

Kildare County Council

**Proposed Amendment No. 1 to the
Maynooth Local Area Plan 2013-
2019**

Strategic Environmental
Assessment- Environmental Report

Ref/1

Issue | 14 June 2018

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.

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1 Non-Technical Summary

NTS1: Introduction

This is a non-technical summary of the Environmental Report that has been prepared as part of the Strategic Environmental Assessment of the Draft Proposed Amendment No. 1 to Maynooth Local Area Plan 2013 - 2019. The document has been prepared in accordance with national and EU legislation. It draws attention to the most important issues and provides information on other significant topics. Any topic which causes concern can be followed in greater detail in the main 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 assessment included:

- The Regional Planning Guidelines for the Greater Dublin Area 2010 - 2022;
- Greater Dublin Area Transportation Study 2016 - 2035;
- Kildare County Development Plan 2017 - 2023;
- County Kildare Heritage Plan 2005 – 2011; and
- County Kildare Biodiversity Action Plan 2009 - 2014.

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

NTS2: Proposed Amendment No.1 to Maynooth Local Area Plan 2013 - 2019

A key aim of the Proposed Amendment No.1 is to align the Maynooth Local Area Plan 2013 - 2019 (LAP) with the 'Core Strategy' of the Kildare County Development Plan 2017 - 2023 (CDP) and reflect the characteristics. This includes amending zoning of land and the LAP boundary to facilitate additional housing units and meet the current housing demand, particularly lands in the south east of the LAP, an area called Railpark.

The LAP will be aligned with the CDP through the Proposed Amendment No.1 by making the following amendments:

- (i) Amend the Local Area Plan boundary to the east of the town on Map No.'s 1, 2, 3, 4, 5 and 6;
- (ii) Amend zoning on Map No. 6:
 - a. to the east of the Local Area Plan from 'H4: Office' to 'C: New Residential' (2.9ha);
 - b. to the south east of the Local Area Plan from 'I: Agricultural' to 'C: New Residential' (29.6ha);
 - c. to the south east of the Local Area Plan from 'I Agricultural' to 'B Existing Residential and Infill'; and
 - d. for the additional lands within the revised LAP boundary to be zoned as 'I: Agricultural' (13ha).

- (iii) Insert section 7.1.4: 'Key Development Area: Railpark' relating to the future strategy for the development of these lands;
- (iv) Amend/Add Roads Objectives:
 - a. TRO 2(c) to provide for an alternative junction point on the Leixlip Road;
 - b. TRO 3(j) to allow for potential re-alignment of part of Leixlip Road;
 - c. TRO 8 which relates to the provision of Vulnerable Road User permeability;
- (v) Amend Pedestrian and Cycle Networks objective PCO 4;
- (vi) Amend Map No. 1 (Roads Objectives Map);
- (vii) Amend Table 17: Land Use Zoning Matrix to permit 'childcare / crèche / playschool' uses to be 'Open for Consideration' in land zoned as 'F: Open Space & Amenity'; and
- (viii) A number of consequential changes arising to provide for these proposed amendments.

NTS3: SEA Methodology

The objective of the Strategic Environmental Assessment (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' (Article 1 SEA Directive). 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 SEA methodology is based on legislative requirements and EPA guidance and will ensure compliance with the SEA Directive and associated legislation. The EPA's SEA Pack (Version 16/03/2018) was also used as a source of information during the SEA process.

NTS4: Current State of the Environment

The assessment of the plan with respect to the current Environmental Baseline is the principal task of the SEA process. Consequently, this baseline description must be cognisant of the local level nature of the plan and the pressures and interrelationships between environmental topics.

The environmental baseline provides an overview of the existing conditions in the Draft Proposed Amendment area relevant to the plan and covers the following environmental topics:

- Biodiversity
- Population and Human Health
- Soils and Geology
- Water
- Air, Noise and Climate
- Archaeological, Architectural and Cultural Heritage
- Landscape and Visual

- **Material Assets**

Historically, Maynooth is a town characterised as an educational centre with the establishment of Maynooth University and St Patrick's Seminary.

Today it is also a retail and commercial centre, with robust employment and enterprise opportunities, a strong community spirit and quality built and natural heritage. Its proximity and connection to the national road network coupled its strategic location within the Greater Dublin Area (GDA) creates an attractive location for economic development in the form of significant employers and small/medium enterprise. Maynooth is also identified at a regional level as a location that can accommodate additional residential development.

According to the EPA's State of the Environment Report, 2016, Ireland's environment remains in a good condition, although there are a number of key challenges in the coming years. The report identified four priority challenges for the environment, which comprise; valuing and protecting our natural environment; building a resource-efficient low-carbon economy; putting the environment at the centre of our decision making and implementing environmental legislation.

NTS5: Objectives, Targets and Indicators

The SEA is designed to assess the potential environmental impact of the Proposed Amendment No. 1 and its associated policies and objectives against the environmental baselines established.

The plan policies and objectives are assessed against a range of established environmental objectives and targets.

Indicators that are recommended in the SEA are utilised over the lifetime of the Draft Proposed Amendment No. 1 to quantify the potential level of impact that the policies and objectives are likely to have on the environment. This enables the measurement of the success of the policies in promoting the sustainable development of the area.

NTS6: Assessment of Likely Significant Effects

The environmental impacts of the Draft Proposed Amendment No. 1, policies and objectives were assessed with respect to the existing environmental baseline and environmental objectives.

As the policies included in the Draft Proposed Amendment No. 1 have been designed to promote sustainability and to protect the environment, the majority of policies are expected to have positive impacts when assessed against the environmental objectives. A matrix was prepared to examine these potential impacts.

NTS7: Consideration of Alternatives

Alternatives were considered in the preparation of the Draft Proposed Amendment No. 1. These options primarily related to the configuration of amended zoning of lands in the east of Maynooth LAP.

Each scenario was assessed against the environmental aspects and a preferred scenario from an environmental perspective determined.

NTS8 Mitigation Measures

This Environmental Report has highlighted some potential negative environmental impacts that may arise from the implementation of the Draft Proposed Amendment No.1 in relation to new objectives, zonings and land use designations. A number of mitigation measures have been identified to prevent, reduce and as fully as possible offset any potential significant adverse impacts on the environment of implementing the Proposed Amendment No. 1.

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

NTS9: SEA 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 was 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 Draft Proposed Amendment No.1.

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

Kildare County Council, as the planning authority, 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.

2 Introduction

Arup was appointed by Kildare County Council to carry out a Strategic Environmental Assessment (SEA) of the Proposed Amendment No.1 to Maynooth Local Area Plan 2013 - 2019 (herein referred to as the “Proposed Amendment No.1”).

This SEA Environmental Report presents the findings of the environmental assessment of the likely significant impacts on the environment as a result of the Proposed Amendment No. 1.

A Scoping Report was previously prepared which provided information to allow consultation with defined statutory bodies on the scope and level of detail to be considered in the environmental assessment. Any issues or concerns raised during the scoping process or during the consultation period for the Proposed Amendment has been incorporated into this report.

3 Proposed Amendment No.1 to the Maynooth Local Area Plan 2013 - 2019

3.1 Introduction

The Maynooth Local Areas Plan 2013 - 2019 (LAP) as amended by the Proposed Amendment No.1, provides the main public statement of planning policies and objectives for Maynooth. **Figure 2.1** in **Appendix B** indicates the amended LAP boundary. The term “amended LAP boundary” used in this report, refers to LAP boundary that is proposed under the Proposed Amendment No.1. The proposed boundary amendment includes the addition of lands at Railpark.

The policies and objectives are critical in determining the appropriate location and form of different types of development as the LAP is the primary statutory land use policy framework against which planning applications are assessed.

The objectives of the LAP are also used by Kildare County Council to guide their activities and to indicate priority areas for action and investment by the Council such as focusing on attracting employment into the town or enhancing the town as a centre for tourism.

The LAP is a key document for setting out a vision for how Maynooth should develop over the LAP lifetime (2013 - 2019) and beyond. The plan must be consistent with the objectives set out in the following documents:

- The Regional Planning Guidelines for the Greater Dublin Area 2010-2022;
- Greater Dublin Area Transportation Study 2016 - 2035;
- Kildare County Development Plan 2017 – 2023;
- Kildare Local Economic and Community Plan 2016 - 2021;
- County Kildare Heritage Plan 2005 - 2011; and
- County Kildare Biodiversity Action Plan 2009 - 2014.

3.2 Legislative Context

Under Article 18 of the Planning and Development Act 2000, as amended, a LAP will cease to have effect where it conflicts with any provisions of the development plan.

Article 18 (4) and (5) state the following:

- (4)(b) *A local area plan may remain in force in accordance with paragraph (a) notwithstanding the variation of a development plan or the making of a new development plan affecting the area to which the local area plan relates except that, where any provision of a local area plan conflicts with the provisions of the development plan as varied or the new development plan, the provision of the local area plan shall cease to have any effect.*
- (5) *A planning authority may at any time amend or revoke a local area plan.*

Following on from the Article 18, Article 19 (2) specifies that the LAP shall be consistent with the development plan

A local area plan shall be consistent with the objectives of the development plan and shall consist of a written statement and a plan or plans indicating the objectives in such detail as may be determined by the planning authority for the proper planning and sustainable development of the area to which it applies, including detail on community facilities and amenities and on standards for the design of developments and structures.

3.3 Aim of the Proposed Amendment

The aims of the Proposed Amendment No.1 are threefold:

- (i) to further align the Maynooth LAP with the ‘Core Strategy’ of the Kildare County Development Plan 2017 - 2023 (CDP);
- (ii) To maximise the benefit accruing from current funding and resource opportunities under LIHAF, and;
- (iii) To align the land use zoning matrix within the Maynooth Local Area Plan with other adopted local area plans within County Kildare and the Kildare County Development Plan 2017 - 2023.

As presented in Section 3.2 above the LAP must be consistent with the CDP. The Maynooth LAP 2013 - 2019 was adopted in August 2013 and had been prepared to align with the CDP adopted at that time (CDP 2011 - 2017). During the lifetime of the LAP, the CDP was updated for the 2017 - 2023 period, and with it the Core Strategy which incorporated preliminary population and household figures from Census 2016 (CSO July 2016). This CDP was adopted in February 2017.

Therefore, the current LAP 2013-2019 ceases to be aligned with the current CDP 2017 - 2023 and Core Strategy and is being amended for this reason.

3.4 Background

The Core Strategy of CDP 2017, in line with the Regional Planning Guidelines projected Maynooth to accommodate 10.9% of the residential unit growth for the county over the lifetime of the CDP. This represents an increase in the housing unit target for Maynooth since the last CDP (2011-2017) to 3,542 residential housing units, an increase of 1,179 residential housing units since the last CDP (2011-2017). Therefore, the Maynooth LAP is being updated to further align the CDP Core Strategy with the LAP through the Proposed Amendment No.1.

3.5 Summary of the Proposed Amendment No.1

The following amendments are proposed:

- (i) Amend the Local Area Plan boundary to the east of the town on Map No.'s 1, 2, 3, 4, 5 and 6.
- (ii) Amend zoning on Map No. 6:
 - a. to the east of the Local Area Plan from 'H4: Office' to 'C: New Residential' (2.9ha);
 - b. to the south east of the Local Area Plan from 'I: Agricultural' to 'C: New Residential' (29.6ha);
 - c. to the south east of the Local Area Plan from 'I Agricultural ' to 'B Existing Residential and Infill'; and
 - d. for the additional lands within the revised LAP boundary to be zoned as 'I: Agricultural' (13ha).
- (iii) Insert section 7.1.4: 'Key Development Area: Railpark' relating to the future strategy for the development of these lands;
- (iv) Amend / Add Roads Objectives:
 - a. TRO 2(c) to provide for an alternative junction point on the Leixlip Road;
 - b. TRO 3(j) to allow for potential re-alignment of part of Leixlip Road;
 - c. TRO 8 which relates to the provision of Vulnerable Road User permeability.
- (v) Amend Pedestrian and Cycle Networks objective PCO 4;
- (vi) Amend Map No. 1 (Roads Objectives Map);
- (vii) Amend Table 17: Land Use Zoning Matrix to permit 'childcare / crèche / playschool' uses to be 'Open for Consideration' in land zoned as 'F: Open Space & Amenity'; and
- (viii) A number of consequential changes arising to provide for these proposed amendments.

Table 1 describes the activities associated with Proposed Amendment.

Table 1: Proposed Amendment No.1.

Activities associated with the Proposed Amendment No.1	
(i)	<p>Amend the Local Area Plan boundary to the east of the town on Map No's 1, 2, 3, 4, 5 and 6;</p> <p>Additional un-zoned lands to the east of Myanooth town to be included into the Maynooth Local Area Plan boundary. These lands are to be zoned as 'I – Agriculture' (see (ii) c).</p>
(ii)	<p>Amend zoning on Map No. 6:</p> <ul style="list-style-type: none"> a. to the east of the Local Area Plan from 'H4: Office' to 'C: New Residential' (2.9ha); b. to the south east of the Local Area Plan from 'I: Agricultural' to 'C: New Residential' (29.6ha); c. to the south east of the Local Area Plan from 'I Agricultural ' to 'B Existing Residential and Infill'; and d. for the additional lands within the revised LAP boundary to be zoned as 'I: Agricultural' (13ha). <p>Lands to the east of Maynooth will be re-zoned to facilitate the future residential development in the area. The Maynooth Local Area Plan boundary will be revised to accommodate this additional un-zoned lands and 'I – Agriculture' zoning will be inserted.</p>
(iii)	<p>Insert section 7.1.4: 'Key Development Area: Railpark' relating to the future strategy for the development of these lands;</p> <p>This text provides context for the proposed development of Railpark which is proposed to provide residential housing for Maynooth town. It also outlines the plans for the proposed Maynooth Eastern Relief Road (MERR). The text sets out the design aspects for the Railpark development to achieve the vision for the development as <i>'an exemplar of urban housing expansion, outward looking and integrating itself into the surrounding context, prioritising sustainable modes of travel, encouraging innovative design and technologies and driving towards a low carbon and climate resilient place'</i>.</p>
(iv)	<p>Amend/Add Roads Objectives:</p> <ul style="list-style-type: none"> a. TRO 2(c) to provide for an alternative junction point on the Leixlip Road; b. TRO 3(j) to allow for potential re-alignment of part of Leixlip Road; and c. TRO 8 which relates to the provision of Vulnerable Road User permeability. <p>TRO 2(c) and TRO 3(j) relate directly to the proposed MERR to protect land from development of the road (TRO 2(c)) and facilitate any road realignments and improvements should they be required in the future (TRO 3(j)). The Proposed Amendment No.1 inserts an option for the alignment of the MERR to link to the existing Leixlip Road under TRO 2(c).</p> <p>TRO 8 will look to facilitate and increase of access for vulnerable road users such as pedestrians, those with limited mobility, cyclists to allow ease of movement between residential lands, in and around Maynooth town, Maynooth University and schools around the town.</p>

Activities associated with the Proposed Amendment No.1	
(v) Amend Pedestrian and Cycle Networks objective PCO 4;	This amendment includes specific reference to provide cycling infrastructure to connect the proposed MERR to the town centre and train station.
(vi) Amend Map No. 1 (Roads Objectives Map);	This amendment will update the map to include the amended local area plan boundary and proposed roads objective specific to the proposed MERR.
(vii) Amend Table 17: Land Use Zoning Matrix to permit 'childcare / crèche / playschool' uses to be 'Open for Consideration' in land zoned as 'F: Open Space & Amenity'	This amendment is made to provide consistency and alignment with other Local Area Plans in Kildare and the Kildare County Development Plan 2017 - 2023.
(viii) A number of consequential changes arising to provide for these proposed amendments.	This relates to the supporting text and information that will be added/updated in order to facilitate the inclusion proposed amendments (i) to (vi) above, and provide context for the Proposed Amendment No.1.

4 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 Proposed Amendment No. 1 will sit within a hierarchy of national, regional and local plans. These include the National Planning Framework 2040, National Development Plan 2018 - 2027, Regional Planning Guidelines for the Greater Dublin Area 2010 - 2022, the Kildare County Development Plan 2017 - 2023 (CDP) and other local area plans. This planning hierarchy was taken into account in drafting Proposed Amendment No. 1 and undertaking this SEA.

4.1 National Planning Policy

National Development Plan 2018-2027 (NDP) and National Planning Framework (NPF) were launched in 2018 under the Government's 'Project Ireland 2040' policy initiative. The NDP sets out a strategic framework for public capital investment and is aligned to the national planning strategy set out in the NPF.

Strategic investment priorities for the NDP include housing and sustainable urban development as well as the national road network and environmentally sustainable public transport among the ten priorities.

The NDP outlines the housing as one of the number of challenges that form the context for the NPF and NDP's strategic investment priorities. The NDP states that by 2040 the population of Ireland is expected to reach almost six billion a need for 550,000 more homes. This corresponds to a long-term trend of 25,000 new homes every year with a higher level of output needed in the short- to medium-term to respond to the existing deficit.

A National Policy Objective (No. 32) of the NPF is the target for the delivery of 550,000 additional households by 2040 and to provide new homes at locations that can support sustainable development and at appropriate scale of provision relative to location (No. 33)

4.2 Regional Planning Policy

The Regional Planning Guidelines are the main means by which to implement the national planning strategy, as detailed in Section 21 of the Planning and Development Act 2000, as amended. They must be consistent with the overall context of national planning strategy.

The current regional planning guidelines have been developed to give effect to and consistent with the National Spatial Strategy (2002-2020). The NSS introduced the mechanism of Regional Planning Guidelines to support the implementation of the NSS to achieve more balanced regional development and more strategic physical and spatial planning.

The regional planning guidelines for the Greater Dublin Area 2010 - 2022 were developed by Dublin and Mid-East Regional Authorities and include Kildare as part of the Greater Dublin Area (GDA) geographical area. Under these guidelines, Maynooth is listed as a “Large growth Town II” under the settlement hierarchy. The Maynooth/Leixlip Economic Area is highlighted as having locational strength with transport corridors and established educational and industrial campuses.

The National Spatial Strategy (NSS) has recently been succeeded by the National Planning Framework under the Project Ireland 2040 initiative.

4.2.1 Kildare County Development Plan 2017 - 2023

The Kildare County Development Plan (CDP) 2017 - 2023 came into effect on the 1 March 2017. As discussed in Section 2.4, the CDP set out Housing Unit targets for Maynooth town.

4.3 Local Planning Policy

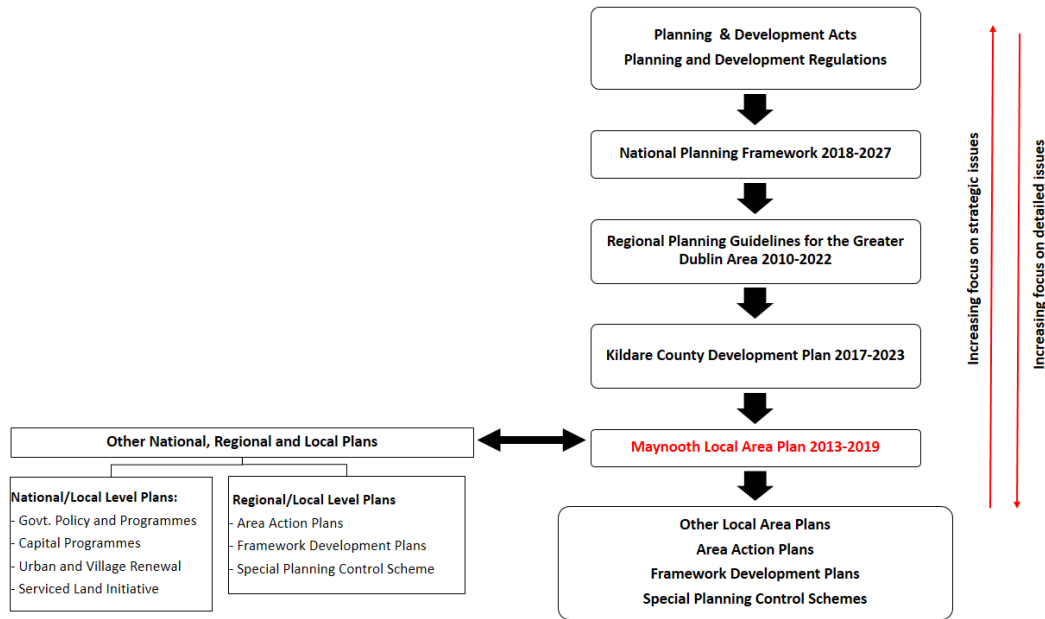
Local Area Plans must have regard to national and regional strategies and guidelines to both inform and structure land use policies. Local Area Plans provide the key policy context for individual planning decisions within the LAP area.

In addition, the Guidelines for Planning Authorities (Department of Environment, Community and Local Government (DoECLG), 2013), outlines that good LAPs will also inform policies at regional and national level.

The hierarchy of the planning process within Ireland is summarised in the flow chart depicted in **Figure 1**.

This flow chart (adapted from the Department of Environment, Heritage and Local Government (DoEHLG) Development Plan Guidelines for Planning Authorities (2007) indicates where Proposed Amendment No. 1 falls within that hierarchy.

Figure 1: Hierarchy of the Planning Process in Ireland



4.4 Relationship of the Plan to other Plans and Programmes

As part of the SEA process the context of the Proposed Amendment No.1 must be established with regard to other plans and programmes that have been adopted at International, National, Regional and Local level. In particular, the interaction of the Proposed Amendment 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 Proposed Amendment and are outlined in **Table 1**.

Table 2: Hierarchy of Relevant Legislation, Plans and Programmes

Level	Legislation, Plans and Programmes
International/EU Level	Water Framework Directive & associated Directives SEA Directive Floods Directive Groundwater Directive Habitats Directive Birds Directive Freshwater Fish Directive Shell fish Directive Drinking Water Directive Bathing Water Directive Environmental Impact Assessment Directive Seveso Directive Sewage Sludge Directive Urban Waste Water Treatment Directive

Level	Legislation, Plans and Programmes
	<p>Waste Framework Directive Nitrates Directive Soils Directive Air Quality Directives including Framework Directive National Emissions Ceiling Directive Environmental Noise Directive Climate Change Programme (ECCP II) Industrial Emissions Directive EU Reach Initiative European Landscape Convention UN Convention of Biological Diversity, 1992 Stockholm Convention Valetta Convention Ramsar Convention OSPAR Convention Granada Convention Gothenburg Strategy</p>
National Level	<p>National Development Plan 2018-2027 Ireland 2040 Our Plan- National Planning Framework 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) Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas (Cities, Towns & Villages) (2009) Guidelines for Planning Authorities – Retail Planning (2012) Local Area Plans - Guidelines for Planning Authorities (2013) Guidelines for Planning Authorities – Spatial Planning and National Roads (2012) Our Sustainable Future – A Framework for Sustainable Development for Ireland (2012) 3rd National Biodiversity Strategy and Action Plan (2017-2021) Appropriate Assessment of Plans and Projects in Ireland. Guidelines for Planning Authorities (revised 2010) Architectural Heritage Protection - Guidelines for Planning Authorities (2004) Guidelines for Planning Authorities - Retail Planning (2012)</p>

Level	Legislation, Plans and Programmes
	Government Policy on Architecture 2009-2015 National Policy on Town Defences (2008) Implementation of Regional Planning Guidelines Best Practice Guidance (2010) Irish Water’s Capital Investment Plan, Irish Water’s Water Services Strategic Plan River Basin Management Plan for Ireland (2018-2021) National Mitigation Plan July 2017 National Landscape Strategy for Ireland 2015 – 2025 National Risk Assessment 2017 National Ambient Air Quality Monitoring Programme 2017-2022
Regional Level	Regional Planning Guidelines for the Greater Dublin Area 2010-2022 Retail Strategy for the Greater Dublin Area 2008-2016 Transport Strategy for the Greater Dublin Area up to 2035 Eastern River Basin District River Basin Management Plan 2009 – 2013 (National River Basin Management Plans 2015-2021 currently in preparation) Eastern-Midlands Region Waste Management Plan 2015-2021 Eastern Catchment Flood Risk Assessment Management (CFRAM) Study – HA09 Hydrology Report (2013) Flood Risk Management Plans Groundwater Protection Schemes
Local Level	Kildare County Development Plan 2017-2023 South East Draft Flood Risk Management Plans (2016) Kildare Local Economic & Community Plan 2016 - 2021 County Kildare Heritage Plan 2005 - 2011 County Kildare Biodiversity Action Plan 2009-2014 Other Local Area Plans

5 SEA Methodology

5.1 Introduction

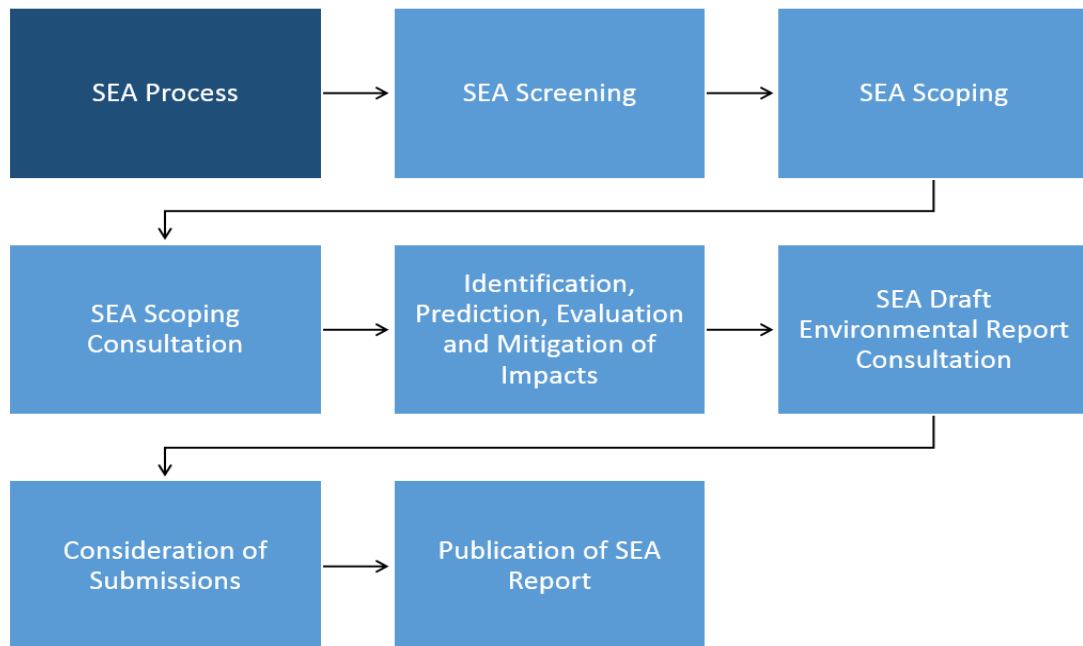
The objective of the Strategic Environmental Assessment (SEA) Directive is ‘*to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans ... with a view to promoting sustainable development*’ (Article 1 SEA Directive). 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 requirements for SEA in Ireland are set out in the national legislation as follows:

- European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations (S.I. No. 435 of 2004) as amended by European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations (S.I. No. 200 of 2011); and
- Planning and Development (Strategic Environmental Assessment) Regulations (S.I. No. 436 of 2004) as amended by the Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations (S.I. No. 201 of 2011).

This section highlights how the SEA has been undertaken for the Proposed Amendment No.1. The SEA methodology is based on legislative requirements and relevant Environmental Protection Agency (EPA) guidance and will ensure compliance with the SEA Directive and associated legislation. The EPA’s SEA Pack (Version March 2018) was also used as a source of information during the scoping process. The key stages outlined in **Figure 2** were identified and are discussed in the following sections.

Figure 2: Key Stages of the SEA Process



5.2 Screening

The screening process allows Kildare County Council to identify at the earliest possible opportunity whether the SEA process applies to a LAP amendment. Under the SEA Directive (2001/42/EC), the SEA process known as Strategic Environmental Assessment must be applied to plans and programmes prepared by public sector bodies.

Under Article 14A of the Planning and Development (SEA) Regulations 2004, as amended, (S.I. No. 436 of 2004 and S.I. No. 201 of 2011), a determination of need for an environmental assessment (strategic environmental assessment) for a LAP or an amendment to a LAP is considered under sub-article (1) and (2):

(1) This article applied to a local area plan or an amendment to a local area plan for an area the population or the target population of which is less than 5,000 persons or where the area covered by the local area plan is less than 50 square kilometres.

According to the Census 2016 data for urban settlement (i.e. population of 1,500 persons or more), the population of the Maynooth was recorded as 14,585. As the target population is greater than 5,000 persons a SEA is mandatory.

5.2.1 Screening for Environmental Report

The Proposed Amendment No.1 to the Maynooth LAP was screened for the need for an Environmental Report. This screening process was documented in the SEA Scoping Report.

The SEA screening process determined under Article 14B (d) of the Regulations 2004 (S.I. No. 436 of 2004) as amended by S.I. No. 201 of 2001 and the criteria set out in Schedule 2A of S.I. No. 436 of 2004, that the implementation of the Proposed Amendment No. 1 would likely have significant effects on the environment and therefore an Environmental Report is required.

5.3 Scoping

The scoping phase of the SEA is a key part of the assessment process as it established the likely extent (geographic, temporal and thematic) of the assessment, the range of environmental issues to be covered and the level of detail the assessment will investigate.

The Scoping Process allows input from the environmental authorities and relevant stakeholders to be incorporated.

Essentially any issues/comments submitted as part of the scoping process will provide greater focus on the development of aspects of the Proposed Amendment.

The issues addressed during the scoping process are as follows:

- The key elements of the Proposed Amendment No.1 to be assessed;
- The key environmental issues to be assessed;
- Research of relevant international, national and local plans, objectives and environmental standards that may influence or impact on the Proposed Amendment;
- Development of draft environmental objectives, indicators and targets to allow the evaluation of impacts; and
- Identification of reasonable alternative means of achieving the strategic goals of the Proposed Amendment No.1.

A Scoping Report was prepared as part of this SEA on behalf of Kildare County Council which asked key questions of environmental authorities and key stakeholders. The responses received were addressed in the preparation of the Environmental Report.

The Proposed Amendment No.1 and SEA Scoping report was sent to the environmental authorities and stakeholders for consultation specified in Article 13A(4) of the Planning and Development (SEA) Regulations 2004, as amended (S.I. No. 436 of 2004). These included the Environmental Protection Agency Ireland (EPA) and Inland Fisheries Ireland (IFI).

