------------------------------

Drawing No <b>Figure 4.12</b>	Issue <b>D2</b>
----------------------------------	--------------------





**Legend**

- Bray Municipal District
- National Monuments

Associated datasets and digital information objects connected to this resource are available at the Historic Environment Viewer Managed by Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs  
<http://webgis.archaeology.ie/historicenvironment/>

D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd

Kilometers  

 0 0.5 1 2

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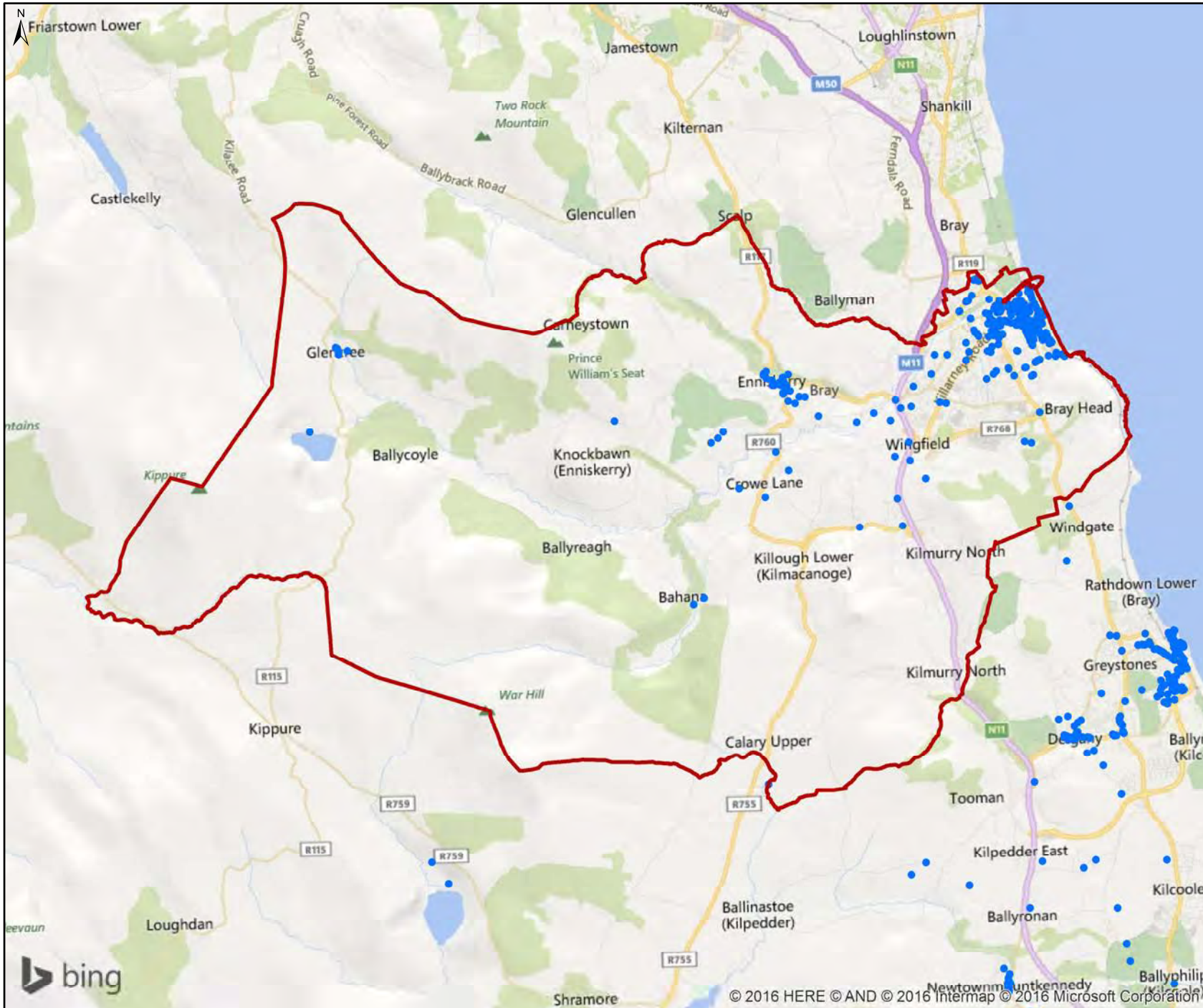
Job Title  
**Bray Municipal District LAP 2017-2023**

**Recorded Monuments**

Scale at A4  
**1:100,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
Drawing No <b>Figure 4.13</b>	Issue <b>D2</b>





**Legend**

- Bray Municipal District
- Protected Structures

Associated datasets and digital information objects connected to this resource are available at the Historic Environment Viewer Managed by Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs  
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D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd

Kilometers  
  
 0 0.5 1 2

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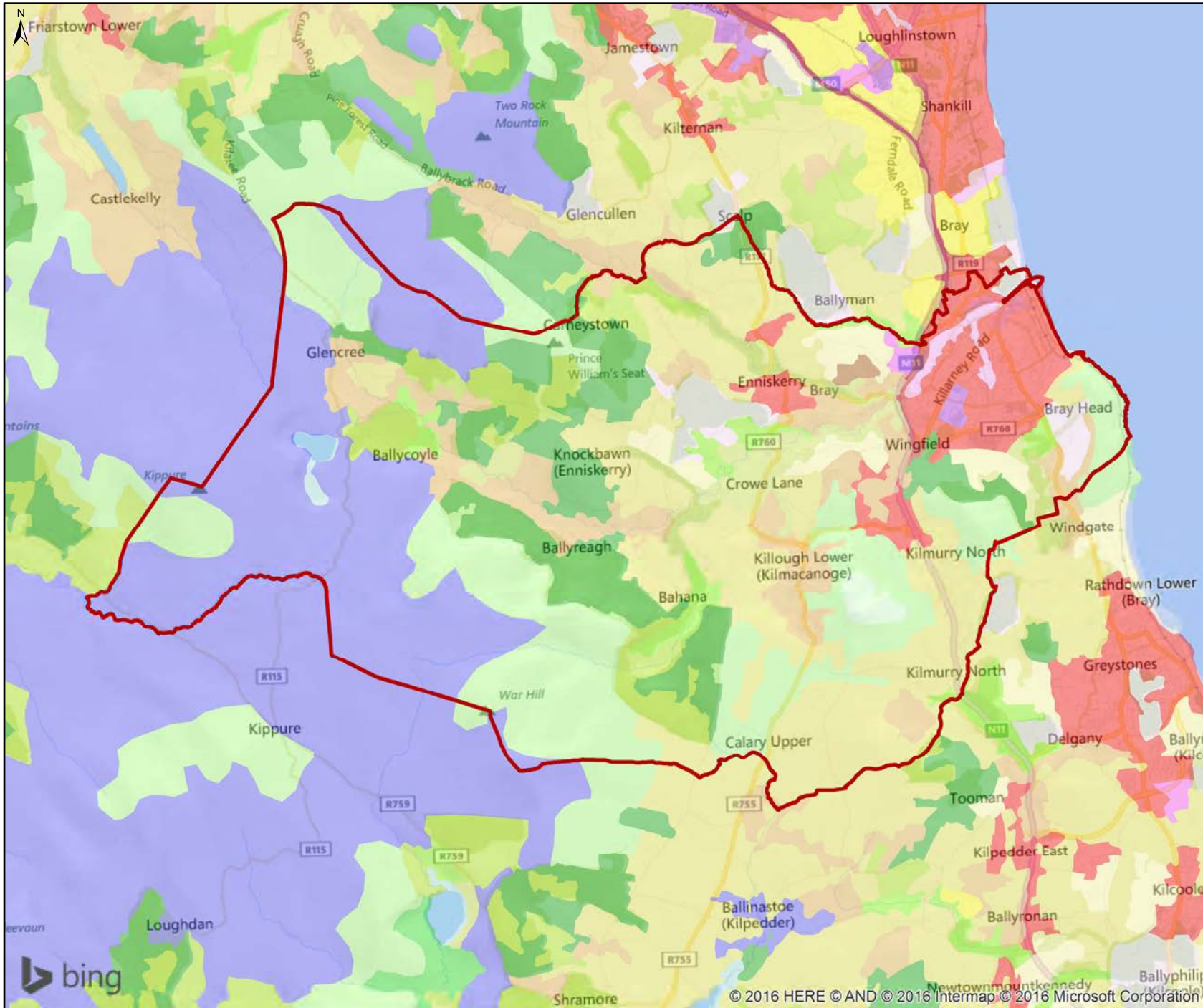
Job Title  
**Bray Municipal District LAP 2017-2023**