An outline of the responses received to the Scoping Report is included in **Section 5.3.1** below.

5.3.1 Scoping Submissions

Kildare County Council received submissions from the EPA and IFI. The submissions and how they were included in the Environmental Report, are summarised below.

Environmental Protection Agency (EPA), letter received by Kildare County Council, 23 February 2018.

The submission made by the EPA made a number of specific comments regarding the Scoping Report. The comment regarding the relationship between the Proposed Amendment and other plans has been addressed and the recent reports for the National Planning Framework, Draft National Water Resource Plan (Irish Water), Environmental Noise Directive and Eastern CFRAMS Flood Risk Management Plan have been taken into account. The objectives and targets in this report have been reviewed against those in the National Planning Framework, as suggested, refer to Section 7.

Targets regarding ‘Population and Human Health’ have included walking and cycling as part of the target to increase the modal shift of transport options and the provision of designated ‘quiet zones’ have been included, refer to Section 7.2.

Inland Fisheries Ireland (IFI), email received by Kildare County Council, 12 February 2018.

Inland Fisheries Ireland’s (IFI) submission highlighted the ‘at risk’ status of most surface waters in the Maynooth area and stressed the availability of the IFI’s cooperation in order to protect and enhance water and habitat quality in all surface waters.

The IFI also noted that the re-zoning of lands for New Residential will put additional pressure on water resources on the area and that sufficient water treatment capacity must be available both within the receiving sewerage system locally and downstream at Leixlip over the full duration of the plan. Water supply wastewater treatment capacity has been considered in Section 6.10 Material Assets.

The IFI highlighted the close proximity of the proposed New Residential area to the Royal Canal and noted the ecological importance of the canal. In particular, the proposed crossing of the Royal Canal as part of the Maynooth relief road, is seen by IFI as having a potentially negative affect on the canal and detailed design should be discussed and agreed with Waterways Ireland and IFI at the planning stage. The Royal Canal is a proposed Natural Heritage Area and is considered in this report in Section 6.4.

Copies of the submissions received are presented in **Appendix A**.

5.4 Information to be contained in the Environmental Report

The Planning and Development Regulations 2001 (S.I. No. 600 of 2001), as amended by the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. No. 436 of 2004), state the content of what must be contained within the environmental report. This information is included in this report, refer to **Table 3** below for where this information is contained.

Table 3: Information to be contained in the Environmental Report

Schedule 2B Information to be contained in an environmental report (Article 14D, Schedule 2B)	Section of Environmental Report
(a) An outline of the contents and main objectives of the plan and relationship with other relevant plans;	Section 2 Proposed Amendment No.1 to the Maynooth Local Area Plan 2013-2019 Section 1.2 Relationship of the Plan to other Plans and Programmes
(b) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan;	Section 6 Current State of the Environment
(c) The environmental characteristics of areas likely to be significantly affected;	Section 6 Current State of the Environment
(d) Any existing environmental problems which are relevant to the plan including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to the Birds Directive or Habitats Directive;	Section 6 Current State of the Environment Section 6.4.6 Designated Sites
(e) The environmental protection objectives, established at international, European Union or national level, which are relevant to the plan and the way those objectives and any environmental considerations have been taken into account during its preparation;	Section 6 Current State of the Environment Section 6.4.6 Designated Sites
(f) the likely significant effects ¹ on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors;	Section 9 Assessment of Likely Significant Effects
(g) the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan;	Section 10 Mitigation Measures

¹ These effects should include secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary, positive and negative effects.

Schedule 2B Information to be contained in an environmental report (Article 14D, Schedule 2B)	Section of Environmental Report
(h) an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;	Section 7 Alternatives Considered
(i) a description of the measures envisaged concerning monitoring of the significant environmental effects of implementation of the plan;	Section 11 SEA Monitoring
(j) a non-technical summary of the information provided under the above headings.	NTS included at the beginning of this report.

5.5 Baseline Data

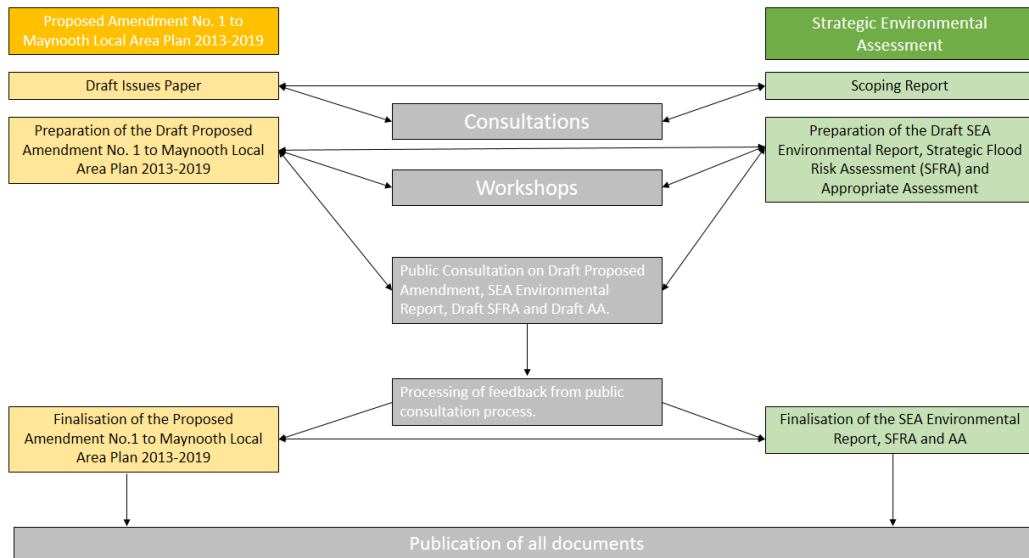
Gathering relevant information relating to the state of the environment for a plan area is an integral part of the SEA process. The SEA Directive requires that certain information relating to the relevant environmental baseline is presented in order to help test the performance of the plan implementation, as well as helping establish how the environment would change if the plan were not to be implemented.

Baseline information has been collected from readily available sources, and a Geographical Information System (GIS) was used to graphically present relevant information. The baseline information is reported in Section 6 of this report.

5.6 Environmental Assessment of the Proposed Amendment

The environmental assessment process ran in parallel to the development and preparation of the Proposed Amendment No.1. Interaction between the Proposed Amendment No.1 and the SEA process is depicted in **Figure 3**.

Figure 3: Interaction between the Proposed Amendment No.1 and SEA.



The environmental assessment process was undertaken in accordance with best practice SEA principals and guidance. This included desk reviews of all the available geographical information system (GIS) based data, specialist investigation into the likely impacts associated with the Proposed Amendment No.1 and recommendations for suitable mitigation measures along with monitoring.

5.7 Consultations

The Proposed Amendment No. 1 to the Maynooth Local Area Plan 2013-2019 and this Report for the Amendment No.1 will be placed on public display and will be referred to Government Departments and other statutory consultees for consideration during the consultation process.

A copy of Proposed Amendment No. 1 to the Maynooth Local Area Plan 2013-2019, together with the Strategic Environmental Assessment Environmental Report, the Strategic Flood Risk Assessment, the Report for Appropriate Assessment Screening and the Infrastructural Assessment may be inspected from **Monday 18th June 2018** at the following locations:

Kildare County Council Offices, Aras Chill Dara, Naas, Co. Kildare (during office hours);

- Maynooth Branch Library, Main Street, Maynooth, Co. Kildare (during opening hours);
- Maynooth Municipal District Office, Leinster Street, Maynooth, Co. Kildare (during opening hours);
- On the Kildare County Council's website:

www.kildare.ie/CountyCouncil/Planning/DevelopmentPlans/LocalAreaPlans/

Written submissions or observations with respect to Proposed Amendment No. 1 may be made to Kildare County Council on or before 5pm on **30th of July 2018** in one of the followings ways:

- In writing to Senior Executive Officer, Planning Department, Kildare County Council, Áras Chill Dara, Devoy Park, Naas, Co. Kildare

or

- Online, through the submission form facility available on Kildare County Council's website at:
<http://kildare.ie/CountyCouncil/Planning/DevelopmentPlans/LocalAreaPlans/MaynoothLAP2013-2019/>

Any such written submissions or observations made before the stated closing date and time and to the specified postal and email address will be taken into consideration before the making of the amendment. Written submissions or observations should include your name and a contact address and, where relevant, details of any organisation, community group or company etc. which you represent.

5.8 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 7 of this Environmental Report discusses the consideration of alternatives.

5.9 Technical Difficulties Encountered

No major technical difficulties were encountered during the preparation of this Environmental Report.

6 Current State of the Environment

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

6.1 Introduction

Historically, Maynooth is a town characterised as an educational centre with the establishment of the National University of Ireland, Maynooth and St Patrick's Seminary. Today it is also a retail and commercial centre, with robust employment and enterprise opportunities, a strong community spirit and quality built and natural heritage. Its proximity and connection to the national road network coupled its strategic location within the Greater Dublin Area (GDA) creates an attractive location for economic development in the form of significant employers and small/medium enterprise. Maynooth is also identified at a regional level as a location that can accommodate additional residential development.

According to the EPA's State of the Environment Report, 2016, Ireland's environment remains in a good condition, although there are a number of key challenges in the coming years. The report identified four priority challenges for the environment, which comprise; valuing and protecting our natural environment; building a resource-efficient low-carbon economy; putting the environment at the centre of our decision making and implementing environmental legislation.

In the EPA's 2020 Vision document it is noted that pressures on the Irish environment increased significantly as a result of a decade of rapid and unprecedented economic growth. Unfortunately, these pressures have accelerated at a rate that far exceeds that observed in other EU countries.

In '2020 Vision' the EPA promotes six environmental goals which consider the principal environmental challenges facing our nation. These goals, which are highly relevant to the sustainable development of Maynooth have a bearing on the assessment of the Proposed Amendment:

- Limiting and adapting to climate change;
- Clean air;
- Protected waters;
- Protected soils and biodiversity;
- Sustainable use of natural resources; and
- Integration and enforcement.

These goals are identified as a means of realising the vision of protecting and improving Ireland's environment.

6.2 Purpose of the Environmental Baseline

The assessment of the Proposed Amendment No.1 with respect to the current environmental baseline is the principal task of this SEA process.

Consequently, the baseline description must be cognisant of the local level nature of the plan and the pressures and interrelationships between environmental topics.

The environmental baseline provides an overview of the existing conditions in the Maynooth area relevant to the Proposed Amendment No.1 and covers the following environmental topics:

- Population and Human Health;
- Biodiversity;
- Soils and Geology;
- Water (Hydrology and Hydrogeology);
- Air, Noise and Climate;
- Archaeological, Architectural and Cultural Heritage;
- Landscape and Visual;
- Material Assets; and
- Interrelationships.

In accordance with the SEA Directive, the inter-relationship between the SEA environmental topics must be taken into account. Of particular note are the interrelationships between water (quality and quantity) and biodiversity, flora and fauna, soils, human health and population. Flora and fauna are 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. Water is also used for leisure and recreational purposes, providing a material asset both for local populations and as an integral component for the tourism economy.

6.3 Population and Human Health

6.3.1 Population

According to the Census 2016 data for urban settlement (i.e. population of 1,500 persons or more), the population of the Maynooth was recorded as 14,585. This represents a 16.6% population increase since the 2011 Census (CSO). The CSO reported that, Maynooth showed the fastest population increase of large towns in Ireland (10,000 persons or more). This compares with a 5.6% population increase for Kildare County over the same period. Refer to Table 4.

Table 4: Population statistics between 1996 and 2016. Source Central Statistics Office (CSO).

	1996	2002	2006	2011	2016	% Change 2011 - 2016
County Kildare	134,992	136,944	186,335	210,312	222,130	5.6%
Maynooth	8,528	10,151	10,715	12,510	14,585	16.6%

6.3.2 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, 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 groups within the population.

Even within areas of economic development, 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. Thus economic development needs to be targeted, geographically and within population groups to ensure that it reduces 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.

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, the economically marginal such as women attempting re-entry to the labour force and children in families in which the primary earner is unemployed.

The level of green space and access to the natural environment is extremely important for the populace 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 access to 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 reducing stress-related problems.

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.

6.3.3 Major Accidents and Hazards

The assessment of impacts on human health will reference other sections of the SEA as relevant along with considering aspects such as the Industrial Emissions Directive, the Control of Major-Accident Hazards Involving Dangerous Substance (“SEVESO”) Directive and Flood Risk Assessments. This will ensure that all relevant vectors through which human health impacts could be caused as a result of the Plan are assessed.

The Seveso III Directive: 2012/18/EU came into effect in Ireland on 1st June 2015, replacing the Seveso II Directive 96/82/EC. Article 13 of the Directive requires member states to ensure that the objectives of preventing major accidents and limiting the consequences of such accidents are taken into account in land use policies and/or other relevant policies. These objectives must be pursued through controls on the following:

- The siting of new establishments; and
- Modifications to existing establishments;

New developments including transport routes, locations of public use and residential areas in the vicinity of establishments, where the siting or developments may be the source of or increase the risk or consequences of a major accident.

There are no designated Seveso sites located within the amended LAP boundary. The nearest Seveso site is Intel Ireland Ltd. in Leixlip, approximately 2km east from the revised Maynooth Local Area Plan boundary.

6.3.4 Relevant Issues

The following issues were considered during the plan preparation:

Population Increase

Population change is a complex topic. A limited number of houses were built during the economic recession, residential housing construction has been limited and the national population has increased by 12.3% since 2006. Among larger towns of 10,000 persons or more in the country, Maynooth was reported as having the fastest growth with a population increase of 16.6% in 2016 since the 2011 Census.

Population growth and limited housing stock has cumulated in a housing shortage in the main cities and large town in Ireland. At the time of the 2016 Census, County Kildare had the lowest housing vacancy rate at 6.3% in Ireland. Maynooth is included as one of the 21 areas in Ireland that has been allocated as a Rent Pressure Zone. These are areas around the country where rents are highest and rising and where households have greatest difficulties in finding accommodation they can afford. They are enacted under the Planning and Development (Housing) and Residential Tenancies Act 2016.

Predicting accurate population forecasts impacts on future housing demand and issues such as age profiles, limits in housing stock and occupancy rates and immigration must all be taken into account. Future housing demand and all of the 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.

Human Health

There are a number of interlinking areas which are relevant to the Proposed Amendment No.1, for example, the development of sustainable transport and sustainable communities. Policies relating to these areas will impact on human health and quality of life.

The following issues are relevant to the plan:

- Increase in demand for water supply, waste water treatment and other infrastructural and community services due to economic growth;
- Impact of population growth on sensitive habitats and landscape in terms of development and recreational pressures;
- Impacts from noise and air pollution as a result of development and transport;
- Effects on water quality due to new emissions;
- Promotion of walking and cycling via integrated land use and transport policy;
- Consideration of existing and future Seveso sites;
- Housing needs for all sectors of the community;
- Community infrastructure needs including community facilities;
- Educational needs for both primary, secondary and third level education;

- Provision of open spaces within residential areas and areas throughout the town;
- Health/medical facility requirements for the town for the future;
- Preservation of public rights of way to allow public access to amenity;
- Adequacy of public/civil space areas;
- Provision for retail and commercial services;
- Vitality and viability of the town centre; and
- Ease of access to the town centre.

6.4 Biodiversity

6.4.1 Introduction

The Convention on Biological Diversity defines biodiversity 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 sites, habitats, species and networks of importance at the international, national or local level, and which may occur within or outside the Plan area.

The term biodiversity refers to more than individual species. 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 are:

- European (Natura 2000) sites (SACs and SPAs, and candidate SACs);
- Natural Heritage Areas (NHAs), Nature Reserves, Wildfowl Sanctuaries, Refuges for Fauna or Flora or sites proposed for designation;
- Undesignated sites such as proposed NHAs (pNHAs), 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 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 BoCCI listed species, natural and semi-natural habitat areas including wetlands, woodlands, water bodies, etc.

6.4.2 Baseline

Lying between the east coast and Ireland's central plain with the mountains to the south, Kildare has a wealth of natural habitats which support a wide variety of wildlife, mostly distributed throughout the countryside.

Kildare is an inland county. It consists of a low-lying, fertile plain, broken only in a few places by small hills such as the Hill of Allen and Dunmurry Hill, with upland areas mainly on the eastern county boundary. Good agricultural land covers much of county, interrupted in places by expanses of bog and fen, river and canal networks

Kildare's wide variety of wildlife habitats including peatlands, grassland, woodland, hedgerows, rivers and canals. Even urban areas support wildlife habitats in parks and green spaces, stone walls and bridges, gardens and hedgerows, and along waterways.

The biodiversity of County Kildare is protected by National and EU legislation (The Wildlife Act (1976 & 2000) and the EU Habitats and Birds Directives), and is also protected by Kildare County Council through policies in the Kildare CDP 2017-2023.

A Biodiversity Action Plan was adopted by Kildare County Council for the 2005-2011 period. The purpose of this document was to provide a framework for the conservation of biodiversity and natural heritage at a local level by translating policies (national and international) and legislation into practical action which serve to raise awareness of and enhance the protection, conservation and management of County Kildare's natural heritage.

6.4.3 Habitats

The County Kildare Biodiversity Action Plan (2011) provides an overview of the habitats of County Kildare. There are habitats and features which are of particular importance for biodiversity throughout Maynooth. These include woodlands, hedgerows, field boundaries, rivers, streams and associated riparian zones, canals, freshwater wetlands, urban parks and gardens. Those habitats relevant to Maynooth are summarised below:

Canals, Rivers and Streams

The three main rivers that flow through Kildare are the Barrow, the Liffey and the Boyne, along with other small rivers and tributaries. These rivers are good for trout and coarse fishing. Salmon were once common but their numbers have decreased, as in other parts of the country, mainly due to a deterioration in water quality and damage to their spawning beds. The Barrow is designated as a site of international nature conservation importance (SAC) based on the diverse range of habitats that occur along and in the river, including wet woodland and petrifying springs, and because of the presence of several species such as otters, crayfish and Atlantic salmon. Kingfishers are reported to be common along the Barrow utilising its rich food supply. The Royal and the Grand Canals flow through the county. Both are designated as proposed Natural Heritage Areas and have a rich natural heritage and biodiversity.

The canals have a mosaic of wildlife habitats associated with them which contributes to their high biodiversity value. These include stretches of open water, fringing wetlands, towpath grasslands and hedgerows or patches of scrub. These habitats in turn support a rich wildlife. The towpath grasslands are of particular interest because they often occur on lime-rich substrate imported to create pathways along the canals and as a result can be quite species-rich. Such natural and unimproved grasslands are an increasingly rare habitat in Ireland.

The canal, rivers and streams occurring within Maynooth provide a network which are home to a variety of habitats and species. The banks (riparian zones) of rivers and streams are particularly important as they contain a range of habitats and species, which are different from the surrounding landscape. In many cases the maintenance of rivers and streams in an open, semi-natural condition, will be encouraged to protect and maintain biodiversity, landscape and for flood protection control value wherever possible. This will be achieved by regulating development in river and stream corridors by implementing sustainable drainage systems for commercial and residential developments.

Wetlands

Wetlands such as marshes and riparian zones (habitats along rivers and lakes with vegetation that can tolerate the wet conditions e.g., wet woodland or reed swamp), are also important for wildlife and for helping to maintain water quality.

Trees, Woodland and Hedgerows

Trees and hedgerows constitute an important natural and historic resource, given their contribution to landscape quality, their ecological importance as wildlife habitats and historical significance as townland and field boundaries. In urban settings, trees and groups of trees can contribute significantly to the local landscape/townscape and in the successful integration of new buildings into the landscape. Maynooth contains many large trees and groups of trees of considerable heritage value, which enhance the urban fabric of the town. The most notable trees are those found at Oldtown Demesne. These are considered visually important to the landscape, as well as providing significant recreational capacity and important wildlife habitats. The planting or retention of mature trees can contribute to amenity and more attractive developments as well as important wildlife habitats.

The retention of trees should be considered at the design stage of any development. When planting hedgerows, species indigenous to the area should be used. The County Kildare Hedgerow Survey (2006) identified the predominant hedgerow species in Kildare. The Council will undertake a tree survey of all trees in Maynooth over the period of the CDP with a view to the protection of specific trees and groups of trees of special amenity value.

Grassland

Less intensively-managed or improved grasslands and grasslands on lime-rich soils often have greater diversity of grasses and wildflowers than intensively managed grassland and support a large number of invertebrates.

These semi-natural grasslands are becoming increasingly rare and survive only in areas that are unsuitable for cultivation or are inaccessible to large machinery. Semi-natural grasslands can be found in some commonage areas, on cutaway bog land, along road margins, canal banks and abandoned quarries.

Urban wildlife habitats

Urban areas are not necessarily wildlife deserts and a wide range of plants and animals can be found in public green spaces, town parks, old stone walls, hedgerows, graveyards, rivers, canals, gardens and waste ground. Certain species such as foxes have become increasingly visible in urban areas as they forage for food in dustbins and hunt in town parks. Many other animals are present but are a bit more discreet in going about their daily activities.

Peatlands and Fens

Peatlands are commonly found in County Kildare, most commonly raised bogs and fens. Raised bogs are formed from wet depressions where dead plant material has accumulated over thousands of years to form an acidic, organic rich material (peat) in water saturated conditions. Small scale and commercial extraction of peat for fuel and horticulture has left relatively few intact sites in Kildare, some of which are designated, including Ballynafagh Bog SAC. Bogs have a unique flora including sphagnum mosses which carpet the bog surface and form the basis of the dead plant material that forms the peat.

Fens are groundwater fed habitats and thus generally more nutrient rich than peatlands and have a higher pH. They are characterised by a mosaic of habitats including open water, reed swamp, raised bogs and carr (waterlogged) woodland. Fens are also important habitats for breeding and wintering birds.

Royal Canal pNHA and Rye Water Valley/Carton House SAC

The Royal Canal pNHA and Rye Water Valley/Carton House SAC (001398) are designated habitats within or immediately adjacent to the amended LAP boundary. These sites are discussed in further detail in Section 6.4.6 below.

6.4.4 Protected Species

Kildare is home to several rare, protected and/or threatened plants and animals. Protected plants are those that are legally protected under the Flora Protection Order within the Wildlife (Amendment) Act 2000 (e.g. Opposite leaved Pondweed, Basil Thyme or Hairy St. John's-wort). Various animals are also afforded protection within the Wildlife Acts (e.g. all native mammals). Species listed on Annex II of the European Union Habitats Directive (e.g., Otters, White-clawed Crayfish, Marsh Fritillary Butterfly) or Annex I of the EU Birds Directive (e.g., Golden Plover, Kingfisher) are also protected.

The Rye Water Valley SAC is located downstream of the amended LAP boundary and a tributary of the River Liffey and contains a number of protected species. Refer to **Table 5**.

In addition to those species listed in **Table 5** there is a historical record from the estate for the Hairy Violet (*Viola hirta*), (protected under the Flora Protection Order (1987)) but this has not been recorded in recent years.

Table 5: Rye Water Valley SAC (001398) Protected Species (NPWS 2013).

Flora	<ul style="list-style-type: none"> • Hairy St. John's-wort (<i>Hypericum hirsutum</i>) - protected under the Flora (Protection) Order, S.I. No. 356 of 2015) • Green Figwort (<i>Scrophularia umbrosa</i>) - listed in Red Data Book² • Blue Fleabane (<i>Erigeron acer</i>) – listed in the Red Data Book
Fauna	<ul style="list-style-type: none"> • Kingfisher (Annex I listed on EU Birds Directive) • Semi-aquatic snails <i>Veritgo angustior</i> and <i>V. moulinsiana</i> (Annex II listed) • Salmon and White-clawed Crayfish (<i>Austropotmobium pallipes</i>) (Annex II Species Habitats Directive) • Dragonfly (<i>Orthetrum coerulescens</i>) – scarce in Ireland.

Otter

Otters have strong populations in Kildare, particularly along the Barrow and the Liffey. Otters are a protected species under European Union legislation mainly because numbers have declined sharply in other parts of Europe. The Irish population is therefore particularly important. Otters depend on healthy fish populations and the presence of suitable vegetation cover along the riverbank in which they make their burrows or 'holts'. Recording and studying the distribution and abundance of rare plants and animals is very important for monitoring the state of the environment and the impact, if any, of climate change.

White-clawed crayfish

The White-clawed Crayfish (*Austropotamobius pallipes*) is regarded as a keystone species. In Ireland, it is found in large rivers (such as the River Barrow), small headwater tributaries and in lakes. A variety of aquatic habitats are important for crayfish. Juvenile crayfish live among submerged tree roots, gravel or macrophytes, while larger crayfish must have stones to hide under, or an earthen bank in which to burrow. White-clawed Crayfish are widespread across much of Ireland and populations have not declined to the extent that they have in other parts of Europe. The species has been recorded in the Rye Water River at Leixlip, downstream of Maynooth. The species is listed on Annex II of the EU Habitats Directive.

Marsh Fritillary butterfly

This beautiful butterfly is one of the most endangered species in Europe. It has been recorded at a number of sites in Kildare, mainly in areas of natural grassland that have been established on cutover peatlands.

Devil's-bit Scabious is the main food plant for the larval stage of the Marsh Fritillary.

² International Union for the Conservation of Nature and Natural Resources(IUCN) Red list categories and criteria

Efforts are being made by the Irish Peatland Conservation Council, the National Parks and Wildlife Service and Butterfly Conservation Ireland to study the Marsh Fritillary in Kildare in order to conserve this species for future generations.

6.4.5 Tree Preservation Orders

Tree Preservation Orders (TPOs) may be made under Section 45 of the Local Government (Planning & Development) Act 1963 and subsequent acts. Part XIII of the Planning and Development Act 2000 sets out the provisions for TPOs. A TPO can be made if it appears to the planning authority to be desirable and appropriate in the interest of amenity or the environment. A TPO can apply to an individual tree, a 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 order 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.

No tree preservation orders have been identified within the amended LAP boundary.

The Maynooth LAP policies seek to protect a number of trees and group of trees of special amenity value at a number of locations within the town (see below) and refer to **Figure 3.1** in **Appendix B**.

- Main Street
- Lime Avenue
- Leinster Street
- College Lands
- Around the cemetery on the Kilcock road
- Castle Lands
- Castle Area
- Rear of the Pound
- Maria Villa
- On the amenity zoned lands to the south of Carton House

6.4.6 Designated Sites

There are a range of statutory provisions in force in Ireland to protect, conserve and manage our natural heritage, and to control and regulate human activities that may impact upon it negatively. The Department of Culture, Heritage and the Gaeltacht (DCHG) is responsible, through the National Parks and Wildlife Service, for the designation of conservation sites in Ireland. Currently there are three main types of designation of protected areas- Special Areas of Conservation (SAC), Special Protection Areas (SPA and Natural Heritage Areas (NHA).

Designated conservation sites within 15km in the vicinity of Maynooth are highlighted on **Figure 3.2** and **Figure 3.3** in **Appendix B** of this report.

Special Areas of Conservation (SACs) have been selected for protection under the European Council Directive on the conservation of natural habitats and of wild fauna and flora (92/43/EEC) by the DCHG due to their conservation value for habitats and species of importance in the European Union.

Special Protection Areas (SPAs) have been selected for protection under the 1979 European Council Directive on the Conservation of Wild Birds (79/409/EEC) by the DCHG due to their conservation value for birds of importance in the European Union.

There are three sites with European designation (Natura 2000 sites) within 15km of the amended LAP boundary and which are of relevance to the preparation of the SEA. In particular, the Rye Water Valley/Carton House SAC is downstream of the amended LAP boundary and a tributary of the River Liffey.

These sites are listed in **Table 6** below.

Table 6: SAC within 15km of the amended LAP boundary.

Site Name	Site Code
Rye Water Valley/Carton SAC	001398
Ballynafagh Bog SAC	000391
Ballynafagh Lake SAC	001387

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

There are ten pNHAs within 15km of the amended LAP boundary, including one pNHA within the amended LAP boundary (Royal Canal pNHA, 002103), as outlined in **Table 7** and illustrated on **Figure 3.2** and **Figure 3.3** in **Appendix B**.

Table 7: NHAs and pNHAs within 15km of the Maynooth LAP boundary (including the Proposed Amendment No.1).

Site Name	Site Code
Natural Heritage Areas:	
Hodgestown Bog NHA	001393
Proposed Natural Heritage Sites:	
Ballynafagh Bog pNHA	000391
Ballynafagh Lake pNHA	001387
Donadea Wood pNHA	001391
Grand Canal pNHA	002104
Kilteel Wood pNHA	001394
Liffey Valley pNHA	00128
Rathmoyle Esker pNHA	00557
Royal Canal pNHA	002103
Rye Water Valley/Carton pNHA	001398

Site Name	Site Code
Slade of Saggart and Crooksling Glen pNHA	00211

All designated sites within 15km of the plan area will be assessed in detail in the SEA and AA process.

A brief summary of each of the above designated sites is provided in **Table 8** below. Summaries of each site is taken from the National Parks and Wildlife Service's (NPWS) Site Synopses.

All designated sites within 15km of the plan area will be assessed in detail in the SEA and AA process.

Table 8: Site synopses of the designated sites within 15km of the Maynooth LAP boundary (including the Proposed Amendment No.1).

Site Name (Site Code)
<p>Hodgestown Bog NHA (001393)</p> <p>Hodgestown Bog NHA is located 4km north-west of Prosperous. The site comprises a raised bog that includes both areas of high bog and cutover bog. There are hummocks throughout the high bog and there is also a small hummock/hollow complex. Cutover is found all around the high bog. Much of the high bog has vegetation typical of a Midland Raised Bog, consisting of Ling Heather (<i>Calluna vulgaris</i>), White Beak-sedge (<i>Rhynchospora alba</i>), Cranberry (<i>Vaccinium oxycoccos</i>) and Bog-rosemary (<i>Andromeda polifolia</i>). The bog moss <i>Sphagnum tenellum</i> is common on the bog as is White Beak-sedge. Hummocks of the bog moss <i>Sphagnum capillifolium</i> are also common but only one hummock of <i>S. imbricatum</i> was recorded. The bog moss <i>S. magellanicum</i> is also frequently seen on the bog, in hollows with <i>S. tenellum</i> or with <i>S. cuspidatum</i> in in-filling old drains. In areas of the bog where there are signs of disturbance and bare peat patches are found the moss <i>Campylopus introflexus</i>, Deergrass (<i>Scirpus cespitosus</i>), Bog Asphodel (<i>Nartheceium ossifragum</i>), Ling Heather and Cross-leaved Heath (<i>Erica tetralix</i>) tend to dominate.</p> <p>Source: NPWS</p>
<p>Ballynafagh Bog SAC/pNHA (000391)</p> <p>This site is a raised bog situated about 1 km west of Prosperous in Co. Kildare. The area is directly underlain by muddy, fossiliferous limestones, interbedded with calcareous shales. The subsoils are predominantly clay-rich tills. All are of low permeability. The site comprises a relatively small core of uncut high bog (approx. 70 ha), which is surrounded by a more extensive area of cutover bog (approx. 90 ha). The high bog area can be divided into a wet core of active bog, which covers an area of 23 ha, surrounded by approximately 44 ha of degraded raised bog, which is experiencing drying-out at present. 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 (* = priority; numbers in brackets are Natura 2000 codes):</p> <p>[7110] Raised Bog (Active)*</p> <p>[7120] Degraded Raised Bog</p> <p>[7150] Rhynchosporion Vegetation</p> <p>Source: NPWS</p>

Site Name (Site Code)
<p>Ballynafagh Lake SAC/pNHA (001387)</p> <p>Ballynafagh Lake is located about 2 km north-west of Prosperous in Co. Kildare. It is a shallow alkaline lake with some emergent vegetation. The Blackwood Feeder, which connects Ballynafagh Lake to the Grand Canal, is also included in the site. 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 (* = priority; numbers in brackets are Natura 2000 codes):</p> <p>[7230] Alkaline Fens [1016] Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>) [1065] Marsh Fritillary (<i>Euphydryas aurinia</i>)</p> <p>Source: NPWS</p>
<p>Donadea Wood pNHA (001391)</p> <p>Donadea Wood is predominantly deciduous woodland, located approximately 10.5km south west of Maynooth. The soil of the area is glacial drift.</p> <p>The entire site has been planted with a mix of deciduous and coniferous trees. Ash (<i>Fraxinus excelsior</i>) is the predominant deciduous species, with some cherry (<i>Prunus</i> spp.), oak (<i>Quercus</i> spp.), Beech (<i>Fagus sylvatica</i>) and Sycamore (<i>Acer pseudoplatanus</i>). Occasional patches of Elder (<i>Sambucus nigra</i>), Hazel (<i>Corylus avellana</i>) and Hawthorn (<i>Crataegus monogyna</i>) are found. The ground flora is poorly developed and species poor.</p> <p>The site is notable for the presence of two rare species of Myxomycete fungus, namely <i>Diderma chondrioderma</i> and <i>Licea testudinacea</i>, the latter in one of only two known Irish sites.</p> <p>Source: NPWS</p>
<p>Grand Canal pNHA (002104)</p> <p>The Grand Canal is a man-made waterway linking the River Liffey at Dublin with the Shannon at Shannon Harbour and the Barrow at Athy. The Grand Canal proposed Natural Heritage Area (pNHA) comprises the canal channel and the banks on either side of it.</p> <p>The vegetation of the towpath is usually dominated by grass species. The contrast between the calcicolous (calcareous) species of the towpath and the calcifuge species of the bog is very striking. The ecological value of the canal lies more in the diversity of species it supports along its linear habitats than in the presence of rare species. It crosses through agricultural land and therefore provides a refuge for species threatened by modern farming methods.</p> <p>Source: NPWS</p>

Site Name (Site Code)
<p>Royal Canal pNHA (002103)</p> <p>The Royal Canal is a man-made waterway linking the River Liffey at Dublin to the River Shannon near Tarmonbarry. There is a branch line from Kilashee to Longford Town. The canal pNHA comprises the central channel and the banks on either side of it. The main water supply is from Lough Owel (also an NHA) via a feeder channel into the canal at Mullingar.</p> <p>A number of different habitats are found within the canal boundaries - hedgerow, tall herbs, calcareous grassland, reed fringe, open water, scrub and woodland. The vegetation of the towpath is usually dominated by grass species. The contrast between the calcicolous species of the towpath and the calcifuge species of the bog is very striking. Otter spraints are found along the towpath, particularly where the canal passes over a river or stream.</p> <p>The rare and legally protected Opposite-leaved Pondweed (<i>Groenlandia densa</i>) (Flora Protection Order 1987) is present at one site in Dublin, between Locks 4 and 5. <i>Tolypella intricata</i> (a stonewort listed in the Red Data Book as being vulnerable) is also in the Royal Canal in Dublin, the only site in Ireland where it is now found. The ecological value of the canal lies more in the diversity of species it supports along its linear habitats than in the presence of rare species. It crosses through agricultural land and therefore provides a refuge for species threatened by modern farming methods.</p> <p>Source: NPWS</p>
<p>Kilteel Wood pNHA (001394)</p> <p>This site is located about 10km northeast of Naas and immediately east of the village of Kilteel. The wood is situated on a hill, which rises to 248m.</p> <p>The site is a small heathy wood mostly of oak (<i>Quercus</i> spp.) and Downy Birch (<i>Betula pubescens</i>). Other trees present include Beech (<i>Fagus sylvatica</i>), Sycamore (<i>Acer pseudoplatanus</i>), Ash (<i>Fraxinus excelsior</i>) and Scots Pine (<i>Pinus sylvestris</i>). In a clearing gorse (<i>Ulex europaeus</i>, <i>U. gallii</i>) and Heather (<i>Calluna vulgaris</i>) occur.</p> <p>The ground vegetation is restricted, with the following species – Bilberry (<i>Vaccinium myrtillus</i>), Bluebell (<i>Hyacinthoides non-scripta</i>), Greater Stitchwort (<i>Stellaria holostea</i>), Wood Sage (<i>Teucrium scorodonia</i>), Heath Bedstraw (<i>Galium saxatile</i>), Red Fescue (<i>Festuca rubra</i>), Wavy Hair-grass (<i>Deschampsia flexuosa</i>) and Creeping Soft-grass (<i>Holcus mollis</i>).</p> <p>Source: NPWS</p>
<p>Liffey Valley pNHA (00128)</p> <p>This site is approximately 6km east of Maynooth town. This woodland is now incorporated into an amenity area adjacent to Leixlip Village called St. Catherine's Park. The wood occupies the slopes above the River Liffey and is largely WN2, Oak-ash-hazel woodland. It has clearly been managed in the past and non-native species including various conifers, sycamore (<i>Acer pseudoplatanus</i>), beech (<i>Fagus sylvatica</i>) and <i>Carpinus betulus</i> are found in the canopy, particularly towards the southern part of the wood. <i>Prunus laurocerasus</i> is also present in places and some management of this has been undertaken recently. Several uncommon species were recorded during site survey. These included <i>Hypericum hirsutum</i> and Bird cherry (<i>Prunus padus</i>).</p> <p>Source: NPWS</p>

Site Name (Site Code)
<p>Rathmoylan Esker pNHA (00557)</p> <p>Rathmoylan Esker is a proposed Natural Heritage Area comprising several segments on a series of north-west to south-east trending eskers located 7km south of Trim near the village of Rathmoylan in Co. Meath. Several parts of these eskers have been colonised by semi-natural deciduous and mixed woodland.</p> <p>The most natural and undisturbed portion of woodland has developed on a narrow esker ridge surrounded by pasture on three sides and an abandoned quarry on the other. A larger tract of semi-natural woodland just to the east has a more managed and less natural character with a sparser shrub layer and lower species diversity. A third area of mixed deciduous woodland occurs just to the north-east of the village represents the only intact piece of woodland left on this part of the esker. It comprises mature Beech and Scots Pine, with a secondary layer of young Hazel, Ash, Sycamore and Elder.</p> <p>Source: NPWS</p>
<p>Rye Water Valley/Cartron SAC and pNHA (001398)</p> <p>The site is downstream of the amended LAP, along the Rye Water River, located approximately 1.4km northeast of Maynooth town centre. The SAC boundary extends eastwards as far as Leixlip. The site has also been designated as a proposed National Heritage Area. The site is of importance due to the Annex I habitat (Petrifying Springs) which are lime-rich water sources that deposit tufa, a porous calcareous rock. The vulnerability of these habitats is recognised by the EU Habitats Directive (92/43/EEC) by their designation as a priority habitat in Annex I as Petrifying springs with tufa formation (<i>Cratoneurion</i>).</p> <p>[7220] Petrifying springs with tufa formation (<i>Cratoneurion</i>) [1014] <i>Vertigo angustior</i> (Narrow-mouthed Whorl Snail) [1016] Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>)</p> <p>Source: NPWS</p>
<p>Slade of Saggart and Crooksling Glen pNHA (00211)</p> <p>This site is located in the south-west of Co. Dublin and stretches from Brittas northwards to approximately 2km south of Saggart. The northern half of the site comprises a river valley with steep tree-covered sides, while the southern side is flatter and contains two small lakes, the Brittas Ponds.</p> <p>The site includes a good example of a wooded river valley and a small wetland system. The presence of a rare plant, a rare invertebrate and a variety of wildfowl species adds to the interest of the site.</p> <p>Source: NPWS</p>

6.4.7 Relevant Issues

The following issues/potential impacts will require detailed consideration during the plan preparation:

- Impacts on protected/designated sites;
- Impacts on protected species;
- Consideration of protecting proposed NHAs in a similar way to fully designated NHAs, for example the Royal Canal pNHA;
- Impacts on sensitive habitats outside of protected areas;

- Consideration of maintenance or enhancement of 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 for example the loss of hedgerows as habitat corridors.

An Appropriate Assessment (AA) Screening (Stage 1) will be carried out to examine potential impacts of the draft Plan on these Natura 2000 sites. The AA Screening will inform the SEA process. Should it be found that the draft plan may have an impact on the conservation objectives of a Natura 2000 site or that an impact cannot be ruled out then an AA of the plan must be undertaken (Stage 2).

6.4.7.1 Urban Expansion

Urban expansion has been accelerating over recent years as increased development expands into the countryside. The constant encroachment of the built environment on natural habitats will undoubtedly have an impact on the natural flora, fauna, biodiversity and habitats.

6.4.7.2 Water Dependant Habitats

In general, water treatment and wastewater discharges, agricultural runoff, leachate from contaminated sites, urban runoff and unlicensed industrial discharges all have significant negative impacts on water quality which results in subsequent impacts to biodiversity to both aquatic ecosystems as well as neighbouring terrestrial ecosystems.

In the vicinity of Maynooth, the water dependant ecosystems of the River Liffey as well as a few minor tributaries rely on good water quality. The water quality of the River Liffey as it flows through Maynooth is generally good, according to the EPA.

The Royal Canal is a pNHA and provides an important ecological habitat for both aquatic species and the adjacent tow paths which provide a wildlife corridor for terrestrial species. Development in proximity to this site may risk deteriorating water quality and the associated habitats.

Any impacts to these surface waters could lead to a deterioration of water quality and a consequent impact to their ecosystems. Unrestrained development can have a direct impact on 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.

See Rye Valley SPA for info on petrifying springs in **Table 8**.

6.4.7.3 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 genetic integrity of our native species.

Terrestrial and aquatic habitats can be significantly negatively impacted, resulting in severe damage to conservation and economic interests, such as agriculture, fisheries, forestry and various recreational activities.

Biodiversity Ireland's invasive species records were checked and non-native invasive plant species such as Japanese Knotweed (*Fallopia japonica*) has been recorded at sites in the northeast of the town. This particular species is known to spread rapidly and can be very costly to remove properly once established.

6.5 Soils and Geology

6.5.1 Baseline

According to the report 'The Geological Heritage of Kildare' (Geological Survey of Ireland (GSI), 2005), the predominant rock type in the Maynooth area is sedimentary rock, limestone of Carboniferous age in particular. For example the Tober Colleen Formation, Waulsortian Limestones and Lucan Formation.

The soils underlying the study area are identified by the Geological Survey of Ireland as being predominantly Made Ground in the urban centre. 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.

Other soils identified in the plan area include fine loamy drift with limestone such as Elton, Straffan and Faoldroim.

Refer to **Figures 3.4 and 3.5 in Appendix B** for details of the soils and bedrock geology in the vicinity of the study area.

County Kildare is positioned at the forefront of geological heritage within Ireland. There are no Geological Heritage Sites (GHS) located within the amended LAP boundary. The nearest site is Louisa Bridge Warm and Cold Springs (Site Codes KE016 and KE017), approximately 5km east of Maynooth,

Refer to **Figure 3.6 in Appendix B** for Geological Heritage in the vicinity of Maynooth amended LAP boundary.

6.5.2 Relevant Issues

6.5.2.1 Excavated Material

The preparation of agricultural or ‘greenfield’ land for development requires the excavation of soil, most likely clean material that may be able to be reused on-site or at another location. Article 27 of the European Communities (Waste Directive) Regulations, 2011 (S.I. No. 126 of 2011), allows an “economic operator” to decide under certain circumstances, that a material is a by-product and not a waste. Article 27 facilitates the re-use of certain material from site and avoid the requirement of landfilling potentially re-usable material. Article 27 was introduced into Irish legislation to implement article 5 of the 2008 Waste Framework Directive (2008/98).

6.5.2.2 Urbanisation

The degradation of soil fertility and threats to conservation of high-quality soils through the loss of tree/vegetation cover and through urbanisation has consequences for the sustainable development of rural activities as well as the sequestration of carbon.

The following issues were considered during the plan preparation:

- Impacts of pollution from construction work or from the operation of new developments;
- Extent of existing contaminated land;
- Disturbance to soils and geology during new development; and
- Pressures on good quality agricultural land due to development.

6.5.2.3 Climate Change

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 water management activities.

Eroded soil washed into rivers has the potential to increase nutrient content leading to alteration of surface water nutrient balances which can further lead to the eutrophication of rivers and lakes. If contaminated soils are eroded and transported to watercourses, aquatic plants and animals can be severely damaged.

Geotechnical extraction activities, when not managed in an environmentally sustainable fashion results in further pressure on the hydrological environment.

6.6 Hydrology and Hydrogeology

6.6.1 Hydrology

The plan area is located in the Liffey and Dublin Bay Catchment, in Hydrometric Area 09. There are two river sub-catchments across the amended LAP boundary.

The River Lyreen sub-catchment (Lyreen_SC_010) drain the lands south of Maynooth, including most of Maynooth town and the townlands of Straffan, Clane and Rathcoffey. The land west and downstream of the River Lyreen and Rye Water convergence, drain the Liffey sub-catchment (Liffey_SC_080).

Refer to **Figure 3.7** in **Appendix B**. The River Rye Water flows eastwards and into the River Liffey at Leixlip. The River Liffey continues to flow eastwards and into Dublin Bay.

The Royal Canal is directed through the Dublin suburbs of Blanchardstown and Drumcondra before joining the River Liffey estuary at the North Wall Quays, approximately 23km east of Maynooth.

6.6.2 Flooding

Kildare County Council is part of the Eastern Catchment Flood Risk Assessment and Management (ECFRAM) Study.

The ECFRAM Study was carried out under the EC Directive on the Assessment and Management of Flood Risks 2007 which was brought into Irish legislation under the EC (Assessment and Management of Flood Risks) Regulations 2010, S.I. No. 122 of 2010. The catchments are divided into Units of Management (UoM) or Hydrometric Areas (HA) (UoM match HA within the ECFRAM Study area). Maynooth lies within the HA/UoM 09 (Liffey-Dublin Bay)³.

HA09 is described as a relatively urbanised catchment containing Greater Dublin and the surrounding commuter belt. The principal source of flooding is fluvial. Within the HA/UoM of the ECFRAM, there are 19 Areas of Further Assessment (AFA) of which the Maynooth AFA is categorised as having a fluvial flood risk.

According to the OPW⁴, two flood relief schemes have been complete in the Maynooth area; for the Morrell River in 2003 and in Lyreen/Meadowbrook completed in 2002. The existing Maynooth (Lyreen Meadowbrook) Flood Relief Scheme was initiated in 2001 following major flooding in November 2000. The scheme works, included cleaning 4 kilometres of the Lyreen River channel and 1.6 kilometres of the Meadowbrook River channel, cleaning / repairing / replacing culverts, together with cleaning out aqueducts at Bond Bridge and Jackson's Bridge.

³ Eastern CFRAM Study – HA09 Hydrology Report (2013) OPW.

⁴ OPW Summary of Major Flood Relief Schemes, December 2017,

https://www.opw.ie/en/media/171130_%20November_%20December%20Website%20Material.pdf

The scheme also provided trash screens and flap valves on channels, where appropriate, and repairing a damaged wall at Parsons Lane. The scheme provides increased flood protection for 30 properties against flooding from the Meadowbrook and Lyreen Rivers (OPW5).

A Strategic Flood Risk Assessment (SFRA) has been carried out as part of this SEA. The findings of the SFRA demonstrate that the risk of fluvial, pluvial and groundwater flooding was deemed to be low. The most likely source of flooding is due to pluvial flooding but this is deemed to be low risk as all development will be required to be built in accordance with SuDS (sustainable drainage systems) principles and in compliance with the surface water and drainage policies of the Maynooth LAP and Kildare County Development Plan.

6.6.3 Water Quality

Since 2000, Water Management in the EU has been directed by the Water Framework Directive 2000/60/EC (WFD).

The WFD has been transposed into Irish legislation by the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003) and requires that all member states implement the necessary measures to prevent deterioration of the status of all waters - surface, ground, estuarine and coastal - and protect, enhance and restore all waters with the aim of achieving good status by 2015.

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. Maynooth falls within the Eastern River Basin District (ERBD).

The EPA has determined that the River Lyreen, which flows through the amended LAP boundary area is of 'poor' status based on water quality, ecology and morphology. Refer to **Figure 3.7** in **Appendix B**.

As part of the implementation of Article 5 of the EU Water Framework Directive 2000/60/EC, a baseline risk assessment was completed by the EPA for every water body within each River Basin District from 2007-2015. 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 water body 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 meeting the standards of the WFD. This information was used to inform the setting of objectives for water bodies and the measures that need to be taken to achieve those objectives. The River Basin Management Plan for Ireland 2018-2021 reports that 44% of rivers characterised fall within the 'Not at Risk' category and 30% are 'At Risk'. The River Lyreen was classed as "At risk" of not achieving good status under the WFD risk score system, refer to Figure 3.8 in Appendix B.

Nutrient Sensitive Waters comprise nitrate vulnerable zones designated under the Nitrates Directive (91/676/EEC) and areas designated as sensitive under the

⁵ Office of Public Works Flood Plans (www.floodinfo.ie/map/loodplans/)

Urban Waste Water Treatment Directive (91/271/EEC). There are no 'Nutrient Sensitive' rivers identified within the amended LAP boundary.

Downstream of the River Rye Water, the River Liffey from Leixlip and downstream is classed as being a Nutrient Sensitive River and in a Nutrient Sensitive Area. The Liffey Estuary is a Nutrient Sensitive Estuary.

The water quality of canals is based on their ecological potential rather than ecological status as they are artificial water bodies. The Royal Canal Main Line water quality was classed as having Good ecological potential for the most recent reported monitoring period 2013 - 2015. Water quality potential assessment is based upon macroinvertebrate indicators as indicators of the biological conditions of the canals.

6.6.4 Hydrogeology

The European Communities Environmental Objectives (Groundwater) Regulations, 2010 (S.I. No. 9 of 2010) give effect to the requirements under the Groundwater Directive 2006/118/EC and the environmental objectives established for groundwater under the Water Framework Directive 2000. The Groundwater Regulations 2010 includes measures to protect, enhance and restore all bodies of groundwater.

Maynooth is situated in the Dublin groundwater body (Code IE_EA_G_008). This groundwater body extends from the Dublin coast eastwards to Kilcock, County Kildare. This groundwater body is of 'Good' status under the WFD Groundwater Quality Status (2010-2015), refer to **Figure 3.11** in **Appendix B**.

As discussed in Section 6.6.3, as part of the implementation of Article 5 of the EU Water Framework Directive 2000/60/EC, a baseline risk assessment was completed by the EPA for every water body within each River Basin District from 2007-2015. Groundwater Risk looks at the current water quality and trends and is used to highlight waterbodies that are at risk of deteriorating or being at less than Good status in the future. The revised Maynooth LAP boundary lands sit within the Dublin groundwater body (Code IE_EA_G_008) which has been projected as being 'Not at Risk' in the future, refer to **Figure 3.12** in **Appendix B**.

Groundwater vulnerability is generally classed as being of 'moderate' or 'high' vulnerability with isolated areas of 'extreme' and 'rock' where there are rock outcrops. Refer to **Figure 3.10** in **Appendix B**.

The majority of bedrock underlying the amended LAP boundary land is a classified as a 'Locally Important Aquifer' (GSI). This represents bedrock that is 'Moderately Productive only in Local Zones'. Intersecting this in a southwest to northeast direction is the Tober Colleen geological formation, classed as a 'Poor Aquifer' and 'Bedrock which is generally unproductive except for local zones'. This reflects the properties of the calcareous shale, limestone conglomerate of the bedrock.

The GSI database showed that there are no Public Supply Source Protection Areas within the amended LAP boundary. The nearest such area is approximately 8km northeast of Maynooth town. Groundwater features and source protection zones

within and around the amended LAP boundary are shown in **Figure 3.9** in **Appendix B**.

As described in Section 6.4.6, the Rye Water Valley/Carton SAC (Site Code 001398) is designated in part for the Annex I habitat it contains. Petrifying Springs are listed in Annex I of the European Habitats Directive (92/43/EEC). The springs are fed by mineral rich groundwater and support a number of species including Blue Fleabane (*Erigeron acer*) which is listed in the IUCN Red Data Book⁶.

6.6.5 Relevant Issues

There are a range of existing pressures on the water resources of the region. Many of these pressures 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 issues were considered during the plan preparation:

- 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 (OPW/DEHLG, 2009).
- 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 levels; and
- Adhering to EPA wastewater licence discharge limits.

6.6.5.1 Modification

Physical modifications have a direct impact on surface water systems through the alteration of habitats, and by indirectly affecting natural processes through the alteration of ecosystems, by reducing their diversity, distribution and population.

⁶ International Union for Conservation of Nature,
https://portals.iucn.org/library/sites/library/files/styles/publication/public/book_covers/BC-RD-1978-002.jpg

Land use practices such as agriculture, forestry and urban expansion can have an indirect effect, manipulating the extent of water draining from the land, which can lead to an increased flood risk to properties and development.

6.6.5.2 Discharges

Inadequately treated effluents and spills or leakage from foul water sewer systems networks can lead to the pollution of the receiving waters. These pollutants can lead to a deterioration in water quality with subsequent downstream uses being impacted negatively e.g. water dependant ecosystems, potable water supplies, industrial or agricultural abstraction, fishing etc. Current estimates for the GDA 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 produce direct discharges to both surface and groundwater.

6.6.5.3 Extraction

The lowering of water tables through groundwater extraction whether for drinking water, industrial use or through construction practices can cause problems in the context of the hydrological regime of groundwater dependant sites.

Construction activities in particular can lead to the mobilisation of contaminants and have the potential to significantly impact groundwater and subsequently surface water quality.

6.6.5.4 Climate Change

The effect of climate change on the hydrological regime of the planet is difficult to predict, even more so for a small region; however, there is the potential for heavier and prolonged rainstorms to cause more flash flooding, which can lead to an increase in diffuse pollution loads from soil runoff and increasing demand for flood alleviation, control and relief schemes.

Conversely, 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. Also, temperature fluctuations may give invasive alien water species a competitive advantage and alter aquatic ecosystems further.

6.7 Air, Noise and Climate

6.7.1 Air Quality

The EPA measures the levels of a number of atmospheric pollutants throughout Ireland in order to measure compliance with Air Quality Standards Regulations,

2011 (S.I. No. 180 of 2011). For the purposes of monitoring in Ireland, four zones are defined in the Regulations:

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

Maynooth is located in Zone C. The Air quality in Zone C as reported in the EPA report ‘Air Quality in Ireland 2016’ is summarised in **Table 9** below.

Table 9: Average Air Quality Assessment Zone C Concentrations for 2016 compared to Air Quality Standards

Parameter	Zone	Average measured concentration 2016 ($\mu\text{g}/\text{m}^3$)	Air quality standard ($\mu\text{g}/\text{m}^3$)
NO ₂	Zone C	9.25	40
SO ₂	Zone C	16.5	20
CO	Zone C	2	10
Ozone	Zone C	97.75	120
PM ₁₀	Zone C	15	40
PM _{2.5}	Zone C	10	20
Benzene	Zone C	0.2	5

The Environmental Protection Agency manages the National Ambient Air Quality Network. This Network sets legislative limit and target values for protection of human health and vegetation. According to the ‘Air Quality in Ireland Report 2016’ no levels above the EU limit values were recorded in Ireland in 2016.

The EPA 2016 dioxin survey shows that concentrations of dioxins and similar pollutants remain at a consistently low level in the Irish environment.

Current and future challenges to air quality in Ireland were identified as follows:

- Reduction of solid fuel use;
- Efficient traffic management and provision of choice in terms of public transport in towns; and
- Trans-boundary impacts of ozone, to which Ireland’s air mass is subject.

6.7.2 Radon

The Radiological Protection Institute of Ireland (RPII) conducted a survey of radon in domestic dwellings in Ireland between 1992 and 1999. For the survey, the country was divided into 10km square grids with a minimum of five dwellings surveyed per grid square. Radon measurements were made over three months. Radon gas concentration for this survey was measured in Becquerel per cubic

metre (Bq/m³). The Irish government adopted an annual average radon gas concentration of 200 Bq/m³ as the national Reference Level above which remedial action to reduce the indoor radon level in a dwelling should be considered.

To assess the probable radon gas concentration at the proposed site, data was extracted from the EPA website.

The Radon Map classifies the grid square within which the study site is located as being a High Radon Area where more than twenty per cent of homes in this 10km grid square are estimated to be above the Reference Level.

6.7.3 Noise

The Environmental Noise Directive (END) (2002/49/EC) requires that action is taken by each member state, with a view to preventing and reducing environmental noise where necessary (particularly where exposure levels can induce harmful effects on human health) and to preserving environmental acoustic quality where it is good. The relevant local authorities have been designated by the Environmental Noise Regulations (S.I. No. 140 of 2006), as the bodies charged with development and making of 'Noise Action Plans'.

Kildare County Council prepared the second Noise Action Plan for County Kildare in 2013. This Noise Action Plan primarily considers the long term environmental noise impact from road, rail and air traffic noise sources, and sets out an approach to review noise impact levels near to the major sources 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 Kildare there are no major agglomerations or major airports subject to noise mapping or action planning.

Strategic Noise Maps have been prepared for all roads deemed to fall within the threshold of three million vehicles a year. The total length of identified major roads included within the strategic noise mapping was 258 km which amounts to 10.2% of the total road network which is relatively large compared to other counties. This broke down into 157 km of motorways and national roads, 94.4 km of regional roads and 6.4 km of local road.

The Noise Action Plan addressed a number of sections of major roadway that are located either within, or immediately adjacent to Maynooth which qualified for noise mapping and, as such were subject to consideration for action planning. Major roads in Maynooth which qualified for noise mapping are detailed in **Table 10**.

Table 10: Major Roads in Maynooth which qualify for Noise Mapping

Road Type	Description
National Roads	M4/N4
Regional Roads	R406, R405, R148
Local Roads	No local roads in proximity to Maynooth, qualify for Noise Mapping.

The plan concludes that there are an estimated 969 people in Kildare above the L_{den} threshold for noise from road traffic sources, and an estimated 5,564 people above the L_{night} threshold – 3,674 from road traffic sources and 1,890 from rail traffic sources.

The plan notes that a programme for further assessment and the implementation of potential noise mitigation measures in areas above the threshold of assessment will be required. The general approach to be taken by Kildare County Council in managing the environmental noise in the area will involve:

- Noise reduction at source,
- Land use planning adapted to noise goals,
- Procedures to reduce noise impact, and
- Operating restrictions to reduce noise emissions.

Kildare County Council has developed a detailed Programme of Works for the duration of the Noise Action Plan (2013 to 2018) and proposed to implement the programme subject to the availability of the requisite technical staff, expertise and financial resources.

6.7.4 Climate

The existing climate for Maynooth corresponds with the general climatic conditions for the whole country which is dominated by the Atlantic Ocean and its air and oceanic currents. Consequently, the region does not suffer from extremes of temperature. According to Met Éireann, average annual temperature is about 9°C. Mean annual wind speed varies between about 4 m/sec in the east midlands and 7 m/sec in the northwest.

Average rainfall varies between about 800 and 2,800 mm. Rainfall accumulation tends to be highest in winter and lowest in early summer.

According to the United Nations Integrated Panel on Climate Change, in line with the global picture, 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.

The year 2006 was the warmest year recorded in Ireland since the record-breaking year of 1995 at both Malin Head and Phoenix Park, which have observations dating back over 100 years, and also at Casement Aerodrome, Kilkenny and Rosslare.

The year 2016 has been recorded as the warmest year since 2006, and the last 10 years have been the warmest decade.

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. Increases in total annual rainfall in parts of the west and north have been observed, with some increase in the number of days with heavier rain but there is no clear pattern of change in other areas.

While the national scale of potential change is evident, translating the potential effects of climate change to a region is a process of inference on what will happen to Ireland at large being reduced to a regional scale. Temperatures in Ireland 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 two-day extreme rain amounts, especially in northern areas. Taking the projected precipitation changes into account, there will be the potential for a significant 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 a consequence of stormy weather there exists the potential for flash flooding and erosion which would affect a wide range of ecosystems and economic sectors.

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 CO₂ 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.

The EPA produces greenhouse gas emission projections on an annual basis for all sectors of the economy. According to the latest set of projections (April 2017), based on two different scenarios, Ireland's emissions in 2020 could be in the range of 4-6% below 2005 levels. The projection figures indicate Ireland is likely to exceed its annual targets over the remainder of the period to 2020.

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.

6.7.5 Relevant Issues

6.7.5.1 Air

Currently there are no significant concerns with regard to air quality. There are likely to be slightly elevated levels of vehicle emissions within the urban area of Maynooth however, this is the same for all urban areas. Dust and PM₁₀ can be an issue locally during the construction phase of developments.