**Protected Structures**

Scale at A4  
**1:100,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
Drawing No <b>Figure 4.14</b>	Issue <b>D2</b>



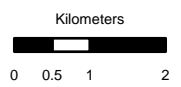


**Legend**

Bray Municipal District	243 Land principally occupied by agriculture with areas of natural vegetation
111 Continuous urban fabric	311 Broad-leaved forest
112 Discontinuous urban fabric	312 Coniferous forest
121 Industrial or commercial units	313 Mixed forest
122 Road and rail networks	321 Natural grassland
132 Dump	322 Moors and heaths
133 Construction sites	324 Transitional woodland scrub
141 Green urban sites	331 Beaches dunes sand
142 Sport and leisure facilities	333 Sparsely vegetated areas
211 Non-irrigated land	412 Peat bogs
231 Pastures	512 Water bodies
242 Complex cultivation patterns	

Associated datasets and digital information objects connected to this resource are available at the EPA GeoPortal managed by Environmental Protection Agency Ireland <http://gis.epa.ie/GetData/Download>

D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd



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Job Title  
**Bray Municipal District LAP 2017-2023**

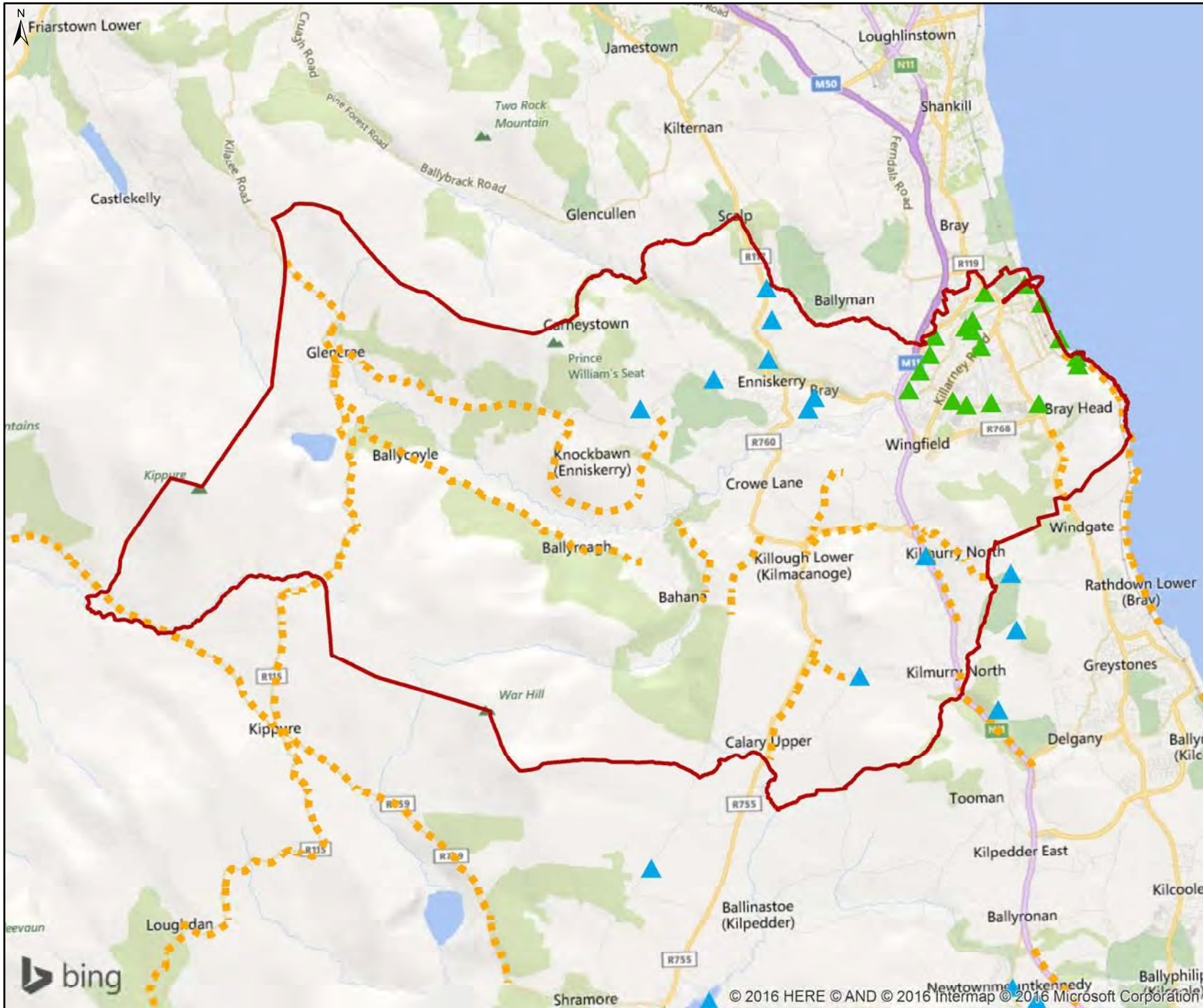
**CORINE Landcover**

Scale at A4  
**1:100,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
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Drawing No <b>Figure 4.15</b>	Issue <b>D2</b>
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**Legend**

- Bray Municipal District
- ▲ Views Bray Town
- ▲ Views County Development Plan 2016 to 2022
- Prospects County Development Plan 2016 to 2022

Associated datasets and digital information objects connected to this resource are provided by Wicklow County Council