A recent EPA report stated that emissions from cars (particulate matter and nitrogen oxides) are a major health concern and a climate change concern. However, the prospects for compliance with targets under the new EU National Emissions Ceilings Directive (2016/2284/EU) are more positive. With the exception of NO_x emissions, emissions of acidifying gases are expected to achieve prescribed target emission levels within the next few years. NO_x emissions are too expected to decline but are likely to remain considerably above the target limit.

6.7.5.2 Noise

Potential future noise mapping must be taken into account during the development of the plan. Consideration will need to be given to the following scenarios:

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

6.7.5.3 Climate

As previously mentioned in the Section 6.6 Hydrology and Hydrogeology, climate change will have an 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.

Consideration will need to be given to the following scenarios:

- Climate change mitigation and adaptation, including effects of severe events including flooding and snow fall.
- Changes in greenhouse gas emissions from increased transport, industry, development etc.

6.8 Archaeological, Architectural and Cultural Heritage

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

- Archaeological Heritage;
- Architectural Heritage; and
- Vernacular Heritage.

Kildare County Council published the County Kildare Heritage Plan 2005-2011 in 2005. The Heritage Plan outlined an action plan for the conservation, preservation and enhancement of Kildare's heritage including natural and built heritage.

The built heritage of Kildare 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 the county.

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

6.8.1 Archaeological Heritage

'Archaeological Heritage' can be described as the study of past human societies through their material remains and artefactual assemblages. Our knowledge and understanding of past societies, with no written record, is enhanced by the study of archaeological remains. Archaeology includes all pre-1700 sites and all levelled/buried features of any date. The sites and monuments record (SMR) is an inventory of all known archaeological monuments in the State, accessible from the National Monuments Service (NMS) website. The Archaeological Survey of Ireland (ASI) collated the register of archaeological monuments, the SMR. Refer to **Figure 3.14 in Appendix B** for the Sites and Monuments in Maynooth and surrounds. There are 23 No. SMR sites within the amended LAP boundary

(including those listed on the Record of Monuments and Places and National Monuments).

Recorded Monuments

The Record of Monuments and Places (RMP) was established under Section 12 (1) of the National Monuments (Amendment) Act 1994 (S.I. 17 of 1994). Sites recorded on the RMP received statutory protection under the National Monuments Act.

It is an offence to interfere with any of the sites or monuments listed in the RMP without first giving two months' notice in writing to the NMS at the Department of Culture, Heritage and the Gaeltacht.

The legislation requires a list of all known archaeological monuments, places of archaeological interest and maps indicating the location of each with an accompanying set of constraint maps, be sent to all Local Authorities. These lists were issued to the Local Authorities between 1995 and 1998.

The RMP list was issued to Kildare County Council in 1995 and includes the SMR sites Kildare County that are protected the National Monuments (Amendment) Act 1994 (S.I. 17 of 1994). These sites are referred to as Recorded Monuments. There are seven Recorded Monument sites within the amended LAP boundary that receive statutory protection under the National Monuments Act. These RMP sites are listed in **Table 11** and shown in **Figure 3.14** in **Appendix B**.

Table 11: Recorded Monuments located within the Maynooth LAP boundary.

RMP Number	Description
K005-010	Ring-ditch
K005-01101	Enclosure
K005-01102	Road – road/track way
K005-012	Field system
K005-014	Architectural feature – medieval doorway
K005-015	Castle – Anglo-Norman masonry castle
K005-016	Church

The NMS (under of the Department of Culture, Heritage and the Gaeltacht) will advise on the protection applying to any particular monument or place under the National Monuments Acts by reason of it being entered in the Record of Monuments and Places. The NMS should be consulted if there is any doubt as to the status of the site.

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 Culture, Heritage and the Gaeltacht two months' notice in writing.

National Monuments

A National Monument receives statutory protection and is described as ‘*a monument or the remains of a monument the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest attaching thereto*’ (National Monuments Act, 1930, Section 2). National Monuments may be in the ownership or guardianship of the Minister or a Local Authority or may be subject to a preservation order or temporary preservation order. Written consent is required for any works at or in proximity to the monument. The NMS maintains a list of all National Monuments by county on their website (www.archaeology.ie).

The current list for Kildare was published in March 2009 and lists one site within the amended LAP boundary as a National Monument in State care (ownership and guardianship). Maynooth Castle (KD005-015) is listed as a National Monument under State ownership. Refer to **Figure 3.14** in **Appendix B**.

6.8.2 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.

Record of Protected Structures

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).

Maynooth has an abundance of structures of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. Such features are contained in the Record of Protected Structures (RPS). The RPS is a live register maintained by Kildare County Council and published in the CDP (Appendix 3 of CDP 2017 - 2023), refer to **Figure 3.15** in **Appendix B**. Owners and occupiers of protected buildings are required to ensure that buildings do not become endangered through harm, decay or damage. The amended LAP boundary will include additional Protected Structures within the LAP boundary, the Lime Kiln (B06-06) in Railpark is listed as a Protected Structure under the CDP.

The Carton Demesne is a protected structure including Carton House (B06-09) and the interiors and gardens of the house (B06-09i). The Carton Demesne which includes the house and extensive grounds is assigned a specific Protected Structure Objective (PSO 6) in the CDP. The CDP objective PSO 6 is to ‘*Preserve the views to and from Carton House within the Demesne walls*’. The

Kildare CDP assigns the Carton Demesne a Protected Area as shown in Map 12.12 in the CDP.

The Maynooth LAP 2013 - 2019 makes particular reference to Carton House Demesne and associated features such as Lime Walk/Carton Avenue which is within the town boundary.

Table 12 lists the protected structures within and around Maynooth.

Table 12: List of Protected Structures in and around Maynooth (Kildare County Development Plan 2017 - 2023)

RPS No.	NIAH Ref.	Structure Name	Townland	Description
B05-01		Laraghbryan Church (in ruins)	Laraghbryan East	Church and Graveyard
B05-03		Laragh House	Laragh Demesne	House
B05-09	11900506	Maria Villa	Mariavilla	House
B05-10	11803067	Butler's House, Convent Lane, Dillon's Lane	Maynooth	House
B05-11	11803050	Buckley House, Main Street	Maynooth	House
B05-12	11803045	Harbour House (Bean House), Leinster Street	Maynooth	House
B05-13	11803043	Nuzstop, Main Street	Maynooth	House with shop
B05-14	11803039	Lyreen House, Court House Square	Maynooth	House
B05-27	11803090	Finnerty House, Dublin Road, Maynooth	Maynooth	House
B05-28	11803091	D.R. Glas, Ryebank House, Dublin Road, Maynooth	Maynooth	House
B05-29	11803092	Dublin Road, Maynooth	Maynooth	House
B05-30	11803095	44 Mariaville, Dunboyne Road, Maynooth	Maynooth	House
B05-31	11803098	Leinster Street, Maynooth	Maynooth	House
B05-32	11803104	141 Greenfield Cottages	Greenfield	House
B05-33	11803106	Maynooth Railway Station (former), Straffan Road (off)	Greenfield	House
B05-34	11803109	202 Railpark	Railpark	House
B05-36	11900505	Jackson's Bridge (and Lock)	Laraghbryan East	Bridge
B05-43	11803020	Rye House, Main Street, Maynooth, Co. Kildare	Maynooth	Shop
B05-44	11803022	Main Street, Convent Lane, Maynooth, Co. Kildare	Maynooth	House
B05-45	11803035	Bradys, Main Street, Courthouse Square, Maynooth	Maynooth	Public House

RPS No.	NIAH Ref.	Structure Name	Townland	Description
B05-46	11803041	Court House Square, Main Street, Maynooth, Co. Kildare	Maynooth	House
B05-47	11803042	The Leinster Arms, Main Street, Maynooth	Maynooth	Public House
B05-48	11803044	Dawson's, Main Street, Maynooth	Maynooth	Shop
B05-49	11803049	Maynooth Garda Siochana Station, Leinster Street, Main Street	Maynooth	Garda Station
B05-50	11803055	Mill Street, Maynooth, Co. Kildare	Maynooth	Two-storey building, formerly a house
B05-51	11803078	28 Leinster Cottages, Double Lane/Back Lane, Maynooth	Maynooth	House
B05-52	11803079	Pound Lane, Maynooth, Co. Kildare	Maynooth	Church Hall/Parish Hall
B05-53	11803087	William Bridge, Maynooth, Co. Kildare	Maynooth	Bridge
B05-54	11803093	Geraldine Hall, Leinster Street, Maynooth, Co. Kildare	Maynooth	School (former)
B05-55	11803096	Carton (House), Main Street, Dublin Road, Maynooth	Maynooth	Gate Lodge
B05-56	11803099	Maynooth Rectory (former), Parson Street, Maynooth	Maynooth	House
B05-57	11803100	Saint Mary's Church, Parson Street, Maynooth	Maynooth	Church
B05-58	11803101	Saint Mary's Catholic Church, Mill Street, Maynooth	Maynooth	Church
B05-60	11803103	Old Mullen Bridge, Royal Canal Main Line, Maynooth	Maynooth	Canal Bridge
B05-62	11803107	Maynooth Railway Station, Straffan Road (off), Maynooth	Greenfield	Signal Box
B05-63	11803108	Maynooth Parochial House, Mill Street, Maynooth	Maynooth	House
B05-64	11803112	St. Patrick's College (Junior Hospital), Parson Street	Collegeland	Hospital (former)
B05-65	11803113	St. Patrick's College (Entrance Block), Parson Street	Collegeland	University
B05-66	11803114	St. Patrick's College (Saint Patrick's H, Parson Street	Collegeland	Engine House
B05-67	11803117	St. Patrick's College (Loftus Hall), Parson Street	Collegeland	Exam Hall
B05-68	11803118	St. Patrick's College, Parson Street, Maynooth	Collegeland	Building misc.

RPS No.	NIAH Ref.	Structure Name	Townland	Description
B05-69	11803123	St. Patrick's College (Rhetoric House), Parson Street	Collegeland	Building misc.
B05-70	11803125	St. Patrick's College (Riverstown Lodge), Parson Street	Collegeland	Building misc.
B05-71	11803126	St. Patrick's College (Junior House/Logic Ho, Parson St.	Collegeland	Building misc.
B05-72	11803127	St. Patrick's College (Collegiate Chapel), Parson Street	Collegeland	Church
B05-73	11803128	St. Patrick's College (The Quadrangle), Parson St., Maynooth	Collegeland	Building misc.
B05-74	11803133	Bond Bridge, Royal Canal Main Line	Maynooth	Canal Bridge
B05-75	11803134	St. Patrick's College (Senior Infirmary), Parson St., Maynooth	Collegeland	Building misc.
B05-76	11803138	Pound Lane, Maynooth, Co. Kildare	Maynooth	House
B06-06		Lime Kiln	Railpark	Lime Kiln
B06-09		Carton House and associated outhouses, stables and yards	Carton Demesne	House
B06-09i		Interiors of Carton House Demesne (House and Gardens)	Carton Demesne	House and Garden
B06-12	11803102	Castle View House, Parson Street	Maynooth	House
B06-13	11900601	Pike Bridge, Royal Canal Main Line	Railpark	Canal Bridge

6.8.2.1 Architectural Conservation Area

Kildare County Council has designated a proposed Architectural Conservation Area (ACA) that includes a number of *'buildings and structures that, while not of sufficient merit to warrant individual listings are nevertheless important in the context of their contribution to the streetscape and the character of the town'* (Maynooth LAP 2013-2019). **Figure 3.16** in **Appendix B** shows the ACA for Maynooth.

6.8.3 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, such as the grand estate

houses of the gentry, churches and public buildings, 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.

6.8.4 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 resource.

The following issues were considered during the plan preparation:

- Impacts on sites of archaeological, architectural and vernacular heritage through development;
- Impacts on historic / heritage landscapes through development;
- Loss of vernacular heritage as a result of evolution of society and building use; and
- Impacts on considerable built heritage due to continued high levels of vacancy / abandonment and potential dereliction unless addressed.

6.9 Landscape and Visual

6.9.1 Landscape

Landscape embraces all that is visible when one looks across an area of land. As well as being an important part of people's lives, giving individuals a sense of identity and belonging, landscape is the context in which all changes take place. The landscape of County Kildare comprises a central plain bounded to the east by the Kildare uplands, which lie at the foot-hills of the Kildare and Dublin Mountains. The Curragh, the boglands of north-west Kildare and the fertile lowlands of the south all comprise part of the central plain. The plain lands are interrupted by two groups of isolated hills, the Chair of Kildare and the Newtown Hills. The location of these hills within the central plain has a considerable impact on the landscape of Kildare. Inland waters comprise the River Liffey, River Barrow, River Slate, River Boyne, Royal Canal, Grand Canal and Rye Water River that traverse the county, providing important landscape features.

The Maynooth LAP area is located in the eastern part of County Kildare, near its borders with County Kildare and Dublin. The River Castlesize, a tributary of the River Liffey provides an important landscape feature.

A Landscape Character Assessment (LCA) of the county was prepared in 2004. The LCA 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 15 No. geographically specific LCAs. The LCA of interest to the Maynooth LAP is the Northern Lowlands.

In order to inform the LCA, 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.

The sensitivity of the Northern Lowlands is deemed to be of ‘Low-Sensitivity’ and is defined as an area *‘with the capacity to generally accommodate a wide range of uses without significant adverse effects on the appearance or character of the area.’*

The CORINE Land Cover (CLC) inventory is a Pan-European land use and land cover mapping programme. It supplies spatial data on the state of the European environmental landscape and how it is changing over time. CORINE Land Cover mapping classifies land cover under various headings. The main land-use in the Plan area is discontinuous urban fabric, and pastures.

Discontinuous urban fabric comprises residential areas around the edge of urban district centres, and certain urban districts in rural areas. Pastures are dense grass cover of floral composition, dominated by Gramineae species which are not under a rotation system. They are mainly used for grazing, but may be harvested mechanically.

Refer to **Figure 3.17** in **Appendix B** for CORINE Landcover Data in the vicinity of Maynooth.

Sensitivity mapping was carried out as part of this baseline study (and the Scoping Report). The mapping showed that the Royal Canal has a low to moderate sensitivity. This is attributed to a number of weighted factors such as the Royal Canal’s status as a pNHA and protected views associated with the canal. **Figure 3.19** in **Appendix B**.

6.9.2 Scenic Routes and Protected Views

Scenic routes and protected views consist of important and valued views and prospects within the county. The Kildare County Development Plan 2017-2023 outlines all the views and prospects in the County which have been identified as being worthy of protection.

It is policy (PS6) under the CDP *‘maintain the views to and from Carton House and within Carton Demesne.’*

A number of viewpoints and scenic routes have been identified from the Landscape Character Assessment (LCA). There are two scenic viewpoints in the Maynooth LAP study area (RC6 and RC7) and two on the boundary (RW4 and RC8). RC6

and RC7 are views at Mullen Bridge Railpark and Bond Bridge respectively. RC8 is a view from Jackson Bridge of the Royal Canal and RC4 is a view from Kildare Bridge in Carton Demesne of the River Rye Water.

The current LAP also identifies views and prospects to be protected:

- Of College Gates and Castle;
- Of Royal Canal from all bridges;
- Pike Bridge;
- Bond Bridge;
- Along the Carton Avenue/Main Street Axis;
- Off the Harbour along Leinster Street; and
- The College Spire from Main Street.

The location of the protected views and prospects are illustrated in **Figure 3.18** in **Appendix B** for in the amended LAP boundary.

6.9.3 Relevant Issues

Existing pressures on landscape and visual resources 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.
- Impacts on designated protected landscapes, heritage landscapes and protected views as a result of development.
- Impacts due to development on the ecological components of the landscape.

6.10 Material Assets

The term ‘Material Assets’ refers to all infrastructure and local services including; transportation, water supply, wastewater treatment and discharge, waste management services, electricity supply, telecommunications etc.

6.10.1 Water Supply

The provision of an adequate supply of water and wastewater treatment facilities is critical to facilitate and sustain the growth of Maynooth over the lifetime of the Local Area Plan 2018 - 2024 and beyond. As of January 2014 Kildare County Council no longer has any direct control in relation to the provision of such services. The delivery, integration and implementation of water and wastewater projects and infrastructural improvements are now the responsibility of the newly established State body, Irish Water. Kildare County Council will work closely with Irish Water to ensure that the Kildare County Development Plan and the

draft Maynooth Local Area Plan continue to align with both the National Spatial Strategy and the Regional Planning Guidelines and that the provision of water/wastewater services will not be a limiting factor in terms of targeted growth.

The majority of the water supplied in County Kildare comes from the Dublin City Waterworks at Ballymore Eustace and this water is delivered by the Poulaphouca Regional Scheme to the Maynooth LAP area.

A Remedial Action List (RAL) of problematic drinking water supplies is released by the EPA on a quarterly basis. The Remedial Action list 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. The Poulaphouca Regional drinking water supply which serves Maynooth was not included on the EPA Remedial Action List Q4 of 2017 (last published January 2018).

Irish Water is currently preparing the National Water Resources Plan (NWRP) which will set out how water supply and demand for drinking water will be maintained over the next 25 years. The first consultation period concluded in December 2017 and the second round of public consultations are due to open in the summer of 2018.

6.10.2 Wastewater Treatment

The wastewater treatment plant at Leixlip treats wastewater from Maynooth. The Leixlip plant is under the Lower Liffey Valley Regional Sewerage Scheme and also receives waste water from Kilcock, Celbridge, Leixlip and Straffan. The plant was upgraded in 2016 and capacity was increased from 80,000 PE to 150,000 PE. The plant operates under an EPA Discharge Licence, licence number D0004-02.

6.10.3 Transport Infrastructure and Facilities

Road Network

The development of the National route network has been critical to the development of Maynooth and the County as a whole. The available road infrastructure has made Maynooth and its surrounding region attractive for commuters to the GDA. The M4 to the south of the town provides an excellent link to the M50 and central Dublin area.

The National Development Plan 2018-2027 lists the M4 Maynooth to Leixlip section of the national road network among the projects that will be '*progressed through pre-appraisal and early planning during 2018 to prioritise projects which are proceeding to construction in the National Development Plan*' (National Development Plan 2018-2027).

Improvements to the Main Street in Maynooth were also completed in April 2013.

Public Transport

There are two direct rail lines that serve Maynooth train station; the Commuter line from Sligo to Dublin Connolly and Longford to Dublin Pearse.

Presently there is one daily weekday service (each way) from Maynooth direct to Bray. The National Development Plan 2018 - 2027 includes high-frequency electrified service for Maynooth (and M3 Parkway) on the Maynooth/Sligo as part of the DART Expansion Programme.

Maynooth is also served by a number of coach and bus services run by Bus Éireann and private operators, including an internal local bus service.

The Council in association with the National Transport Authority is working on the completion of designs for bus stop improvements on the Maynooth Main Street.

Walking and Cycling

Maynooth is located along the planned Galway to Dublin Greenway cycle route. The Kilcock to Maynooth section opened in December 2017. The Royal Canal is an important recreational feature of the town as well as environmental. It is used by walkers and cyclists and provides a safe area for vulnerable road users away from vehicle traffic. The nearby Carton Demesne is also a popular area used by walkers.

6.10.4 Waste Management

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

- AES;
- Mahons Recycling;
- Oxigen;
- Ray Whelan; and
- Thorntons.

The Waste Facility Permit and the Certificate of Registration Database is a register for waste facility permits and certificates of registration issued by local authorities under the Waste Management (Facility Permit and Registration) Regulations, S.I. No. 821 of 2007, as amended.

According to the Local Authority Waste Facility Register, there are no licensed waste facilities within the LAP boundary.

The nearest licensed EPA waste facility is Ormonde Organics in Rathcoole, County Dublin, approximately 12km south east of Maynooth.

6.10.5 Relevant Issues

The following issues will require consideration during the preparation of the Proposed Amendment:

Transportation:

- Achieve a sustainable balance between public and private transport modes;
- Protect lands planned for future public transport requirements from development;
- Need for significant traffic management / calming measures, provision of integrated pedestrian / cyclist facilities and reduction in extent of on street car parking, etc.; and
- Visual impact of infrastructure on landscape.

Water and Waste Water Services:

- Ongoing maintenance of water supply and wastewater treatment infrastructure.

Waste Management:

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

Energy Supply:

- Over-reliance on non-renewable energy sources;
- Energy efficiency and associated greenhouse gas emissions; and
- Visual impact of infrastructure on landscape.

Telecommunications:

- Visual impact of infrastructure in telecommunications, particularly in rural areas.

6.11 Interrelationships

The interactions and interrelationships between the SEA environmental baseline topics is an important consideration for the environmental assessment. **Table 13** outlines the key identifiable interrelationships arising in this SEA. These potential interrelationships are taken into account throughout the assessment process. While all environmental topics interact with each other to some extent only the significant relationships on a regional level were considered. Direct relationships are highlighted in red while indirect relationships are highlighted in blue.

Table 13: Key interrelationships between environmental topics.

	Biodiversity	Population & Human Health	Soils and Geology	Hydrology and Hydrogeology	Air, Noise & Climate	Heritage*	Landscape & Visual	Material Assets
Biodiversity		Blue	Red	Red	Blue	Blue	Blue	Red
Population & Human Health	Blue		Red	Red	Red	Red	Red	Red
Soils & Geology	Red	Red		Red	Red	Blue	Red	Red
Hydrology and Hydrogeology	Red	Red	Red		Blue	Blue	Blue	Red
Air, Noise and Climate	Blue	Red	Red	Red		Blue	Blue	Red
Heritage	Blue	Red	Blue	Blue	Blue		Red	Blue
Landscape & Visual	Blue	Red	Red	Red	Red	Blue		Red
Material Assets	Red	Red	Red	Red	Red	Red	Red	

* Archaeological, Architectural and Cultural Heritage

In particular is the interrelationship between water (quality and quantity) and biodiversity, flora and fauna, soils and geology and human health and population. Flora and fauna rely directly on the aquatic environment as a habitat but the terrestrial environment can also be strongly influenced by the aquatic environment. A wide range of terrestrial habitats, such as callows and turloughs, rely on the aquatic environment, both surface and groundwaters for their formation and terrestrial fauna and birds can rely on it as a source of food. Water quality is also of particular importance with regard to human health as it provides a source of potable water and provides foodstuffs (e.g. fish and shellfish). Water is also used for leisure and recreational purposes, providing a material asset both for local populations and as part of the tourism economy. The local geology may directly impact air quality due to radon emissions. A further principle interrelationship of note is between water resources and climate. Greenhouse gas emissions associated with energy use during water management activities, such as

treatment of drinking water and wastewater, have the potential to negatively impact on climate through increased contribution to climate change.

As a consequence, more frequent and more intense flooding and drought conditions can affect material assets and human health as well as biodiversity.

7 Alternatives Considered

7.1 Introduction

Under the SEA Directive (2001/42/EC), the consideration of alternatives is a requirement. Article 5(1)⁷ states that:

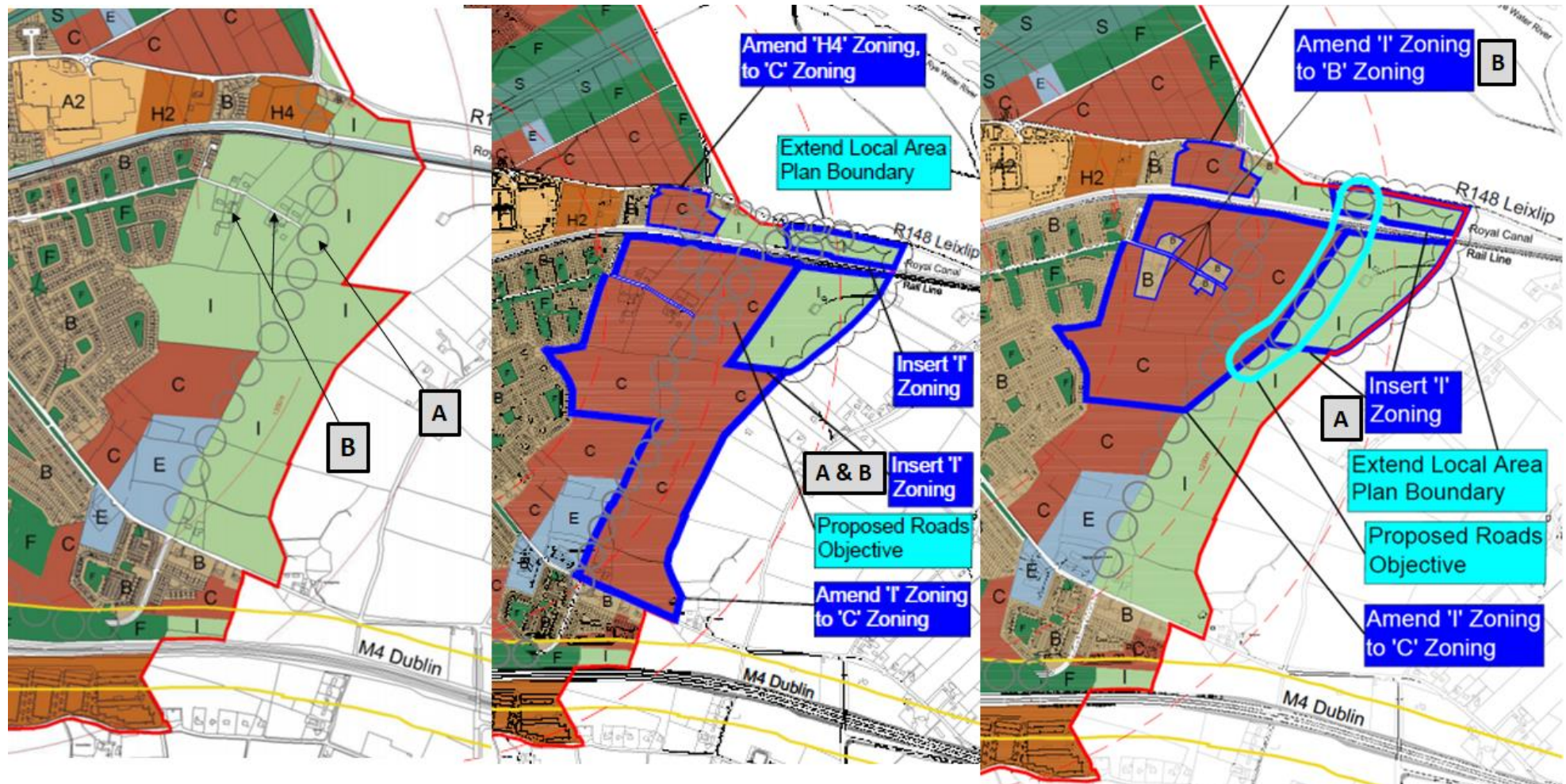
“Where an environmental assessment is required under Article 3(1), an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated.”

7.2 Alternative Considered

Two scenarios were considered as alternatives for the zoning of lands in the eastern part of Maynooth LAP. Refer to **Figure 4** below for both scenarios as well as the existing Land Use Zoning Objectives as per the existing Maynooth LAP 2013 - 2019.

⁷ Directive 2001/42/EC on the assessment of effects of certain plans and programmes on the environment, EC 2001.

Figure 4: The existing Land Use Zoning Objectives (left) as per the existing Maynooth Local Area Plan 2013-2019 , Scenario 1 (centre) and Scenario 2 (right) for alternative zoning configurations considered for the Proposed Amendment No.1. The letters ‘A’ and ‘B’ indicate the variations between Scenario 1 and Scenario 2.



The two alternative zoning scenarios are presented in **Table 14** below. The Existing Scenario is the current Land Use Zoning Objectives for the existing Maynooth LAP 2013-2019.

The main difference between Scenario 1 and 2 is the area (hectares) of land proposed for amended zoning from I – Agriculture to C – New Residential, is less in Scenario 2 than Scenario 1. Also, in Scenario 1 lands zoned as I – Agriculture are amended to C – New Residential in Scenario 1 but these lands are amended to be zoned from I - Agriculture to B – Existing Residential & Infill under Scenario 2.

Table 14: Alternative scenarios 1 and 2 for the Proposed Amendment No. 1.

Existing Scenario	Scenario 1	Scenario 2	Reference in Figure 4
Lands zoned as I – Agriculture.	Amend zoning of I – Agriculture to C – New Residential (55.7 ha) as part of the Railpark South East Quadrant;	Amend zoning of I – Agriculture to C – New Residential (29.6 ha) for the Railpark South East Quadrant;	See A
		Amend zoning of I – Agriculture to B – Existing Residential & Infill.	See B
Lands zoned H4 - Office	Amend zoning of H4 – Office to C – New Residential (2.9ha).	Amend zoning of H4 – Office to C – New Residential (2.9ha).	Same for both scenarios, as shown in Figure.

Scenario 1 and 2 seeks to address the need to fulfil the 2023 Housing Unit Target of 3,542 residential units as set out in the Kildare County Development Plan 2017 - 2023. This housing unit target represents an increase of 1,178 housing units from 2011 – 2017 CDP housing unit targets.

Under the alternative Scenario 1, the additional lands zoned for New Residential as part of this Proposed Amendment will facilitate 1,411 additional residential units as part of the proposed Railpark South East Quadrant on 55.7 ha of land. This will make provision for the delivery of a total of 2,433 additional residential units on ca. 84.9 ha of New Residential zoned land for the Maynooth LAP 2013 - 2019. This figure includes lands which were zoned New Residential as part of the existing Maynooth LAP 2013 - 2019. Scenario 1 seeks to maximise the potential area of land zoned for New Residential for the Railpark South East Quadrant through re-zoning.

Under the alternative Scenario 2, the additional lands zoned for New Residential as part of this Proposed Amendment will facilitate 720 additional residential units as part of the proposed Railpark South East Quadrant on 32.5 ha of land. This will make provision for the delivery of a total of 1,742 additional residential units on ca. 61.7 ha of New Residential zoned land for the Maynooth LAP 2013 - 2019.

This figure includes lands which were zoned New Residential as part of the existing Maynooth LAP 2013 - 2019.

Scenario 2 will provide additional New Residential zoned land under the Proposed Amendment but of a reduced area (hectares) than proposed under Scenario 1 (see No. 1 in **Table 14**). Assessment of Alternatives

Scenario 1 and Scenario 2 are presented below and assessed in **Table 16** against the SEA environmental objectives.

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

Table 15: Impact Ratings

Significance of Impact	
	Neutral effects
	Positive effects
	Negative/adverse effects
	Uncertain

7.2.1 Scenario 1

Scenario 1 seeks to address the increased housing unit target set out in the Kildare CDP 2017-2023, by amending zoning to lands in the eastern part of the Maynooth LAP, including lands along the eastern LAP boundary, from I – Agriculture to C – New Residential, as part of the proposed Railpark South Eastern Quadrant. This will have a positive impact on population and human health by providing additional housing.

Also, lands that were zoned as I – Agriculture under the existing LAP, and have existing residential dwellings are proposed to have zoning amended to C – New Residential.

Scenario 1 includes the amendment lands (2.9ha) zoned for H4 – Office to C – New Residential. This is common to both Scenario 1 and Scenario 2.

7.2.2 Scenario 2

Scenario 2, like Scenario 1, also seeks to address the increased housing unit target set out in the Kildare CDP 2017 – 2023, by amending zoning to lands in the eastern part of the Maynooth LAP, including lands along the eastern LAP boundary, from I – Agriculture to C – New Residential, as part of the proposed Railpark South Eastern Quadrant. However, the overall area (hectares) of greenfield land proposed to have the zoning amended under the Railpark South East Quadrant is less than Scenario 1. This will have a positive impact on population and human health by providing additional housing.

Also, lands that were zoned as I – Agriculture and have existing residential dwellings are proposed to have zoning amended to B – Existing Residential & Infill. This will have a neutral impact on the environment as there is existing development.

Scenario 2 includes the amendment lands (2.9ha) zoned for H4 – Office to C – New Residential. This is common to both Scenario 1 and Scenario 2.

Table 16: Assessment of Alternatives

Scenario	Description of Scenarios	SEA Environmental Objectives								Comments
		Biodiversity	Population & Human Health	Soils and Geology	Hydrology and Hydrogeology	Air, Noise & Climate	Heritage	Landscape & Visual	Material Assets	
1	Amend zoning of I – Agriculture to C – New Residential (55.7 ha) as part of the ‘Key Development Area: Railpark’. [See A & B in Figure 4]. Amend lands (2.9ha) zoned for H4 – Office to C – New Residential.									Increased area of land zoned for New Residential will have a positive impact on population and human health due to the provision of additional residential housing.
2	Amend zoning of I – Agriculture to C – New Residential (29.6ha) for the ‘Key Development Area: Railpark’. [See A in Figure 4]. Amend lands (2.9ha) zoned for H4 – Office to C – New Residential.									Increased area of land zoned for New Residential will have a positive impact on population and human health due to the provision of additional residential housing. The re-zoning will result in the development of undeveloped agricultural lands and will have a potentially negative impact on the other (excluding population and human health) environmental objectives.
	Amend lands to the east of the Local Area Plan from ‘I: Agriculture’ to ‘B: Existing Residential & Infill’. [See B in Figure 4]									This zoning amendment refers to lands that were previously zoned as Agriculture but contain residential units as well as structures associated with agricultural activities. Therefore while the zoning will change, the land is already developed and used for residential development and land use is unlikely to change significantly under this zoning objective. A neutral impact on the environment is envisaged.

7.3 Preferred Scenario

The emerging preferred development scenario for the Proposed Amendment No. 1 to the Maynooth LAP 2013-2019, is Scenario 2 from an environmental perspective.

In Scenario 2, area of greenfield, I – Agriculture zoned land that is proposed to be amended as C – New Residential zoned land is less (29.6 ha) than what is proposed for Scenario 1 (55.7ha). This will give rise to less greenfield land being developed under the lifetime of the LAP and thus have less of a negative impact on the environment.

The rezoning of lands from I - Agriculture to B – Existing Residential & Infill in Scenario 2 is more suitable to the current use of the lands; under Scenario 1 these lands are rezoned C- New Residential.

Scenario 1 will have a greater positive impact on population and human health as it would likely facilitate the building of a greater number of residential houses than Scenario 2. Scenario 2 prioritises amending zoning for lands that are closest to Maynooth town centre and that can utilise the existing road infrastructure.

8 SEA Objectives, Targets and Indicators

8.1 Introduction

The SEA is designed to assess the potential environmental impact of the policies of the amended LAP against the environmental baselines established.

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

8.2 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 guidelines outlined in Section 2. Global, EU and national level legislation, policy and associated environmental objectives were utilised to develop the environmental objectives for the Proposed Amendment.

The objectives outlined below are also placed in the context of and linked into the development of the draft policies and recommendations to ensure that the objectives are appropriate for Maynooth and its environs.

The environmental objectives are also linked to appropriate targets and indicators outlined in the following sections. The environmental objectives are as follows:

Biodiversity

To preserve, protect, maintain and, where appropriate, enhance the terrestrial, aquatic and soil biodiversity, particularly national and EU designated sites and protected species.

Population and Human Health

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

Soils and Geology

Protect soils against pollution, and prevent degradation of the soil resource.

Ensure the sustainable use and re-use of soils.

Hydrology and Hydrogeology

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, in particular a reduction in greenhouse gas emissions and an improvement in air (including noise emissions). Avoid, prevent or reduce harmful effects on human health and the environment as a whole resulting from emissions to air and noise.

Archaeological, Architectural and Cultural Heritage

Promote the protection and conservation of the archaeological, architectural and cultural heritage

Landscape and 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.

8.3 Environmental Targets

Each of the Environmental Objectives has a range of Environmental Targets which the Proposed Amendment is 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 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 sites 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, proposed 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.
- 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, cycling and walking.
- Co-ordinate land use and transportation policies.
- Improve access to recreation opportunities.

Soils and Geology

- 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.
- Re-use excavated material where possible and minimise material sent to landfill.
- Minimise the consumption of non-renewable sand, gravel and rock deposits.

Hydrology and Hydrogeology

- Support the achievement of “good” ecological and chemical status/potential of water bodies in accordance with the Water Framework Directive.
- Minimise flood risk through appropriate management of flood vulnerable zones.
- 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 reduction of greenhouse gas emissions to the atmosphere.
- To promote reduced energy consumption and support the uptake of renewable options and a move away from solid fuels for residential heating.
- Limiting climate change and adapting to climate change.

Archaeological, Architectural and Cultural 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.
- Enhance access to sites of archaeological, architectural and cultural 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.
- Ensure development is sensitive to its surroundings.

Material Assets

- Improve availability and accessibility of commercially provided facilities and public services.
- Increase local employment opportunities.
- Improve efficiencies of transport, energy and communication infrastructure.
- Promotion of sustainable transport infrastructure i.e. increased public transport, pedestrian infrastructure, cycle lanes, etc.
- Reduce the generation of waste and adopt a sustainable approach to waste management.

8.4 Environmental Indicators

The assessment of Policies and Recommendations with respect to the Environmental Objectives and Targets is required to be measurable. The Environmental Indicators 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.

- 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 on the environment are outlined in **Table 17**.

Table 17: Environmental Indicators

Item	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.
Hydrology and Hydrogeology	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	SEA Indicator
Archaeological, Architectural and Cultural 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.

9 Assessment of Likely Significant Effects

9.1 Introduction

The approach used for assessing likely significant impacts was objective led. The assessment was primarily qualitative in nature, with some assessment based on expert judgement. This qualitative assessment compares the likely impacts against the Strategic Environmental Objectives to see which Policies and Recommendations meet the Strategic Environmental 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 Kildare/Greater Dublin Area (GDA).

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 Habitats Directive 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.
- Sport and commercial fishing and angling.
- Amenity and recreational areas.
- Mineral and aggregate resources.
- Navigation.

9.2 Assessment of Environmental Impacts

The environmental impacts of the Proposed Amendment objectives were assessed with respect to the existing environmental baseline as outlined in Section 5 and the environmental objectives listed in Section 7.

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.

The matrix outlined in **Table 19** highlights these potential environmental impacts. It assesses all policies and objectives in the Proposed Amendment. This assessment outlines an unmitigated scenario. Where potential impacts are identified, it is expected that these can be mitigated through the implementation of the mitigation measures outlined in Section 10.

The environmental impacts of the proposed amended LAP land zonings and amended local area plan boundary were also assessed. The matrix outlined in **Table 19** highlights these potential impacts. It provides a site specific assessment of the potential impacts associated with any change in land use zonings throughout the amended LAP boundary area and where previously un-zoned land will now be zoned. The assessment also considers where land previously zoned for Agricultural, will not be zoned for New Residential.

It is important to note that while the planning objectives outlined in the Kildare County Development Plan (CDP) have not been repeated, they are applicable to the Proposed Amendment.

Having regard to the objectives of the CDP, 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 LAP area.

Table 18: Impact Ratings

Significance of Impact	
	Neutral effects
	Positive effects
	Negative/adverse effects
	Uncertain

Table 19: Assessment of environmental impacts

Proposed Amendment No. 1 to the Maynooth Local Area Plan 2013 - 2019	SEA Environmental Objectives								Comments
	Biodiversity	Population & Human Health	Soils and Geology	Hydrology and Hydrogeology	Air, Noise & Climate	Heritage	Landscape & Visual	Material Assets	
(i) Amend the Local Area Plan boundary to the east of the town on Map No.'s 1, 2, 3, 4, 5 and 6;									Increasing the zoning footprint of the LAP area does not mean increased development overall. The zoning does not necessarily entail development and the range of uses or permitted development on this land will be limited at most therefore a neutral impact assigned to all of the environmental objectives.
(ii) Amend zoning on Map No. 6:									<ul style="list-style-type: none"> a. to the east of the Local Area Plan from 'H4: Office' to 'C: New Residential' (2.9ha); b. to the south east of the Local Area Plan from 'I: Agricultural' to 'C: New Residential' (29.6ha); c. to the south east of the Local Area Plan from 'I Agricultural ' to 'B Existing Residential and Infill'; and d. for the additional lands within the revised LAP boundary to be zoned as 'I: Agricultural' (13ha).

Proposed Amendment No. 1 to the Maynooth Local Area Plan 2013 - 2019		SEA Environmental Objectives							Comments	
		Biodiversity	Population & Human Health	Soils and Geology	Hydrology and Hydrogeology	Air, Noise & Climate	Heritage	Landscape & Visual		Material Assets
a.	To the east of the Local Area Plan from 'H4: Office' to 'C: New Residential' (2.9ha).									The zoning of lands previously for office to new residential may have a positive impact on population and human health with the provision of housing. Under Development is part of both zoning categories, therefore the impact is likely to be neutral on the environment.
b.	To the south east of the Local Area Plan from 'I: Agricultural' to 'C: New Residential' (29.6ha).									The zoning of previously Agriculture-zoned land for residential development may have a negative impact on the environment as it will involve development on greenfield land. Refer to Table 21 for mitigation measures. The zoning of agricultural land to new residential may however have a positive impact on population and human health through the provision of additional housing. However, the change in zoning is considered to be a negative impact on the other environmental objectives as it will result in development of greenfield land.

Proposed Amendment No. 1 to the Maynooth Local Area Plan 2013 - 2019		SEA Environmental Objectives							Comments	
		Biodiversity	Population & Human Health	Soils and Geology	Hydrology and Hydrogeology	Air, Noise & Climate	Heritage	Landscape & Visual		Material Assets
c.	For the east of the Local Area Plan from 'I: Agriculture' to 'B: Existing Residential & Infill'.									This zoning amendment refers to lands that were previously zoned as Agriculture but contain residential units as well as structures associated with agricultural activities. Therefore, while the zoning will change, the land is already developed and used for residential development and land use is unlikely to change significantly under this zoning objective. A neutral impact on the environment is envisaged.
d.	For the additional lands within the revised LAP boundary to be zoned as 'I: Agricultural' (13ha).									The zoning of previously unzoned lands to I - Agriculture zoning is in keeping with the current management of these lands. Zoning land for Agriculture use may potential increase the intensity of land use however given the current land use and the limit to the range of uses and development permitted under this zoning objective, this zoning amendment is considered to have a neutral impact on the environment.

Proposed Amendment No. 1 to the Maynooth Local Area Plan 2013 - 2019	SEA Environmental Objectives								Comments
	Biodiversity	Population & Human Health	Soils and Geology	Hydrology and Hydrogeology	Air, Noise & Climate	Heritage	Landscape & Visual	Material Assets	
(iii) Insert section 7.1.4: ‘Key Development Area: Railpark’ relating to the future strategy for the development of these lands									This assessment assumes that the Railpark development will proceed regardless strategy for development and therefore a neutral impact on environmental objectives other than Population and Human Health. The strategy focuses on creating a ‘high quality urban expansion of the town’ that would likely benefit the local population.
(iv) Amend / Add Roads Objectives:									
a. TRO 2(c): TRO 2 To facilitate the future construction of the following roads and in the interim protect their routes from development: (c) Between the Celbridge Road (B) and the Leixlip Road (E)(i) or (E)(ii).									TRO 2(c) was included and assessed in the existing Maynooth LAP 2019-2013. The purpose of the Proposed Amendment No.1 for TRO 2(c) is to provide the proposed road between the Celbridge Road and Leixlip Road (the MERR), two alignment
b. TRO 3(j): TRO 3: To carry out the following road realignments and improvements at: (j) Along the Leixlip Road, if required by the development of the Maynooth Eastern Relief Road [MERR].									
c. TRO 8: To support vulnerable road user permeability between new and existing residential lands around the town and the town centre, Maynooth University and the schools around Maynooth.									

Proposed Amendment No. 1 to the Maynooth Local Area Plan 2013 - 2019		SEA Environmental Objectives							Comments
		Biodiversity	Population & Human Health	Soils and Geology	Hydrology and Hydrogeology	Air, Noise & Climate	Heritage	Landscape & Visual	
	Road (B) and the Leixlip Road (E)(i) or (E)(ii).								options for where it may link to the Leixlip Road when constructed. Therefore, while there are now two options for the alignment of the proposed MERR to link to the Leixlip Road, the inclusion of the road remains as per the existing Maynooth LAP and therefore the impact of the proposed MERR on the environment does not change and the impact is neutral.
b.	TRO 3(j): TRO 3: To carry out the following road realignments and improvements at: (j) Along the Leixlip Road, if required by the development of the Maynooth Eastern Relief Road [MERR].								TRO 3(j) relates to the proposed Maynooth Eastern Relief Road (MERR) and facilitating any road realignments and improvements should they be required in the future to link the MERR and the Leixlip road (TRO 3(j)). It will have a likely positive impact on road users (Population and Human Health) to facilitate access from any new residential development to the Leixlip road. Given the existing Leixlip Road it is considered that the impact on landscape and visual will be neutral. These proposed realignment works will likely have a relatively small footprint however, the overall impact will be negative on the other environmental objectives as it will result in the development greenfield lands.

Proposed Amendment No. 1 to the Maynooth Local Area Plan 2013 - 2019		SEA Environmental Objectives							Comments
		Biodiversity	Population & Human Health	Soils and Geology	Hydrology and Hydrogeology	Air, Noise & Climate	Heritage	Landscape & Visual	
c.	TRO 8: To support vulnerable road user permeability between new and existing residential lands around the town and the town centre, Maynooth University and the schools around Maynooth.								TRO 8 will look to facilitate and increase of access for vulnerable road users such as pedestrians, those with limited mobility, cyclists to allow ease of movement between residential lands, in and around Maynooth town, Maynooth University and schools around the town. Therefore, this will have positive effect on Population and Human Health. It will have a neutral impact on other environmental objectives.
(v)	PCO 4: To facilitate and encourage cycling as a more convenient and safe method of transport, through the designation of a cycle network, linking population, commercial, community facilities and transport nodes. The development of cycle paths shall be encouraged along the following routes:								This amendment includes specific reference to provide cycling infrastructure to connect the proposed MERR to the town centre and train station. This will improve access for cyclists and pedestrians and therefore have a positive impact on Population and Human Health.
(p)	From the new Maynooth Eastern Relief Road to the town centre and train station.								
(vi)	Amend Map No. 1 (Roads Objectives Map);								This amendment will update the map to include the amended local area plan boundary and proposed roads objective specific to the proposed MERR. This

Proposed Amendment No. 1 to the Maynooth Local Area Plan 2013 - 2019	SEA Environmental Objectives								Comments
	Biodiversity	Population & Human Health	Soils and Geology	Hydrology and Hydrogeology	Air, Noise & Climate	Heritage	Landscape & Visual	Material Assets	
									will have a neutral impact on all environmental objectives.
(vii) Amend Table 17: Land Use Zoning Matrix to permit ‘childcare / crèche / playschool’ uses to be ‘Open for Consideration’ in land zoned as ‘F: Open Space & Amenity’									This amendment is made to provide consistency and alignment with other Local Area Plans in Kildare and the Kildare County Development Plan 2017-2023. This will have a neutral impact on all environmental objectives.
(viii) A number of consequential changes arising to provide for these proposed amendments.									This relates to the supporting text and information that will be added/updated in order to facilitate the inclusion proposed amendments (i) to (vi) above, and provide context for the Proposed Amendment No.1. As supporting text, this aspect of the Proposed Amendment No. 1 is not applicable to assessment.

9.3 Principal Environmental Impact

The environmental impacts of the Proposed Amendment No. 1 were assessed with respect to the existing environmental baseline in Section 5. As discussed in Section 2, the policies proposed have been chosen to facilitate the increase in the Maynooth housing target and align the LAP with the CDP 2017-2023.

9.3.1 Biodiversity, Flora and Fauna

Negative impacts exist where there will be a change in land use that facilitates development. For example where land, previously zoned for agriculture, will now be zoned for development, such as new residential development at Railpark. Such development will have a potentially negative impact on the biodiversity, flora and fauna of the area as development is being proposed on undeveloped, greenfield land.

Where the amendments do not result in development of undeveloped, greenfield land or relate to works on existing development, the impact is considered to be neutral to the biodiversity, flora and fauna.

9.3.2 Population and Human Health

The land use zonings and objectives will in general have a positive impact on the population and human health. The change in zonings may provide additional housing in the future. The housing objectives will implement guidance and policies that are designed to enhance the proposed residential developments and associated facilities in a way that will benefit future residents and site users. Some of the roads objectives will improve access and facilities for vulnerable road users for example pedestrians and cyclists which in turn will have a positive impact.

9.3.3 Soils and Geology

As discussed in Section 9.3.1, negative impacts exist where there will be a change in land use that facilitates development. Such development will have a potentially negative impact on the soils and geology of the area where development is being proposed on undeveloped, greenfield land.

Where the amendments do not result in development of undeveloped, greenfield land or relate to works on existing development, the impact is considered to be neutral on soils and geology.

9.3.4 Hydrology and Hydrogeology

As discussed in Section 9.3.1, negative impacts exist where there will be a change in land use that facilitates development. Such development will potentially have a negative impact on the hydrology and hydrogeology of the area where

development is being proposed on undeveloped, greenfield land. Such development may potentially alter the local hydrology or hydrogeology and will increase the overall hard surface area.

However, as described in Section 6.6.2, a Strategic Flood Risk Assessment (SFRA) has been carried out as part of this SEA. The findings of the SFRA demonstrate that the risk of fluvial, pluvial and groundwater flooding was deemed to be low. The most likely source of flooding is due to pluvial flooding but this is deemed to be low risk as all development will be required to be built in accordance with SuDS (sustainable drainage systems) principles and in compliance with the surface water and drainage policies of the Maynooth LAP and Kildare County Development Plan.

Where the amendments do not result in development of undeveloped, greenfield land or relate to works on existing development, the impact is considered to be neutral on the hydrology and hydrogeology.

9.3.5 Air, Noise and Climate

As discussed in Section 9.3.1, negative impacts exist where there will be a change in land use that facilitates development. Such development will have a potentially negative impact on the soils and geology of the area where development is being proposed on undeveloped, greenfield land. Such development may result in increased local emissions (noise and air emissions from traffic) and as a result of associated infrastructure, for example the proposed residential development in Railpark.

Where the amendments do not result in development of undeveloped, greenfield land or relate to works on existing development, the impact is considered to be neutral on air, noise and climate.

9.3.6 Archaeological, Architectural and Cultural Heritage

As discussed in Section 9.3.1, negative impacts exist where there will be a change in land use that facilitates development. Such development will have a potentially negative impact on the archaeological heritage of the area in particular where development is being proposed on undeveloped, greenfield land and that may potentially contain unknown archaeological heritage.

Where the amendments do not result in development of undeveloped, greenfield land or relate to works on existing development, the impact is considered to be neutral on archaeological, architectural and cultural heritage.

9.3.7 Landscape and Visual

As discussed in Section 9.3.1, negative impacts exist where there will be a change in land use that facilitates development. Such development will have a potentially negative impact on the landscape and visual where development occurs in areas of relatively limited development, for example agricultural lands.

Where the amendments do not result in development of undeveloped, greenfield land or relate to works on or near existing development, the impact is considered to be neutral on the local landscape and visual aspects of the affected lands.

9.3.8 Material Assets

As discussed in Section 9.3.1, negative impacts exist where there will be a change in land use that facilitates development. Such development will have a potentially negative impact on the material assets where development will place additional demand on material assets such as water supply, waste management facilities/resources or waste water treatment.

Where the amendments do not result in development or require additional material assets, the impact is considered to be neutral.

10 Mitigation Measures

10.1 Introduction

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 Proposed Amendment. All mitigation measures have been developed and agreed with KCC as part of the SEA iterative process.

The primary mitigation measure is to ensure the sustainable and appropriate development of Maynooth LAP (as amended) without compromising the integrity of the natural and built environment. All new development that requires an Environmental Impact Assessment (EIA) in accordance with EIA legislation will address the range of environmental objectives, indicators and targets and associated environmental mitigation measures and incorporate them into the project specific mitigation measures.

The Railpark South East Quadrant refers to the lands in the east of the amended LAP area where zoning is proposed to be amended to facilitate the development of a new residential development. Refer to Section 3.5 Summary of the Proposed Amendment.

Refer to **Table 20**.

Table 20: Mitigation Measures for the Proposed Amendment No. 1 to the Maynooth LAP.

Environmental Receptor	Mitigation Measures	Relevant objectives	
		CDP Objectives	Draft LAP Objectives
Biodiversity	<ul style="list-style-type: none"> • Ensure that appropriate measures for conservation and enhancement of the natural and built environment are incorporated into all relevant plans and programmes. • Ensure that all new development plans are cognisant of the Biodiversity Action Plan for the County. • Ensure the protection of ecological resources that have economic benefits e.g. ecological zones that draw tourism, the Royal Canal. • Compliance with the zoning of the SACs, SPAs, NHAs (and pNHAs), which prohibits non-compatible developments. • Ensure that an AA is carried out for all development proposals with potential to impact on Natura 2000 sites. • Ensure that greenfield development, such as that targeted for the Railpark South East Quadrant, is subject to environmental assessment, where required. • The development of future distributor routes should be subject to route option assessment and environmental assessment, where required. For example routes proposed between Celbridge Road and the Leixlip Road. 	NHO 2, NHO 3, GIO 5, GIO 6, DLO 4, SRO 1,	TR02
Population and Human Health	<ul style="list-style-type: none"> • Ensure adequate access to public transport infrastructure, cycle and pedestrian facilities is provided for future residential developments. 	EN 8, HSO 1, HDO 1, HDO 2, HDO 3, MDO 1, MDO 2, MDO 3, DLO 3, DLO 5	HPO 3 HPO 4
Soils and Geology	<ul style="list-style-type: none"> • 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. This is particularly relevant with regards the proposed greenfield development at Railpark South East Quadrant. • Ensure that the ‘polluter pays principle’ is adhered to in full cooperation with the EPA. 		

Environmental Receptor	Mitigation Measures	Relevant objectives	
		CDP Objectives	Draft LAP Objectives
<p>Hydrology and Hydrogeology</p>	<ul style="list-style-type: none"> • Ensure that the objectives and the programme of measures outlined the River Basin Management Plans are fully implemented. • Provide adequate capacity at water and wastewater treatment and storage facilities for current and projected populace. • 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. • Comply with the objectives and policies of the Eastern Catchment Flood Risk Assessment Management (CFRAM) Study. • Promote SuDS principles for all drainage including the integration of storm water attenuation facilities for new developments and existing catchment areas. • 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. • Preserve and protect the water quality of Kildare’s rivers and canal systems (e.g. Royal Canal) where these help to regulate stream flow, recharge ground water and screen pollutants. • 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. • Ensure that mitigation measures proposed under the SFRA are implemented as appropriate. 	<p>GIO 6, WDO 4, WDO 5, EN 1, EN 8, EN 10,</p>	

Environmental Receptor	Mitigation Measures	Relevant objectives	
		CDP Objectives	Draft LAP Objectives
Air, Noise and Climate	<ul style="list-style-type: none"> • Ensure that the objectives and policies of EU Air Quality legislation are incorporated into plans and programmes upon implementation into Irish law. • Promote the reduction of emissions of greenhouse gases to ensure Ireland's compliance with our Emission Targets. • Facilitate sustainable transport modes and the use of walking, cycling and public transport. • Consideration of existing noise policy in County Kildare for example noise mapping and noise action plans produced by the Local Authority. • Consideration of likely noise impacts/effects associated with new developments. 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. 	EN 4, EN 6	
Archaeological, Architectural and Cultural Heritage	<ul style="list-style-type: none"> • Ensure the protection of all features of architectural and archaeological merit. This is particularly relevant where development is proposed on greenfield lands, for example at Railpark. • Promote the integration of suitably designed developments into existing urban and rural landscapes. 	ACO 2	
Landscape & Visual	<ul style="list-style-type: none"> • Ensure that all new plans and programmes incorporate the findings of the landscape Character Assessment for County Kildare. • Ensure all new developments are sympathetic to the landscape character of local area. 	PSO 5	

Environmental Receptor	Mitigation Measures	Relevant objectives	
		CDP Objectives	Draft LAP Objectives
Material Assets	<ul style="list-style-type: none"> • Ensure there is sufficient water supply and waste water treatment capacity and infrastructure for future developments, particularly large scale developments. • Promote the development of sustainable transportation infrastructure where considered feasible. • Promote the implementation of the Waste Management Plan together with any future National or Eastern Regional Waste Management Plans. • Encourage waste prevention, minimisation, reuse, recycling and recovery as methods of managing waste. • Ensuring specific national policies and regulations regarding waste management are adhered to. • 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. • Promote the development of sufficient energy resources to meet the needs of the GDA and promote the use of renewable energies to meet those needs. • Promote the development of sufficient energy resources to meet the needs of the GDA and promote the use of renewable energies to meet those needs. 	EM 2, EN 10	

11 SEA 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 Proposed Amendment.

The SEA carried out has ensured that any potential significant environmental impacts have been identified and given due consideration. Refer to **Table 21** below.

Kildare 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 21: Monitoring programme.

Environmental Category	Target	Indicators	Data Sources, Responsibility, and Frequency
Biodiversity including Flora and Fauna	<ul style="list-style-type: none"> ● Improve protection for protected sites and species. ● Improve protection for important wildlife sites, particularly protection of ecological linkages through the provision of green infrastructure. ● Improve access for the appreciation and promotion of wildlife. ● Preferably site new development in non-sensitive locations. 	<ul style="list-style-type: none"> ● Number and extent of Protected Sites. ● Areas actively managed for conservation. ● Population and range of Protected Species. ● Achievement of the Objectives of Biodiversity Plans. 	<p>Sources: Kildare County Council, National Parks and Wildlife Services, IFI and EPA.</p> <p>Responsibility: Kildare County Council</p> <p>Frequency: Align with monitoring evaluation report on the effects of implementing Kildare County Development Plan.</p>
Population and Human Health	<ul style="list-style-type: none"> ● Reduce population exposure to high levels of noise, vibration and air pollution. ● Increase modal shift to public transport. ● Co-ordination of land use and transportation policies. ● Reduction in journey to work (time/distance). ● Improve access to recreation opportunities 	<ul style="list-style-type: none"> ● Census population data. ● Rates of unemployment per area. ● % increase in housing (number and type). ● % change of commuter transport distances / times / range of public transport utilised. ● % of commuters using public transport. ● % change in education levels. 	<p>Sources: Kildare County Council and Central Statistics Office.</p> <p>Responsibility: Kildare County Council</p> <p>Frequency: Align with monitoring evaluation report on the effects of implementing Kildare County Development Plan.</p>

Environmental Category	Target	Indicators	Data Sources, Responsibility, and Frequency
Soils and Geology	<ul style="list-style-type: none"> ● Maintain the quality of soils. ● Safeguard strategic mineral reserves. ● Re-use of brownfield lands, rather than developing greenfield lands. ● Minimise the consumption of non-renewable sand, gravel and rock deposits. 	<ul style="list-style-type: none"> ● Rates of re-use / recycling of construction waste. ● Rates of quarrying. ● Rates of brownfield site and contaminated land reuse and development. ● Rates of greenfield development. 	<p>Sources: Kildare County Council and Environmental Protection Agency.</p> <p>Responsibility: Kildare County Council</p> <p>Frequency: Align with monitoring evaluation report on the effects of implementing Kildare County Development Plan.</p>
Hydrology and Hydrogeology	<ul style="list-style-type: none"> ● Improve water quality in rivers, lakes, canals and groundwater. ● Protection of catchments/basins. ● Management of zones vulnerable to flooding. ● Promote sustainable drainage practices to improve water quality and flow. 	<ul style="list-style-type: none"> ● Compliance of potable water sources to water quality regulations. ● Compliance of surface waters with national and international standards. ● Potable and wastewater treatment capacities versus population. ● % of wastewater requiring 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. 	<p>Sources: Kildare County Council, Environmental Protection Agency, Irish Water, Waterways Ireland and Inland Fisheries Ireland.</p> <p>Responsibility: Kildare County Council</p> <p>Frequency: Align with monitoring evaluation report on the effects of implementing Kildare County Development Plan.</p>

Environmental Category	Target	Indicators	Data Sources, Responsibility, and Frequency
Air, Noise and Climate	<ul style="list-style-type: none"> ● Reduce levels of air pollution including air and noise emissions. ● Consideration of noise exposure when zoning land for new developments. ● Minimise emissions of greenhouse gases. ● Reduce waste of energy, and maximise use of renewable energy sources. 	<ul style="list-style-type: none"> ● Traffic, Transport and Vehicular survey data. ● National and region specific emission data. ● Compliance with national standards. ● Reduction in greenhouse gas emissions. ● Compliance of emission at licensed facilities. ● Number of energy / renewable energy production facilities. ● % of dwellings / businesses using renewable energies. ● Rates of energy / renewable energy consumption. 	<p>Sources: Kildare County Council, Environmental Protection Agency, Central Statistics Office and Sustainable Energy Association Ireland.</p> <p>Responsibility: Kildare County Council</p> <p>Frequency: Align with monitoring evaluation report on the effects of implementing Kildare County Development.</p>

Environmental Category	Target	Indicators	Data Sources, Responsibility, and Frequency
Archaeological, Architectural and Cultural Heritage	<ul style="list-style-type: none"> ● Enhance access to sites of heritage interest ● 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. 	<ul style="list-style-type: none"> ● 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. 	<p>Sources: Kildare County Council and Department of Culture, Heritage and the Gaeltacht.</p> <p>Responsibility: Kildare County Council</p> <p>Frequency: Align with monitoring evaluation report on the effects of implementing Kildare County Development.</p>
Landscape and Visual	<ul style="list-style-type: none"> ● Improve protection for landscapes of recognised quality. ● Maintain clear urban/rural distinctions. ● Enhance provision of, and access to, green space in urban areas. 	<ul style="list-style-type: none"> ● 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 likely to impact landscape. ● % change of land use from rural to urban. 	<p>Sources: Kildare County Council and Department of Housing, Planning and Local Government..</p> <p>Responsibility: Kildare County Council</p> <p>Frequency: Align with monitoring evaluation report on the effects of implementing Kildare County Development Plan.</p>

Environmental Category	Target	Indicators	Data Sources, Responsibility, and Frequency
Material Assets	<ul style="list-style-type: none"> ● Improve availability and accessibility of commercially provided facilities and public services. ● Increase local employment opportunities. ● Improve efficiencies of transport, energy and communication infrastructure. ● Reduce the generation of waste and adopt a sustainable approach to waste management. 	<ul style="list-style-type: none"> ● 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. 	<p>Sources: Kildare County Council, Central Statistics Office, Transport Infrastructure Ireland and Environmental Protection Agency.</p> <p>Responsibility: Kildare County Council</p> <p>Frequency: Align with monitoring evaluation report on the effects of implementing Kildare County Development Plan.</p>

Appendix A

Scoping Report Submissions

A1 Scoping Report Submissions



Regional Inspectorate,
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Cigireacht Réigiúnach, Inis Cara

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Ms Veronica Cooke
Forward Planning Department
Kildare County Council
Aras Chill Dara
Naas
Co. Kildare

23rd February 2018

Our Ref: SCP180201.1

Re: SEA Scoping for Proposed Amendment No.1 of the Maynooth Local Area Plan 2013-2019

Dear Ms. Cooke,

I refer to and acknowledge your correspondence, dated 30th January, in relation to the Strategic Environmental Assessment Scoping for the Proposed Amendment No.1 of the Maynooth Local Area Plan (the Amendment).