D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd

Kilometers  
  
 0 0.5 1 2

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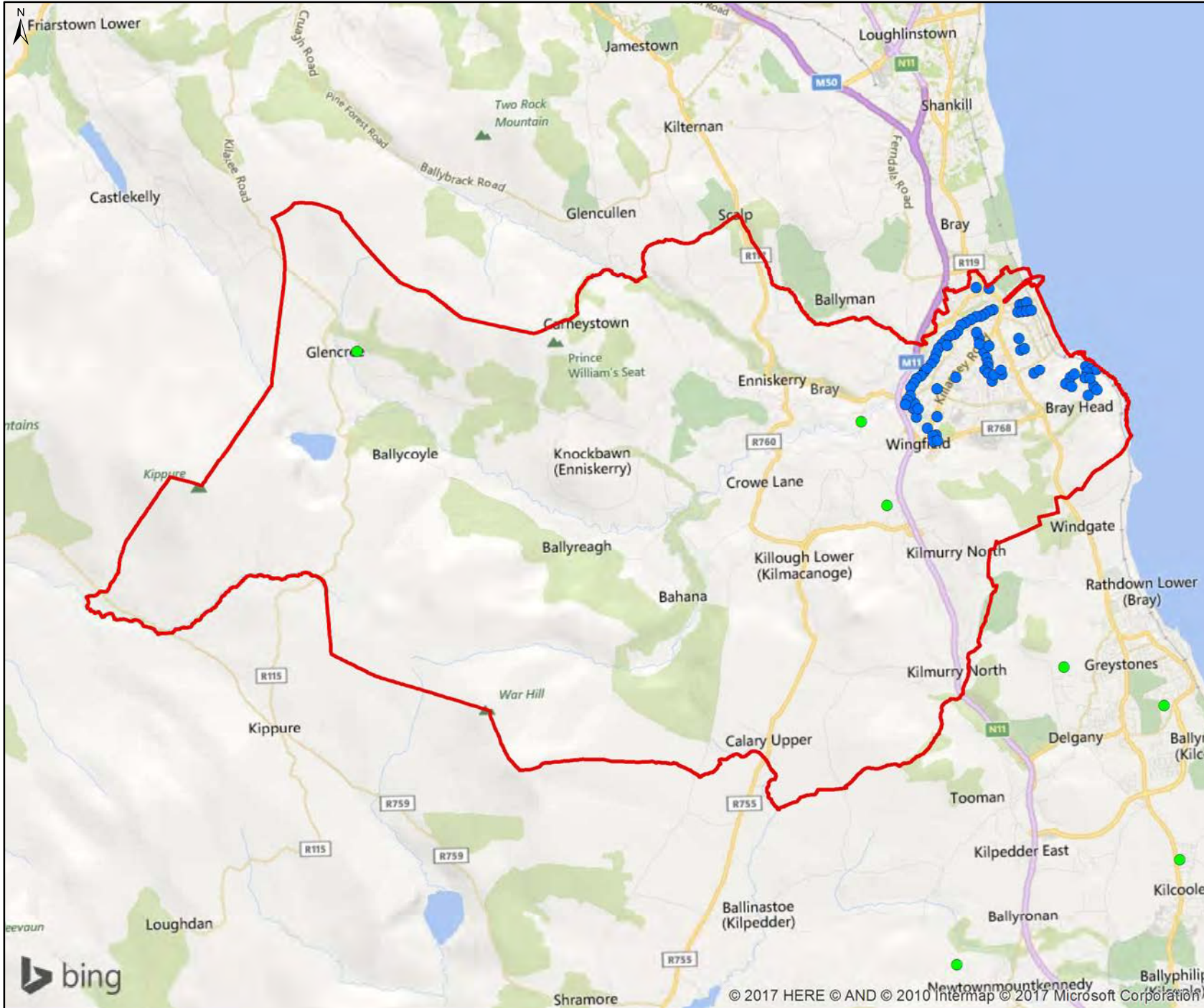
Client  
**Wicklow County Council**

Job Title  
**Bray Municipal District LAP 2017-2023**

**Protected Views and Prospects**

Scale at A4  
**1:100,000**

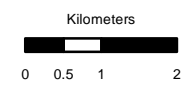
Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
Drawing No <b>Figure 4.16</b>	Issue <b>D2</b>



- Legend**
- Bray Municipal District
  - Tree Preservation Orders CDP 2016-2022
  - Tree Preservation Orders

Associated datasets and digital information objects connected to this resource are provided by Wicklow County Council

D4	2017-07-28	LD	SW	SW
Issue	Date	By	Chkd	Appd



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Client  
**Wicklow County Council**