The attached SEA integration guidance document sets out the key environmental issues, as relevant and appropriate, to be taken into account in the preparation of the SEA and Amendment.

A number of key aspects to be considered are outlined below and should be taken into account in the draft Plan and Amendment.

Specific Comments to be considered

Relationship with other plans and programmes

We note the various plans referred to in *Table 2.1 - Hierarchy of Relevant Legislation, Plans and Programmes*,

- The reference to the Draft National Planning Framework can be updated to reflect the now finalised Plan.
- Irish Water have also commenced work on preparing a National Water Resources Plan, which may be useful to consider.
- May also be useful to refer to the Environmental Noise Directive
- Eastern CFRAMS - Flood Risk Management Plan for UoM14.



Objectives and Targets

In the context of ensuring consistency with higher level plans/programmes objectives, there is merit in reviewing the proposed objectives and draft targets against those described in the SEA Environmental Report for the National Planning Framework.

The draft Objective for Biodiversity could be enhanced through reference to designated national and European sites and protected species.

Under 'Population and Human Health', we note the reference to the draft target relating to increasing the modal shift to public transport. This could also be expanded on, to include walking and cycling. Additional aspects to consider may include provision or support for establishing designated 'quiet zones'.

Further comment on the Plan may be provided upon receipt of the Draft Environmental Report and Plan and associated documents during the next statutory consultation phase of the SEA Process.

Scoping Process Guidance

Guidance on the SEA Scoping Process, including an SEA Pack, Integration Guidance, SEA Checklist, SEA Spatial Information Sources and guidance on Integrating Climate Change into SEA, is available on the EPA website and should be considered in the preparation of the SEA. This can be consulted at the following address: <http://www.epa.ie/pubs/advice/ea/>

Guidance on *Developing and Assessing Alternatives in SEA* (EPA, 2015) is also available at: <http://www.epa.ie/pubs/advice/ea/developingandassessingalternativesinsea.html>

EPA State of the Environment Report 2016

The EPA has recently published our State of the Environment Report for 2016 *'Ireland's Environment – An Assessment (EPA, 2016)*. The recommendations, key issues and challenges described within this report should be considered, as relevant and appropriate to the Plan area in preparing the Draft Plan and associated SEA. This report can be consulted at: <http://www.epa.ie/irelandsenvironment/stateoftheenvironmentreport/>

SEA WebGIS Search and Reporting Tool

The EPA SEA WebGIS Search and Reporting Tool is a GIS based web application that allows users to explore, interrogate and produce an indicative report on key aspects of the environment in specific geographic areas. These reports are indicative and will provide an overview of key aspects of the environment within a specific plan area. This may be used to inform the SEA screening and scoping stages for Plans and Programmes with reference in the first instance to the land use sector, though it is also applicable to other sector plans. It may be accessed via www.edenireland.ie

Environmental Authorities

Under the SEA Regulations (*S.I. No. 436 of 2004*), as amended by *S.I. No. 201 of 2011*, notice should also be given to the following:

- The Minister for Housing, Planning and Local Government
- Minister for Agriculture, Food and the Marine, and the Minister for Communications, Climate Action and Environment, where it appears to the planning authority that the plan or programme, or modification of the plan or programme, might have significant effects on fisheries or the marine environment



- where it appears to the competent authority that the plan or programme, or modification to a plan or programme, might have significant effects in relation to the architectural or archaeological heritage or to nature conservation, the Minister for Arts, Heritage and the Gaeltacht (now the Minister for Culture, Heritage and the Gaeltacht), and
- any adjoining planning authority whose area is contiguous to the area of a planning authority which prepared a draft plan, proposed variation or local area plan.

Should you have any queries or require further information in relation to the above please contact the undersigned. I would be grateful if an acknowledgement of receipt of this submission could be sent electronically to the following address: sea@epa.ie.

Yours Sincerely,

A handwritten signature in blue ink, appearing to read 'Cian O'Mahony'.

Cian O'Mahony
Scientific Officer
SEA Section
Office of Evidence and Assessment
Environmental Protection Agency
Regional Inspectorate
Inniscarra, County Cork



**Iascach Intíre Éireann
Inland Fisheries Ireland**

12/02/2018

Re: SEA for Amendment to Maynooth Local Area Plan 2013-2019

Inland Fisheries Ireland is a Statutory Body with a remit encompassing the management, conservation, protection, development and improvement of the fisheries within its Region.

PLANNING, DEVELOPMENT & INFRASTRUCTURE

In order to facilitate the earliest possible access to the system, it is essential that IFI be contacted in relation to all works that may have an impact on surface waters (as per PLANNING AND DEVELOPMENT REGULATIONS, 2001, Section 28) at formal planning stage. We recommend the recognition in planning systems (local area planning, town planning, individual application assessment etc.) of surface waters and their riparian areas as key natural habitats inherently supporting significant floral and faunal biodiversity. As such, these features should be maintained, improved and enhanced through the planning process (open natural surface waters by default form a core element in the "Green Infrastructure" which can facilitate enhancement of a network of habitats and create clear linkages to help bind the existing patchwork of open spaces and green corridors in the County).

Development potentially impacting on aquatic habitats should be strictly controlled to ensure ecological protection and enhancement; the council should seek to establish riparian corridors free from development along all significant watercourses.

The maintenance of habitat integrity (both in-stream and riparian) is essential in safeguarding the ecological value of these important natural resources. The specific details of any works directly affecting watercourses or riparian habitats in the area, must first be submitted to IFI for assessment and approval.

WATER

IFI would highlight the 'at risk' status of most surface waters in the Maynooth area under the WFD characterisation process and would stress the availability of IFI's full cooperation in order to protect and enhance water and habitat quality in all surface waters within the broad WFD context.

The new rezoning of land for residential use will produce more pressures on water resources in the area. While Leixlip WWTP has recently been upgraded to final treatment capacity of 150, 000 PE, it is important to note that sufficient treatment capacity must be available both within the receiving sewerage system locally and downstream at Leixlip



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WWTP over the full duration of the plan in order that the ecological integrity of the ultimate receiving water (River Liffey) is protected. Should the WWTP fail to provide expected capacities during the life of the plan, IFI would highlight the risk of associated significant environmental effects resulting from local development. Leixlip Water Treatment Plant must also have capacity for the proposed extra 1000 houses without having a negative impact on the ecology (through hydrological mechanisms, absence of groundwater recharge etc.) of those waters, thereby potentially contravening the range of relevant legislation (Fisheries Acts, Habitats Directive, Water Framework Directive etc.).

Part II (5) of the EUROPEAN COMMUNITIES ENVIRONMENTAL OBJECTIVES (SURFACE WATERS) REGULATIONS, 2009 states '*A public authority shall not, in the performance of its functions, undertake those functions in a manner that knowingly causes or allows deterioration in chemical status or ecological status (or ecological potential as the case may be) of a body of surface water.* It is clear that in assessing future planning permission applications in the Maynooth Town area, the Council's decisions must be based on provisions of the above legislation and with the national long term objective of maintaining water quality of good status.

The new residential zoning area is in close proximity to the Royal canal. The Royal Canal in this area represents an important ecological resource and should not be impacted negatively as a result of proposed development. The canal supports significant populations of coarse fish not to mention a range of other freshwater aquatic species, plus all associated floral and faunal components in adjacent habitats. Waterways Ireland should be consulted on any development likely to impact on the Royal Canal

The proposed crossing of the Royal Canal as part of the Maynooth Relief road has the potential to negatively affect the canal. Detailed design at planning should be discussed and agreed with Waterways Ireland and IFI.

Please be in touch if we can be of further assistance.

Yours sincerely,

Roisin O' Callaghan

Fisheries Environmental Officer
Inland Fisheries Ireland - Dublin

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Inland Fisheries Ireland**

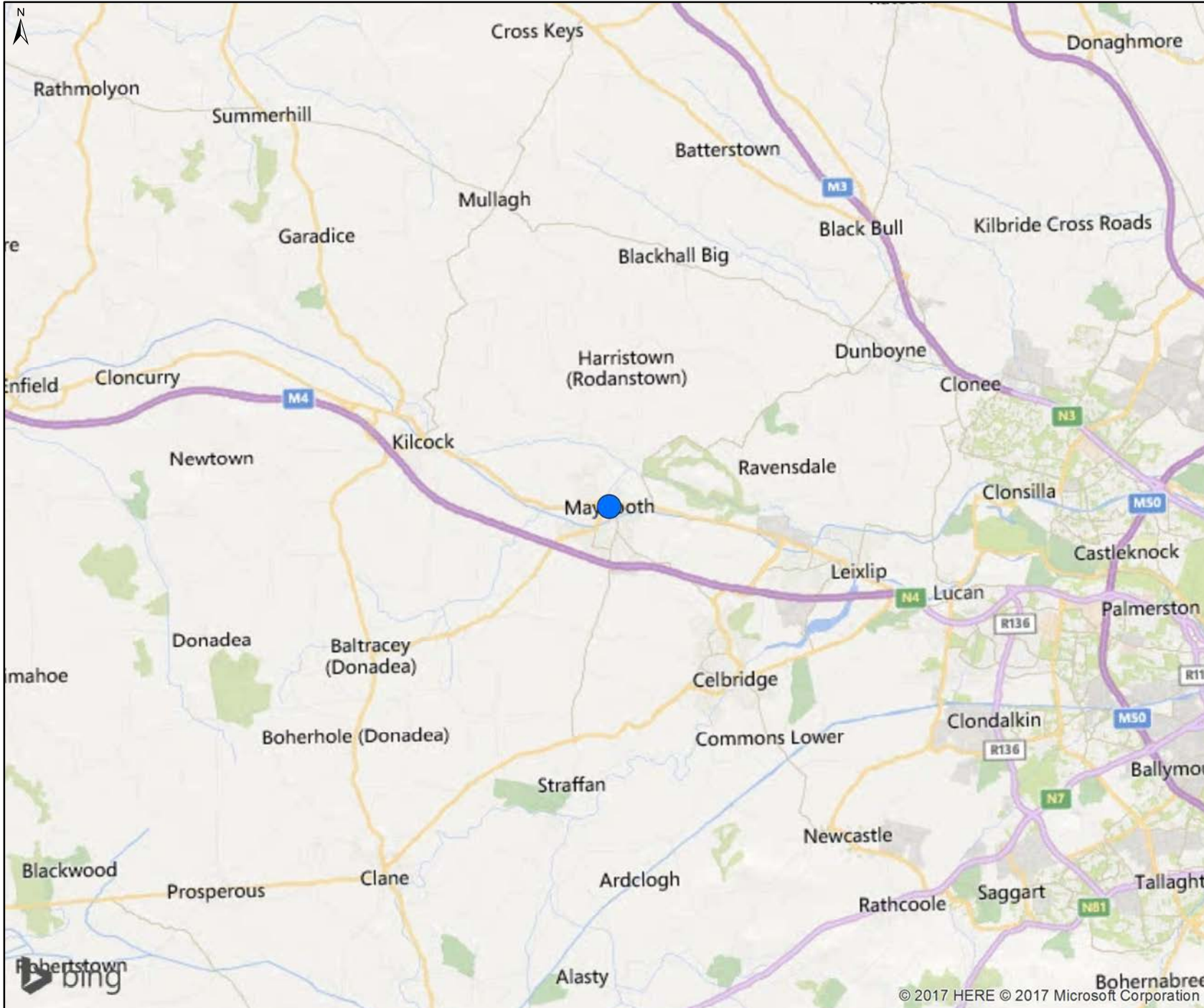
Telephone: +353 (0) 1 8842651

EMail: roisin.ocallaghan@fisheriesireland.ie

Appendix B

Figures

B1 **Figures**

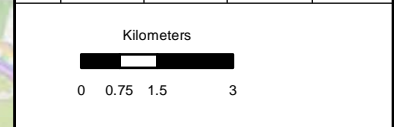


Legend

- Maynooth

Associated datasets and digital information objects connected to this resource are sourced from Kildare County Council.

D2	2017-12-18	LG	AF	SW
Issue	Date	By	Chkd	Appd



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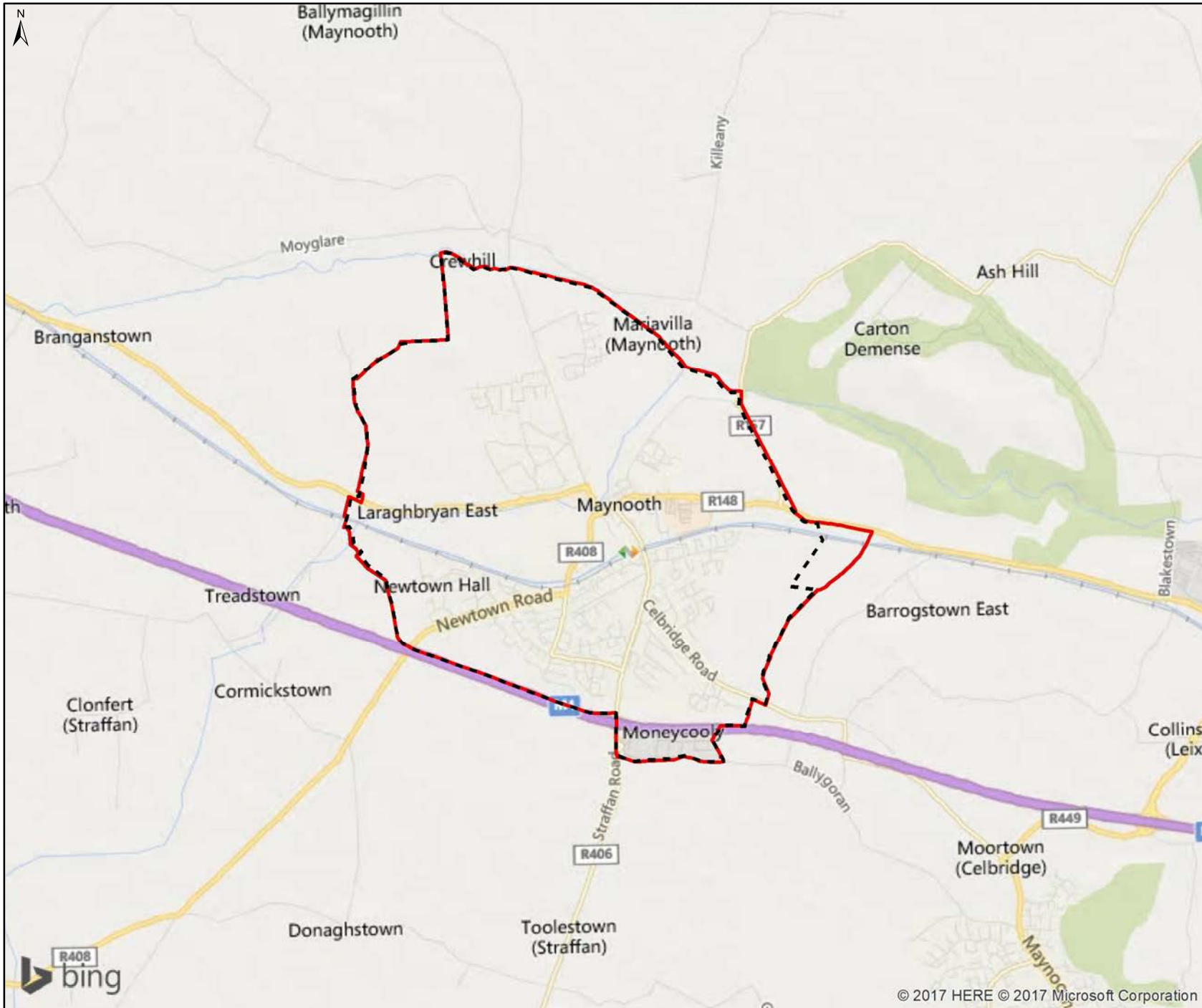
Job Title
**Maynooth LAP
 Strategic Environmental Assessment**

Location of Maynooth

Scale at A4
1:150,000

Job No 257722-00	Drawing Status Issue
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Drawing No Figure 1.1	Issue I1
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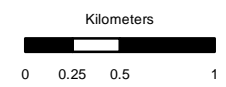


Legend

- Maynooth LAP
- Revised LAP boundary

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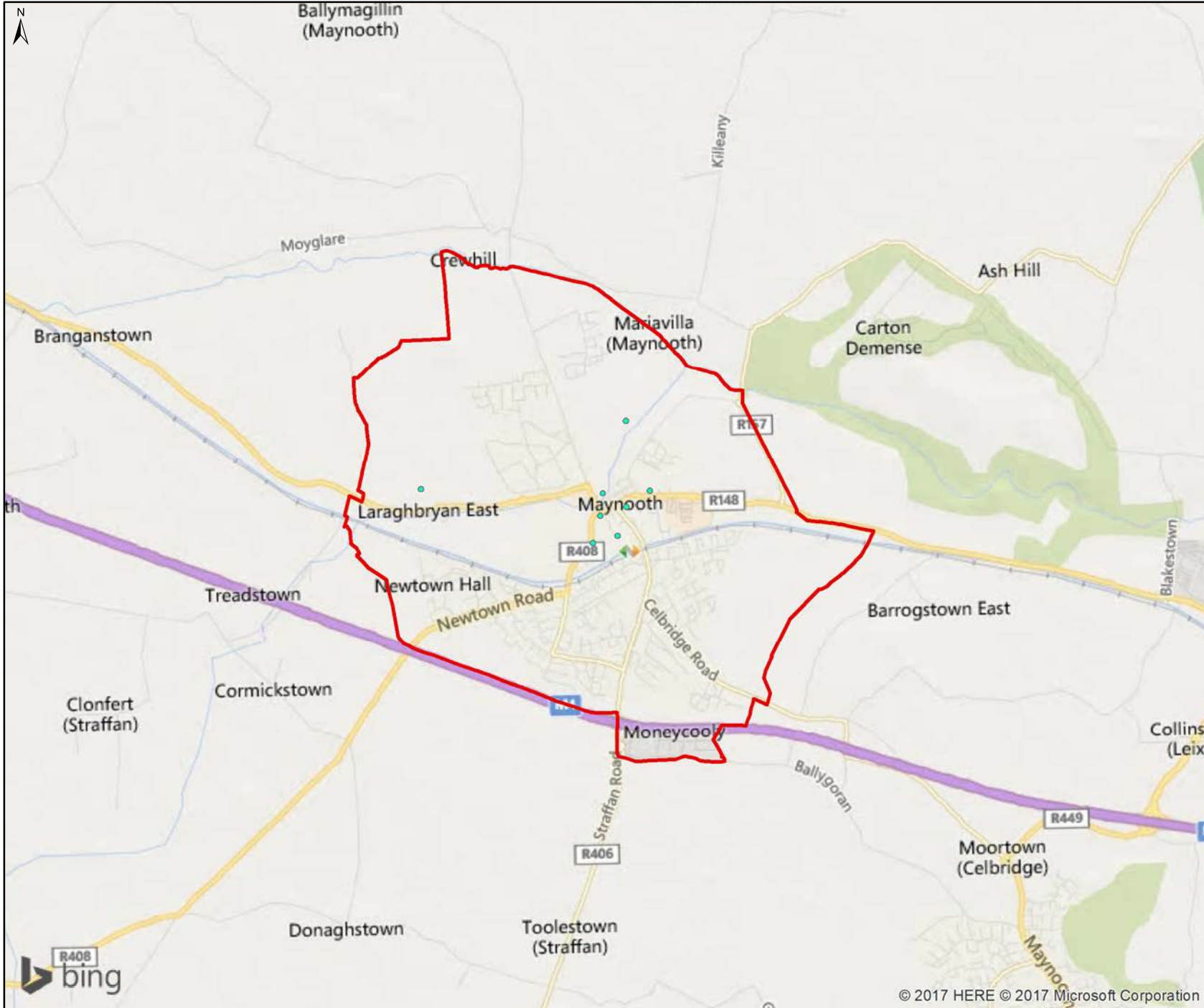
Job Title
**Maynooth LAP
 Strategic Environmental Assessment**

**LAP Boundary and Proposed
 Amendment No. 1 to LAP**

Scale at A4
1:40,000

Job No 257722-00	Drawing Status Issue
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Drawing No Figure 1.2	Issue I1
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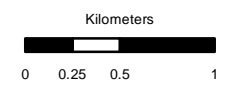


Legend

- Revised LAP boundary
- Protected Trees

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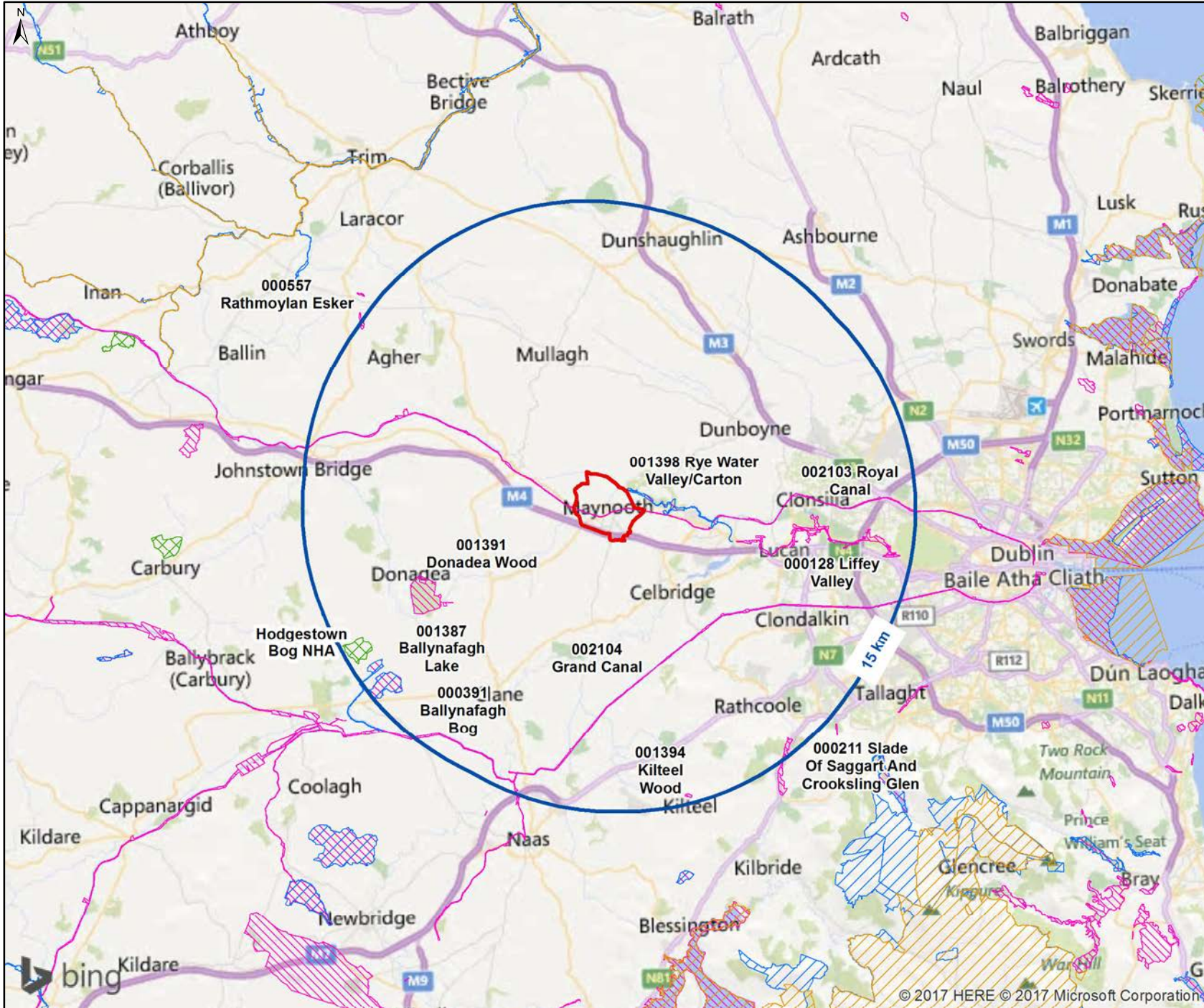
Protected Trees

Scale at A4
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Job No 257722-00	Drawing Status Issue
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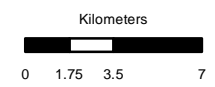
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- Legend**
- Revised LAP boundary
 - Buffer
 - Special Protection Areas
 - Special Areas of Conservation
 - National Heritage Areas
 - Proposed National Heritage Areas

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

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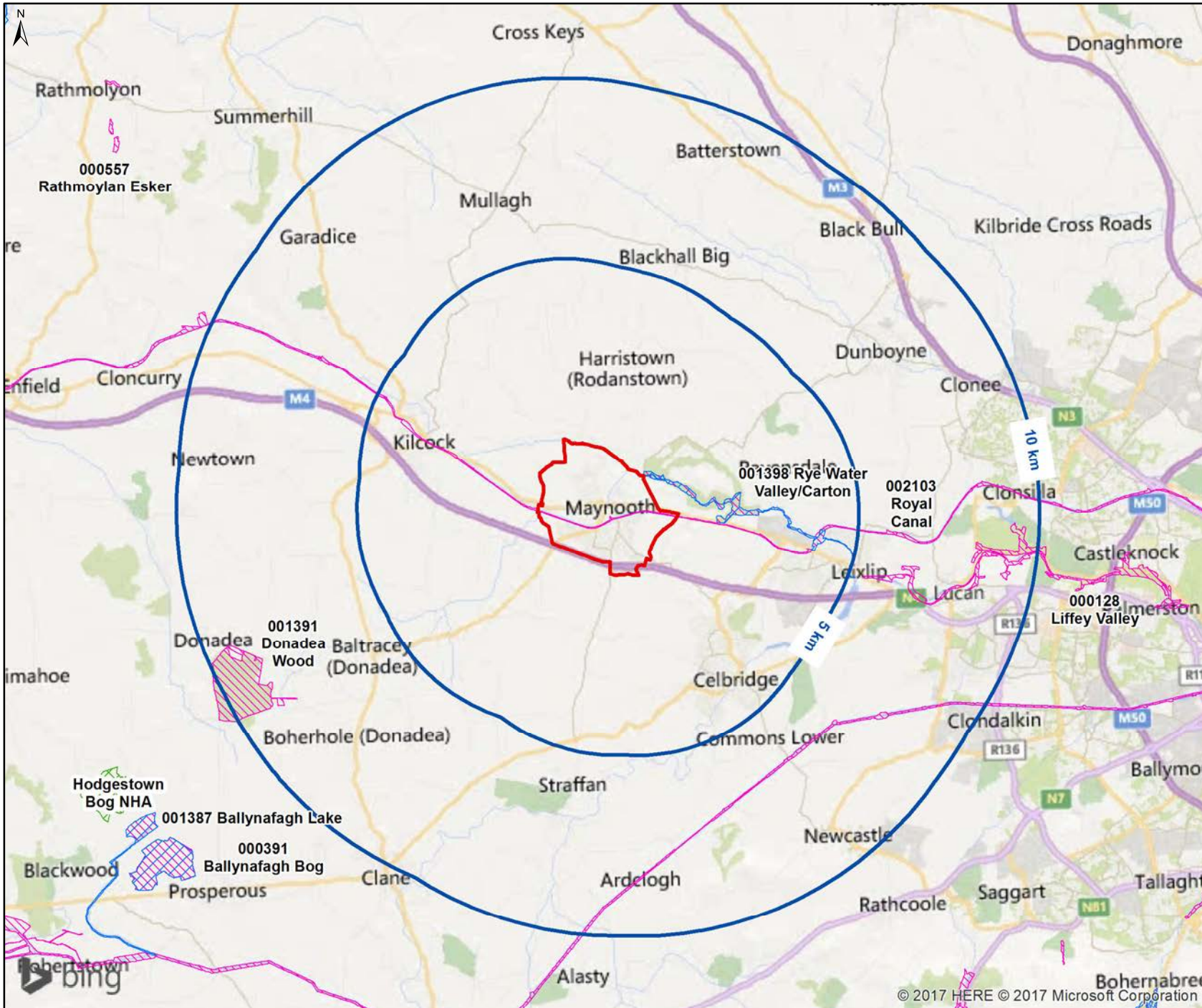
Job Title
**Maynooth LAP
Strategic Environmental Assessment**

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

Scale at A4
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Job No 257722-00	Drawing Status Issue
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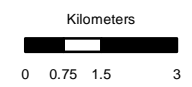
Drawing No Figure 3.2	Issue I1
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- Legend**
- Revised LAP boundary
 - Special Areas of Conservation
 - National Heritage Areas
 - Proposed National Heritage Areas

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

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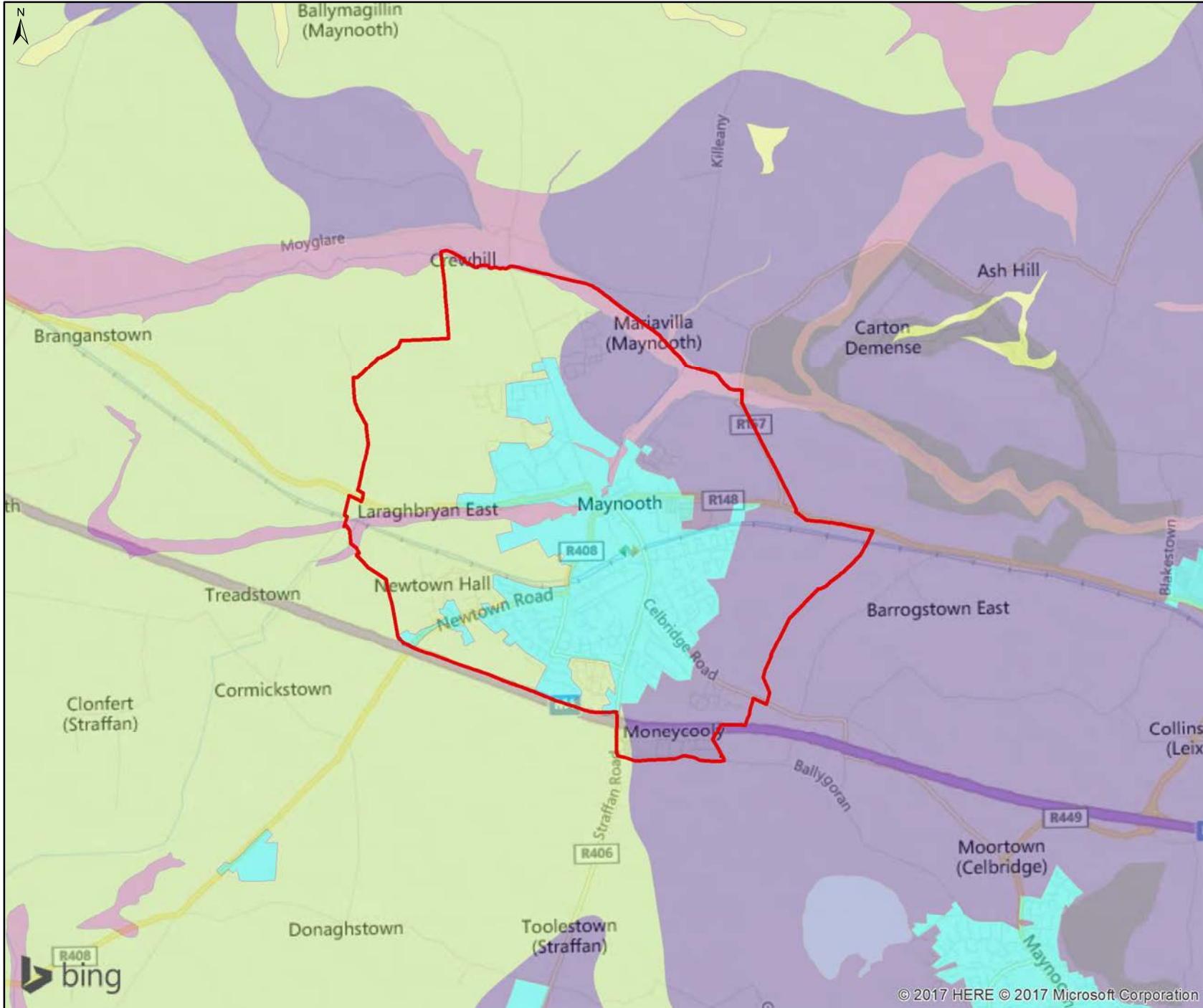
**Ecological Designated Sites
 (including Natura 2000 sites)**

Scale at A4
1:150,000

Job No 257722-00	Drawing Status Issue
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Drawing No Figure 3.3	Issue I1
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Legend

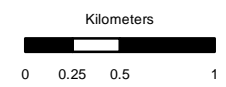
- Revised LAP boundary

ISIS National Soils

- 01_RsMi, Peat
- 05RIV, River alluvium
- 1000x, Fine loamy drift with limestones
- 5RIV, River alluvium
- 700d, Fine loamy drift with limestones
- Urban, Urban

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

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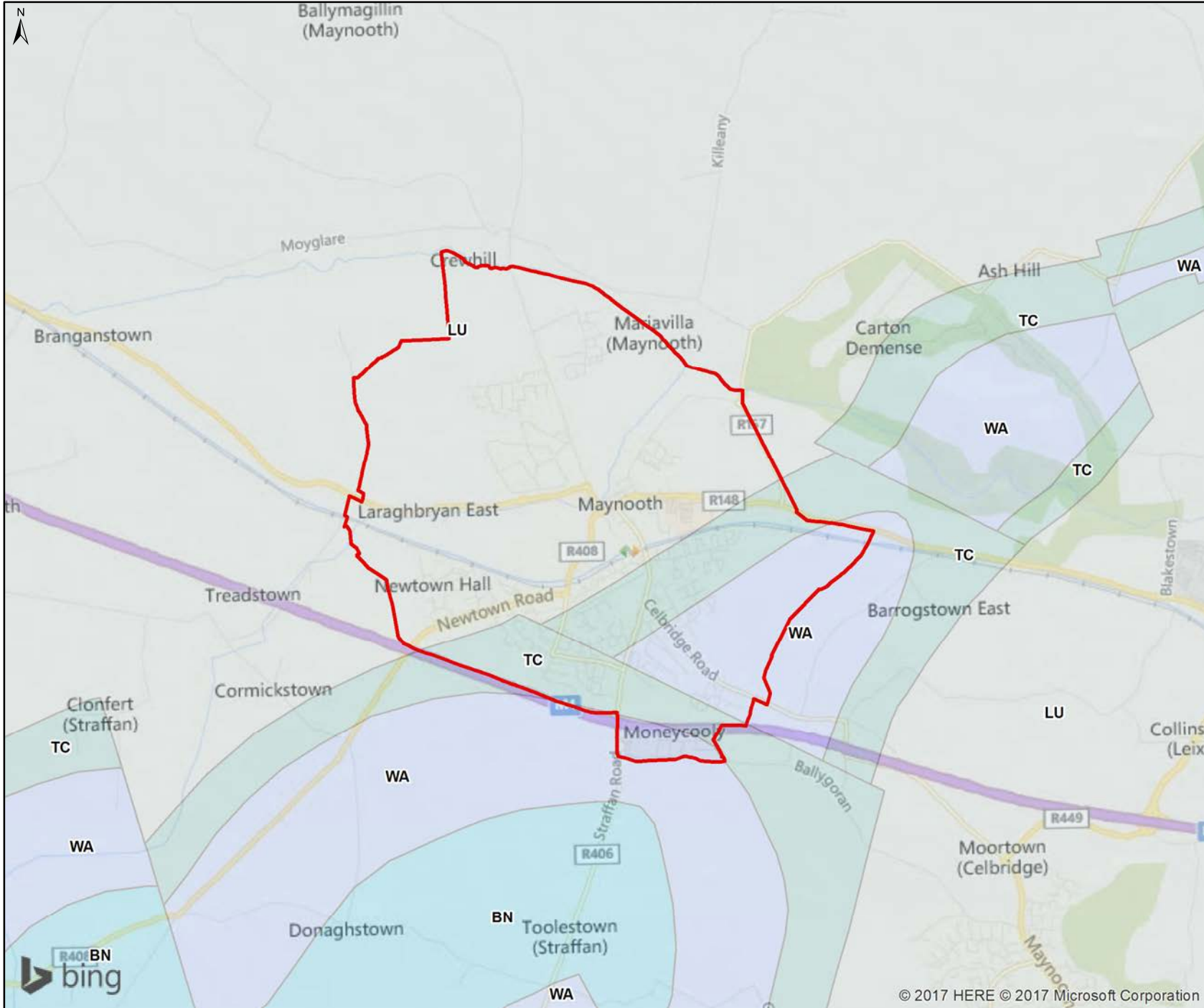
Soils

Scale at A4
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Job No 257722-00	Drawing Status Issue
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Drawing No Figure 3.4	Issue I1
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Legend

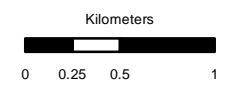
Revised LAP boundary

Bedrock Rock Units 1:100k

- Boston Hill Formation
- Lucan Formation
- Tober Colleen Formation
- Waulsortian Limestones

Associated datasets and digital information objects connected to this resource are available at the Geological Survey of Ireland <https://www.gsi.ie/en-ie/data-and-maps/Pages/default.aspx>

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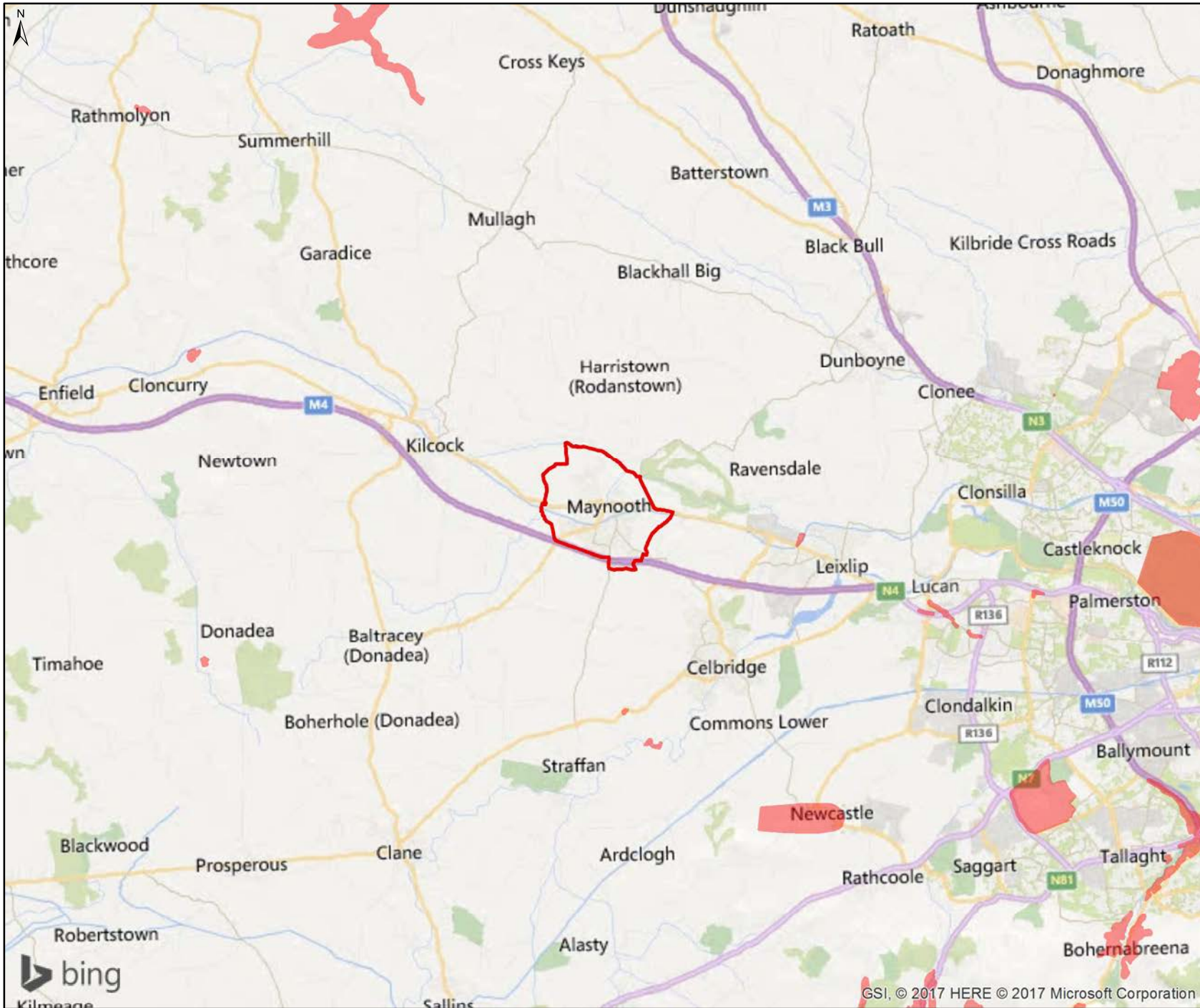
Geology

Scale at A4
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Job No 257722-00	Drawing Status Issue
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Drawing No Figure 3.5	Issue I1
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Legend

- Revised LAP boundary
- Geological Heritage Site Audited Boundaries
- Heritage Site Audited Boundaries

Associated datasets and digital information objects connected to this resource are available at the Geological Survey of Ireland <https://www.gsi.ie/en-ie/data-and-maps/Pages/default.aspx>

D2	2017-12-18	LG	AF	SW
Issue	Date	By	Chkd	Appd

Kilometers
0 1 2 4

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Geological Heritage

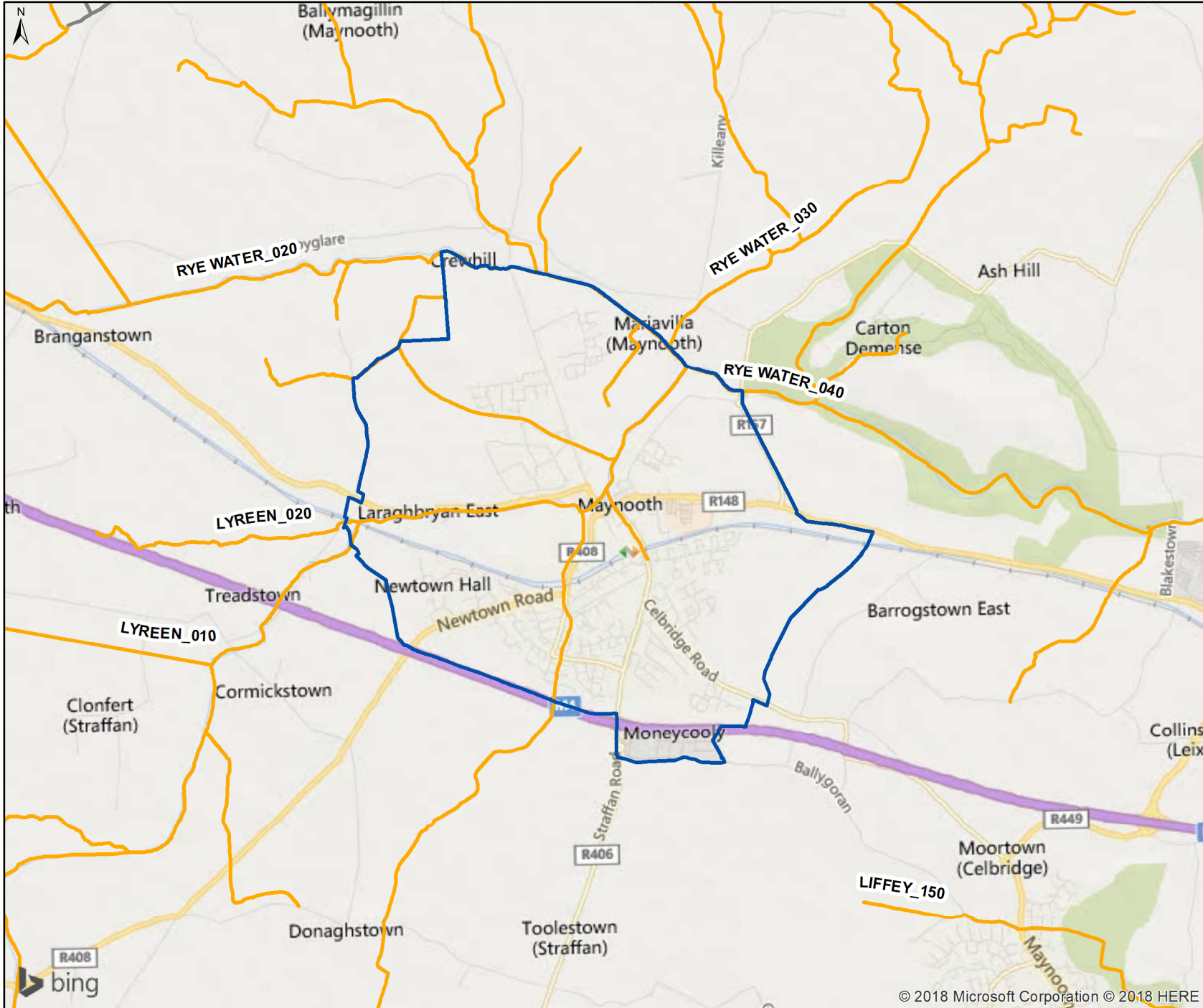
Scale at A4
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Job No 257722-00	Drawing Status Issue
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Drawing No
Figure 3.6

Issue
I1

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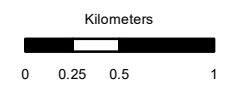


Legend

- Revised LAP Boundary
- River Waterbody WFD Status
- Unassigned

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

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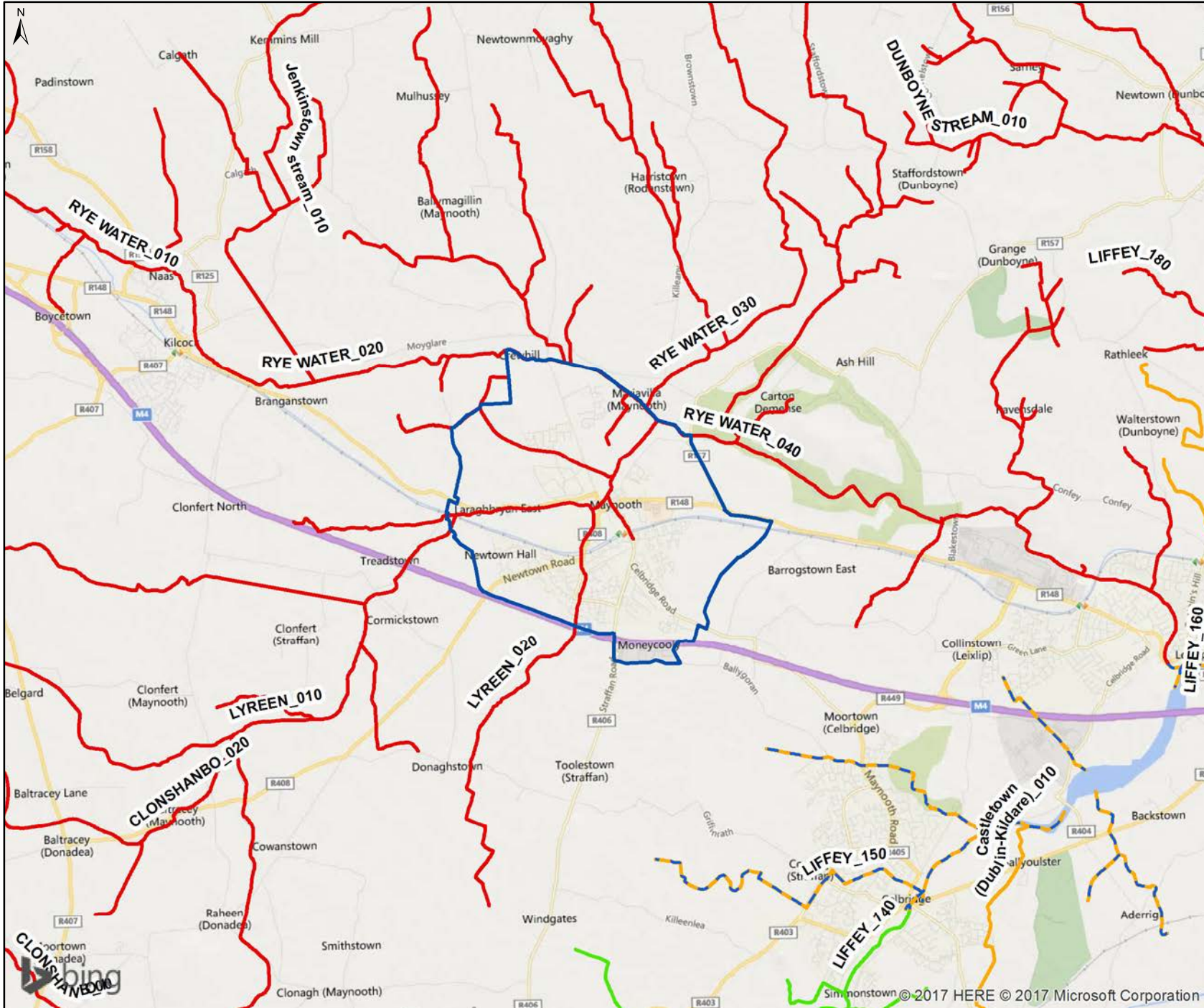
Water Framework Directive - Water Quality

Scale at A4
1:40,000

Job No 257722-00	Drawing Status Issue
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Drawing No Figure 3.7	Issue D2
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Legend

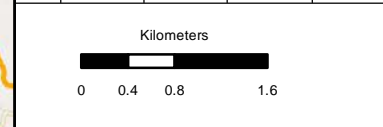
- Revised LAP boundary
- Drinking Water River

Surface Waterbodies Risk Status

- At risk
- Not at risk
- Review

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

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Issue	Date	By	Chkd	Appd



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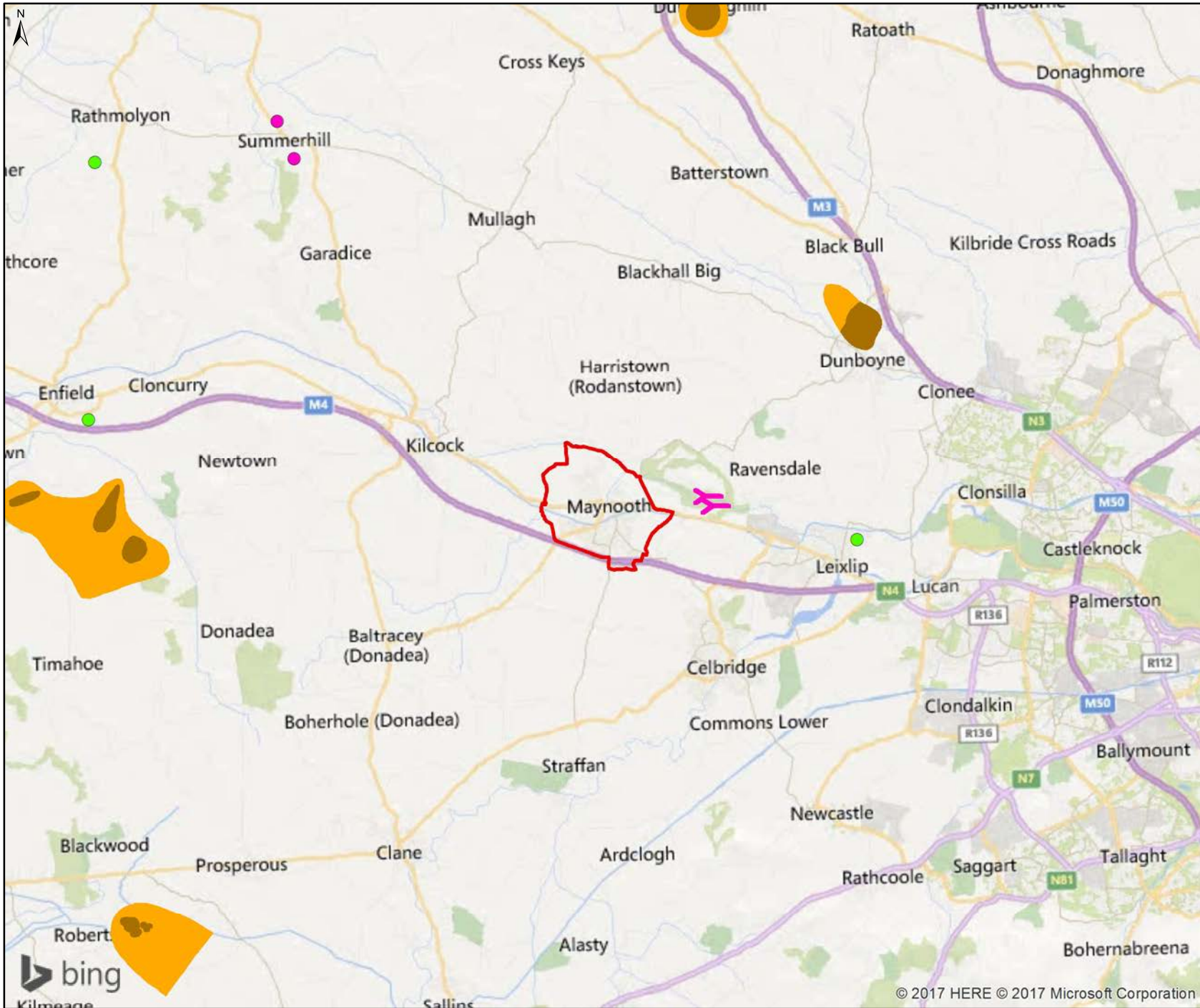
Job Title
**Maynooth LAP
Strategic Environmental Assessment**

Water Framework Directive Risk Status for River Water Quality and Drinking Water – Rivers

Scale at A4
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Job No 257722-00	Drawing Status Issue
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Drawing No Figure 3.8	Issue 11
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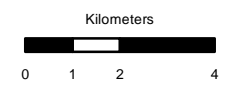


Legend

- Revised LAP boundary
- KARST**
- BOREHOLE
- ✂ CAVE
- SPRING
- Public Supply Source Protection Zones**
- SI - Inner Protection Zone
- SO - Outer Protection Zone

Associated datasets and digital information objects connected to this resource are available at the Geological Survey of Ireland <https://www.gsi.ie/en-ie/data-and-maps/Pages/default.aspx>

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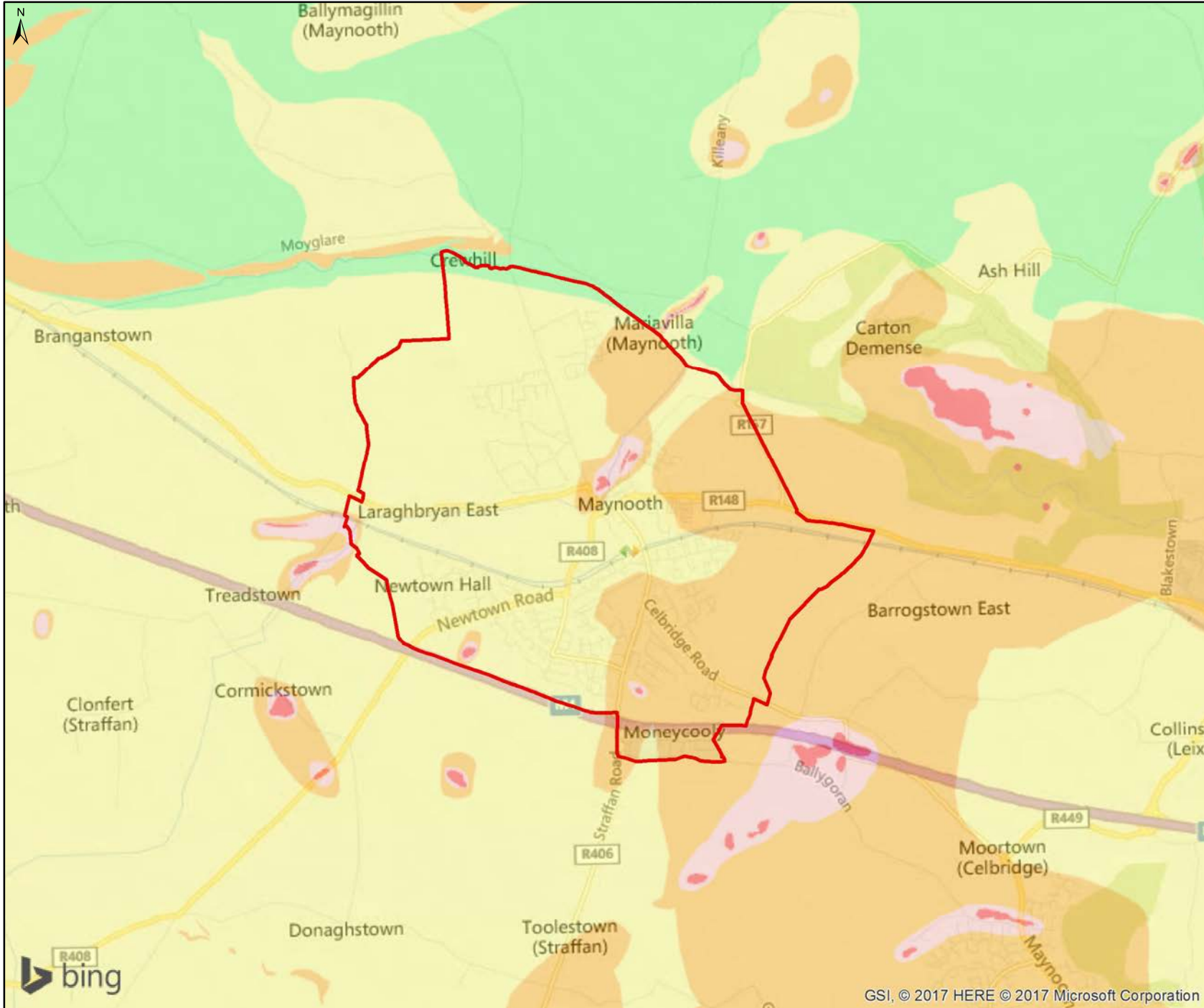
Job Title
**Maynooth LAP
Strategic Environmental Assessment**