Job Title  
**Bray Municipal District LAP 2017-2023**

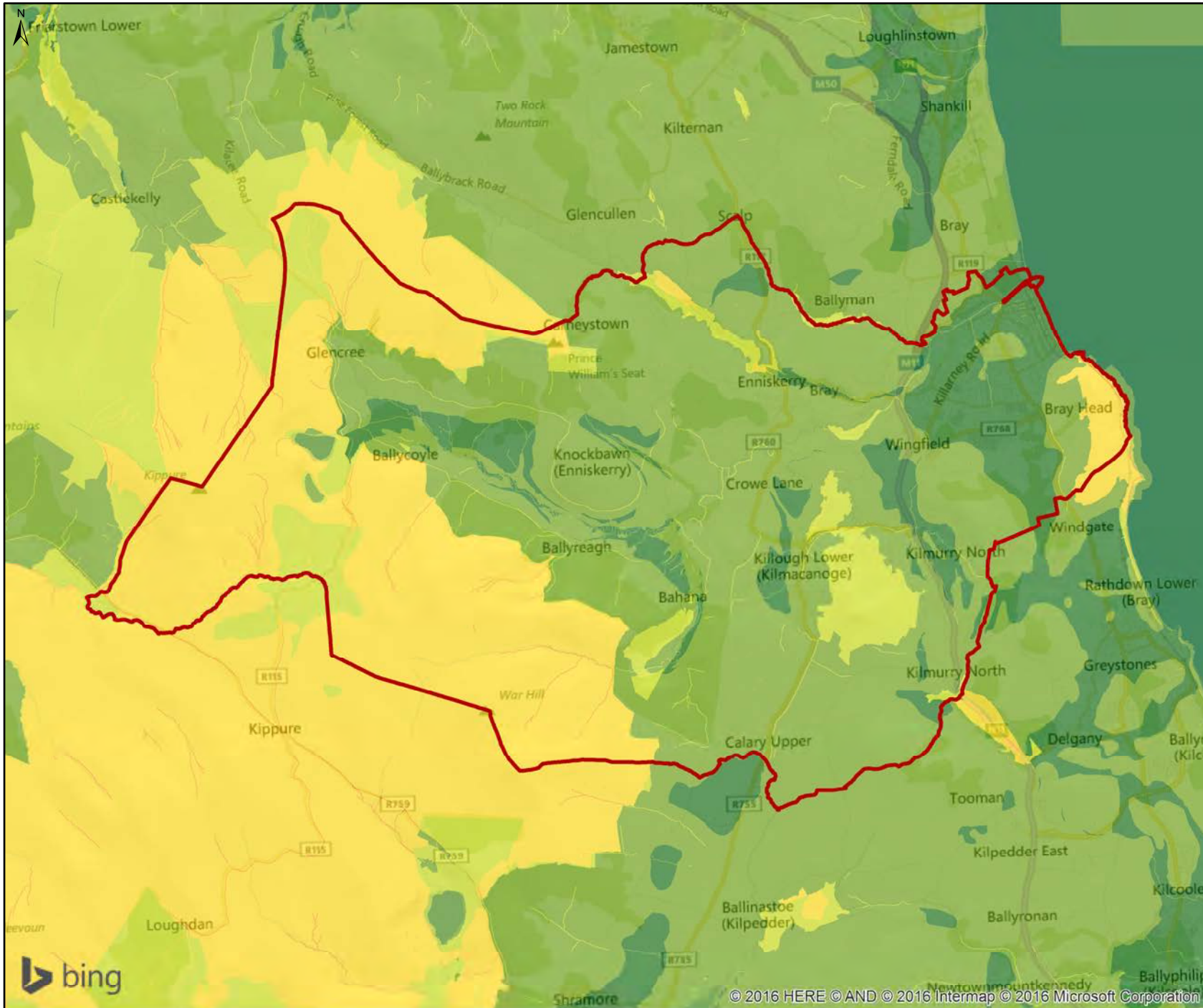
**Tree Protection Orders**

Scale at A4  
**1:100,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
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Drawing No <b>Figure 4.17</b>	Issue <b>D4</b>
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**Legend**

Bray Municipal District

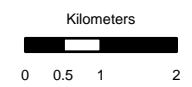
**Sensitivity Overlay Classes**

- 0 - 5 No Sensitivity
- 10 - 15 Low Sensitivity
- 20 - 25 Moderate Sensitivity
- 30 - 35 Elevated Sensitivity
- 40 - 45 High Sensitivity
- 50 - 60 Extreme Sensitivity

The following datasets are included in the Sensitivity Map:

- Special Areas of Conservation
- Special Protection Areas
- Potential National Heritage Areas
- Surface Water WFD Status
- Groundwater WFD Status
- Recorded Monuments
- Protected Structures
- Protected Views and Prospects
- Groundwater Vulnerability

D2	2016-12-05	LD	SW	SW
Issue	Date	By	Chkd	Appd



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Client  
**Wicklow County Council**

Job Title  
**Bray Municipal District LAP 2017-2023**

**Sensitivity Mapping**

Scale at A4  
**1:100,000**

Job No <b>251896-00</b>	Drawing Status <b>Draft</b>
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Drawing No <b>Figure 4.18</b>	Issue <b>D2</b>
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