**Groundwater Features and
Public Supply Source Protection
Zones**

Scale at A4
1:160,000

Job No 257722-00	Drawing Status Issue
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Drawing No Figure 3.9	Issue I1
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Legend

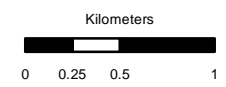
Revised LAP boundary

Groundwater Vulnerability

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

Associated datasets and digital information objects connected to this resource are available at the Geological Survey of Ireland <https://www.gsi.ie/en-ie/data-and-maps/Pages/default.aspx>

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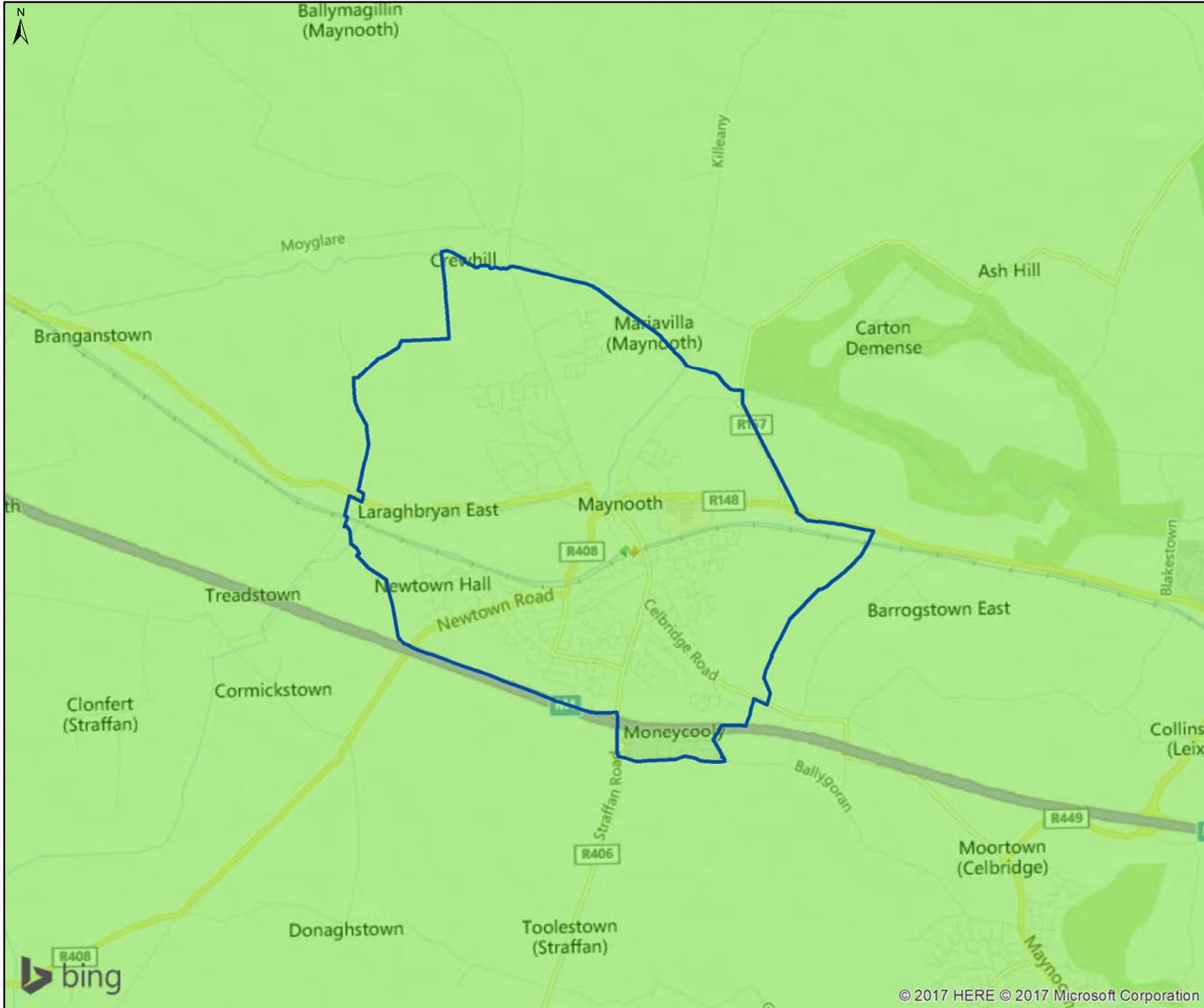
Job Title
**Maynooth LAP
Strategic Environmental Assessment**

Groundwater Vulnerability

Scale at A4
1:40,000

Job No 257722-00	Drawing Status Issue
Drawing No Figure 3.10	Issue I1

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Legend

- Revised LAP boundary

Ground Waterbodies WFD Quality Status 2010 - 2015

- Good

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D2	2017-12-18	LG	AF	SW
Issue	Date	By	Chkd	Appd

Kilometers
0 0.25 0.5 1

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Client
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Job Title
Maynooth LAP Strategic Environmental Assessment

Groundwater WFD Quality Status 2010-2015

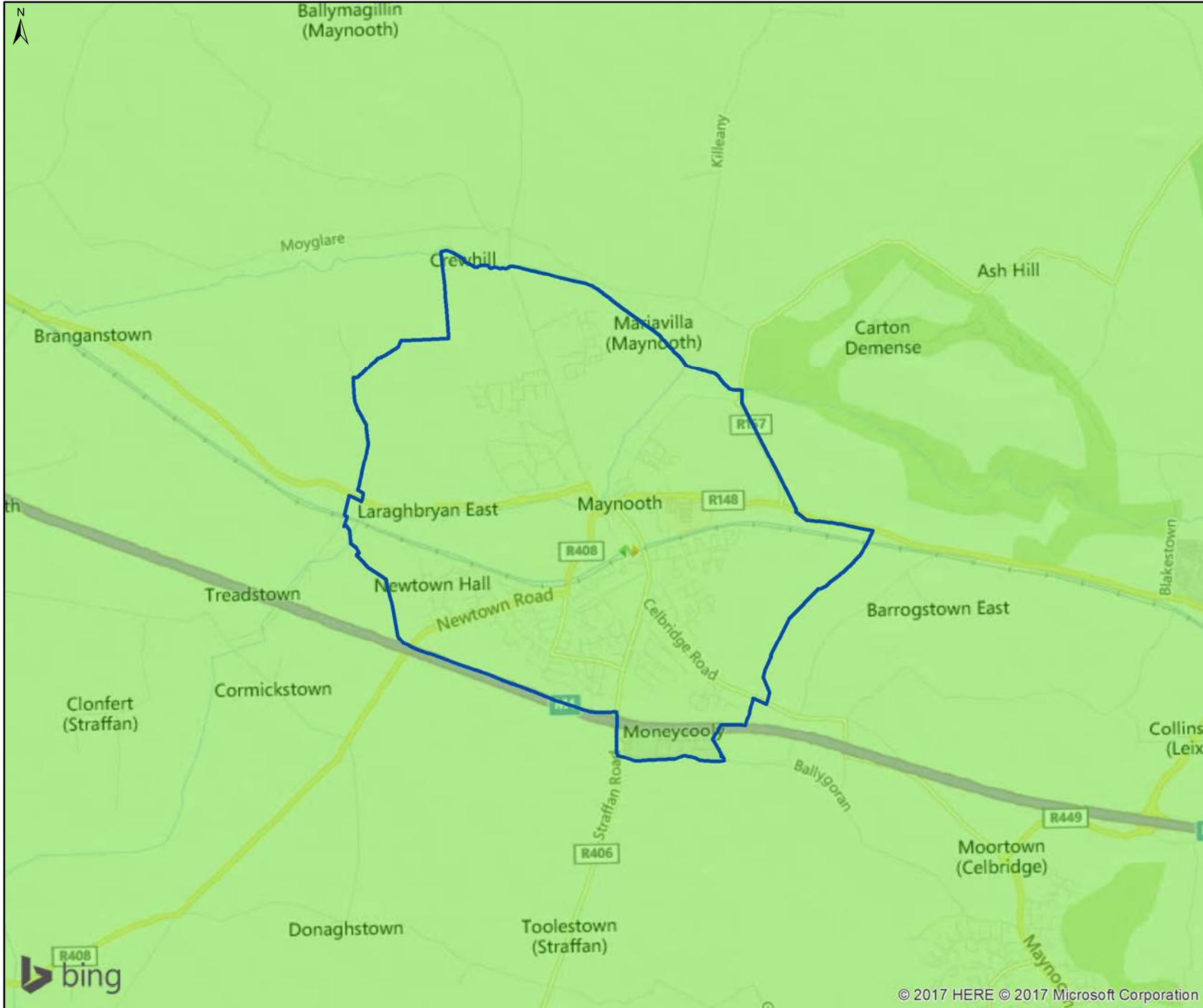
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
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Drawing No
Figure 3.11

Issue I1

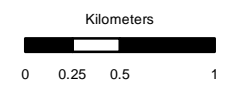
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Legend
 Revised LAP boundary
Ground Waterbodies Risk Status
 Not at risk

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

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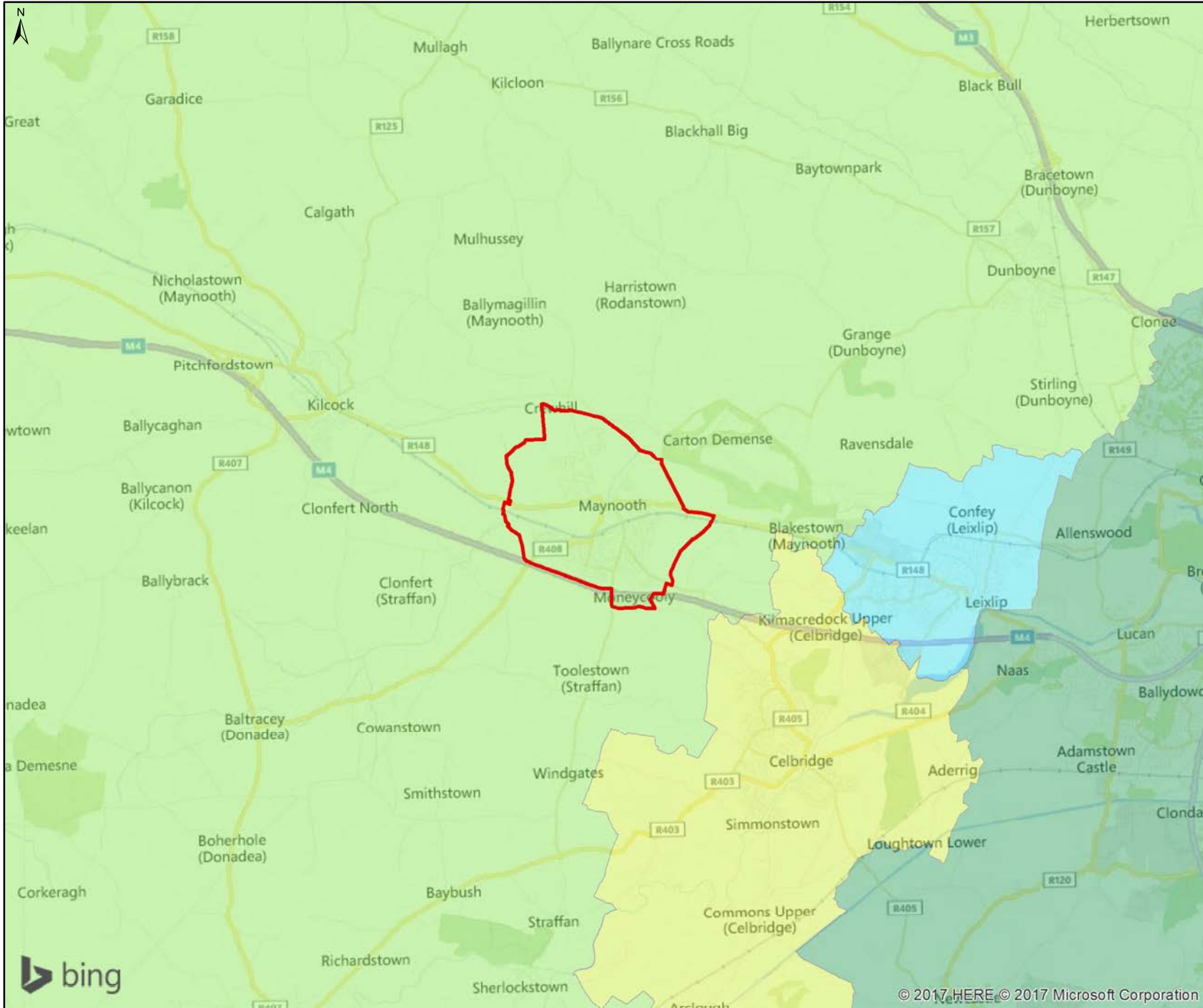
**Water Framework Directive
 Groundwater Risk Status**

Scale at A4
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Job No 257722-00	Drawing Status Issue
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Drawing No Figure 3.12	Issue I1
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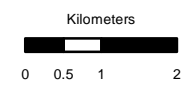


Legend

- Revised LAP boundary
- AirZone, LOCATION**
- ZoneA: Dublin
- ZoneC: Cellbridge
- ZoneC: Leixlip
- ZoneD: Remainder of the State Excluding Zones A, B and C

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

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**Maynooth LAP
Strategic Environmental Assessment**

Air Zones

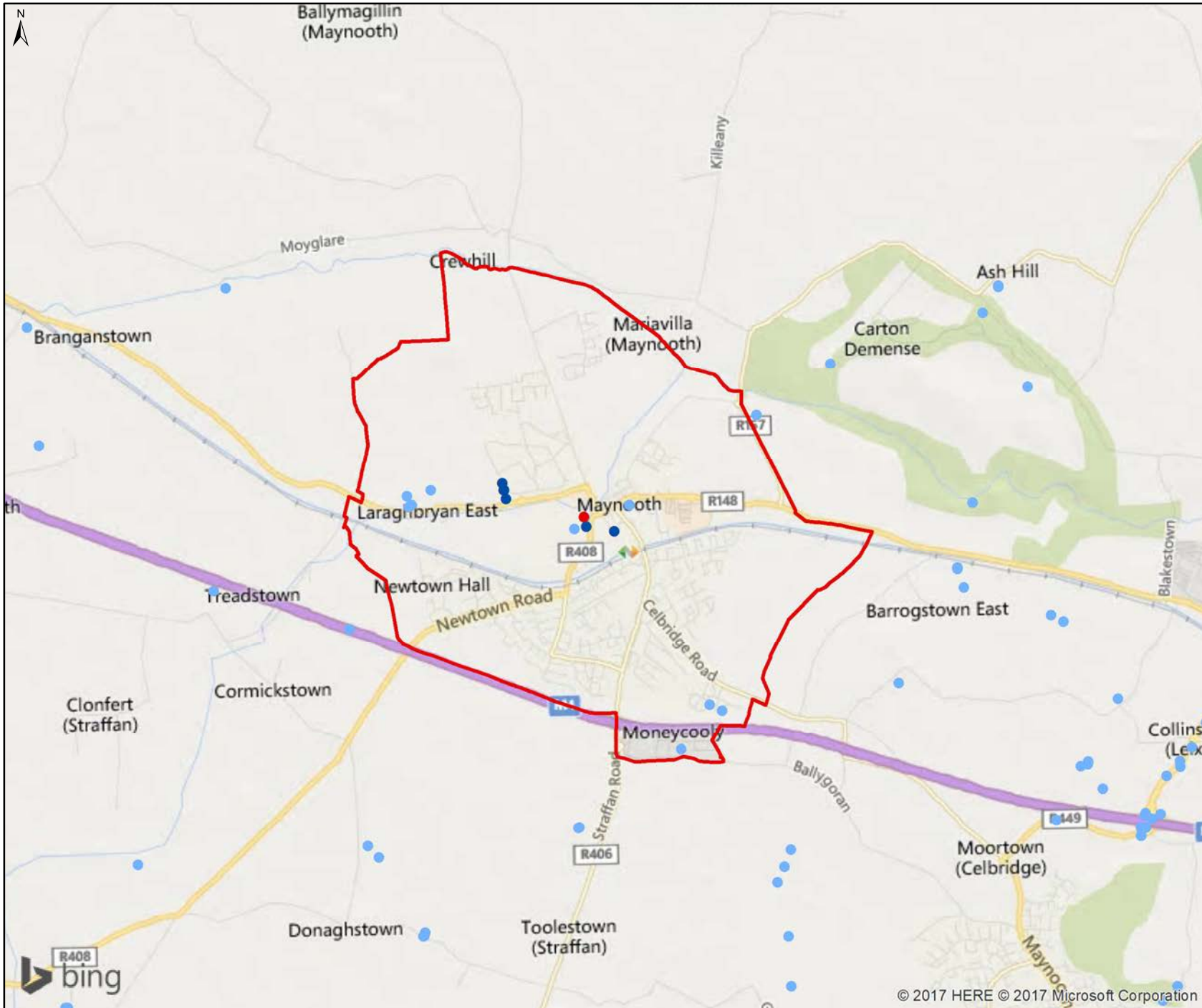
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Job No 257722-00	Drawing Status Issue
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Drawing No Figure 3.13	Issue I1
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Legend

- Revised LAP boundary
- National Monument & Record of Monuments and Places
- Record of Monuments and Places
- Sites and Monuments Record

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

D2	2017-12-18	LG	AF	SW
Issue	Date	By	Chkd	Appd

Kilometers

0 0.25 0.5 1

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**Maynooth LAP
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Sites and Monuments Record

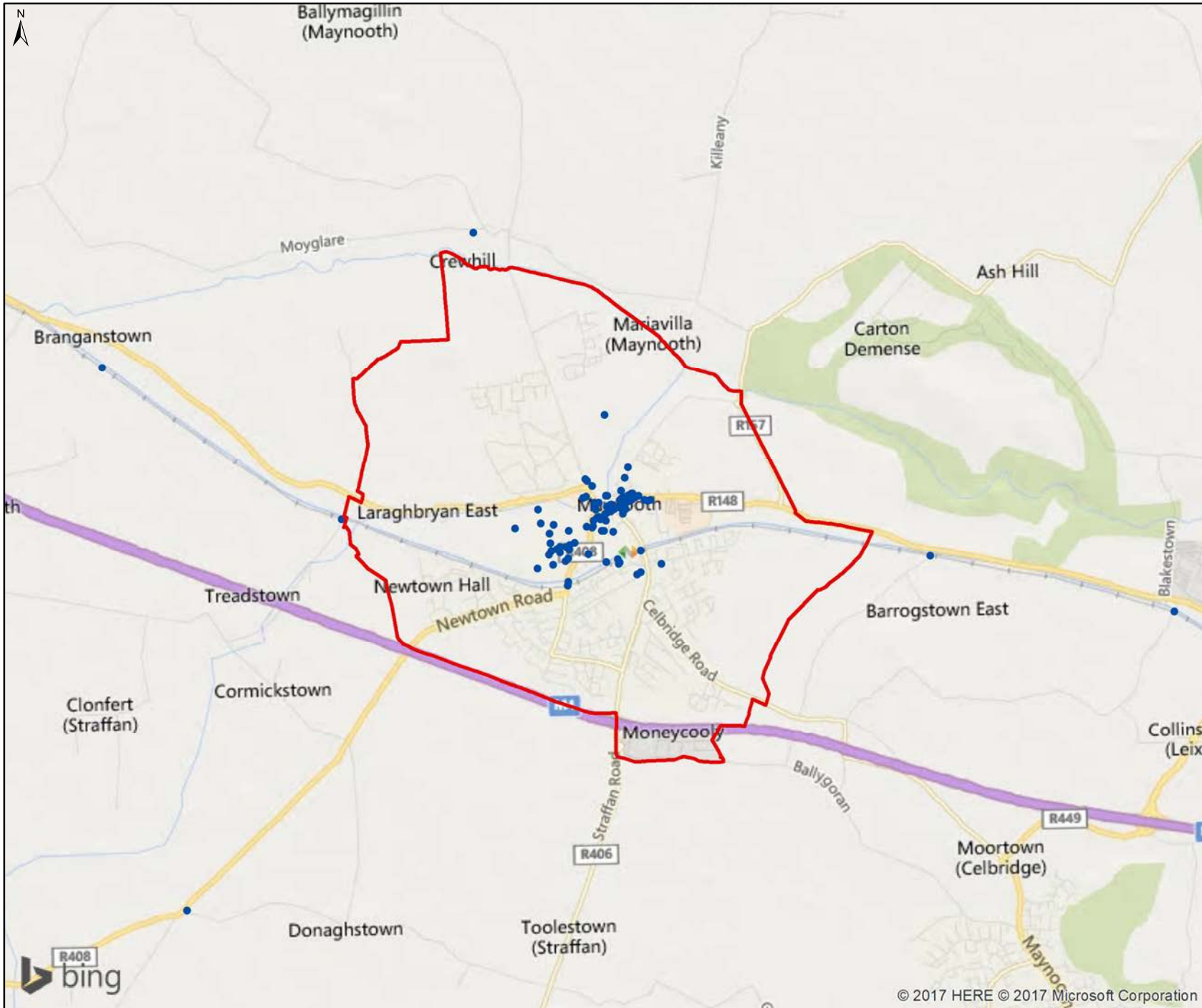
Scale at A4
1:40,000

Job No 257722-00	Drawing Status Issue
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Drawing No
Figure 3.14

Issue
I1

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Legend

- Revised LAP boundary
- Protected Structures

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<http://webgis.archaeology.ie/historicenvironment/>

D2	2017-12-18	LG	AF	SW
Issue	Date	By	Chkd	Appd

Kilometers

0 0.25 0.5 1

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Protected Structures

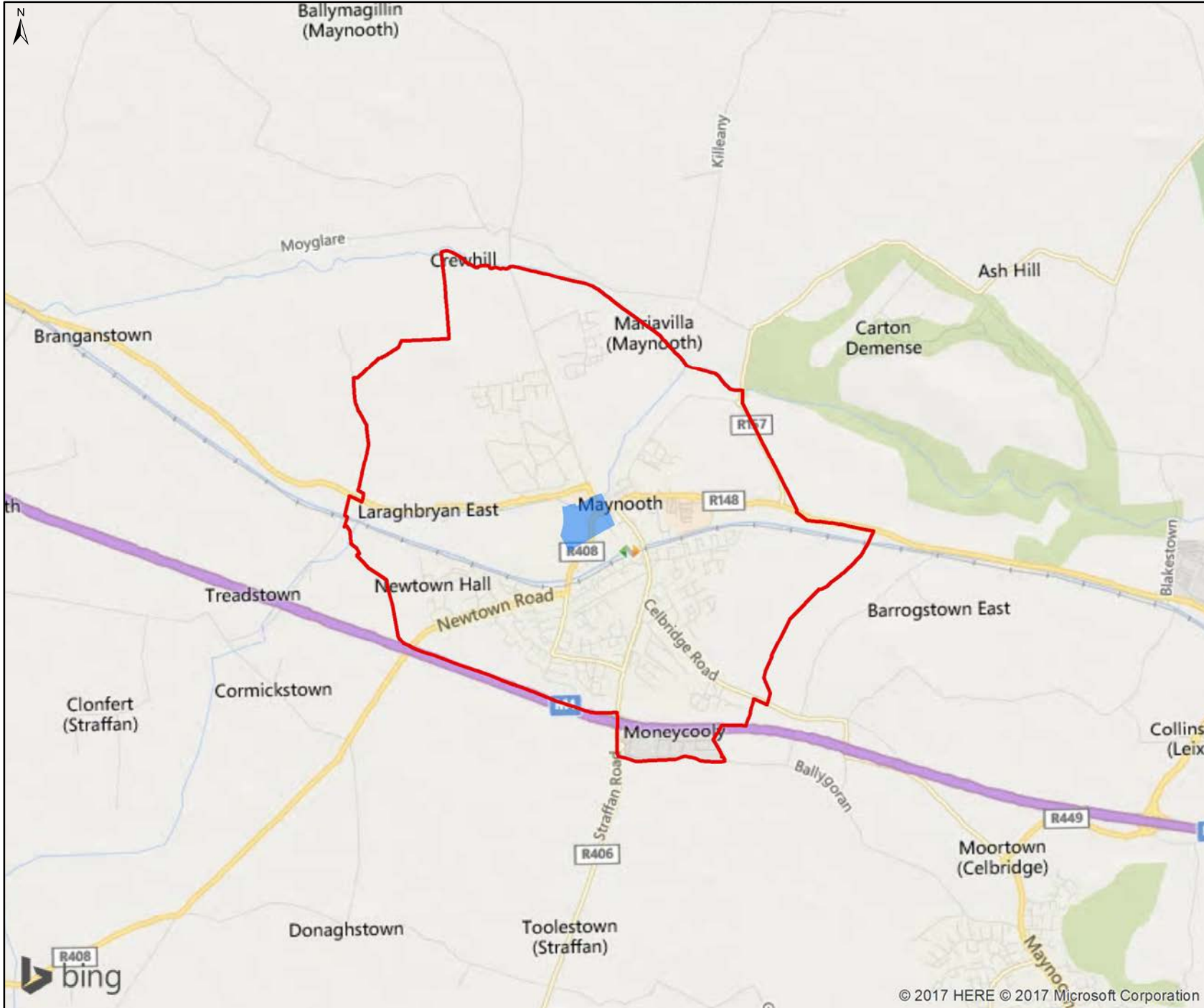
Scale at A4
1:40,000

Job No 257722-00	Drawing Status Issue
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Drawing No
Figure 3.15

Issue
I1

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Legend

- Revised LAP boundary
- Architectural Conservation Area

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Kilometers
 0 0.25 0.5 1

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 Strategic Environmental Assessment**

Architectural Conservation Area

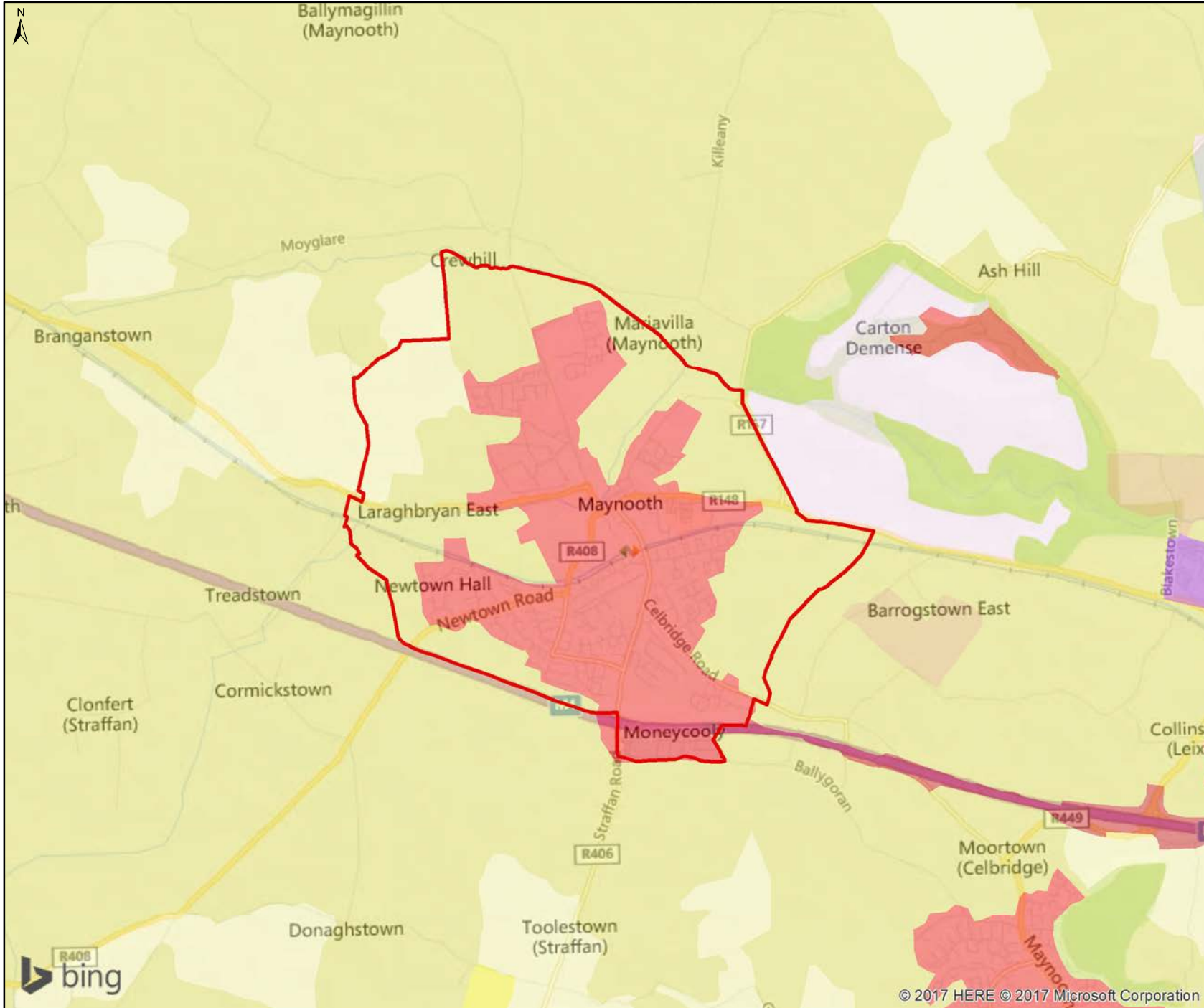
Scale at A4
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Job No 257722-00	Drawing Status Issue
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Drawing No
Figure 3.16

Issue
I1

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Legend

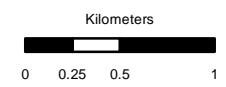
Revised LAP boundary

CORINE Landcover

- 112 Discontinuous urban fabric
- 121 Industrial or commercial units
- 122 Road and rail networks
- 142 Sport and leisure facilities
- 211 Non-irrigated land
- 231 Pastures
- 242 Complex cultivation patterns
- 243 Land principally occupied by agriculture with areas of natural vegetation
- 313 Mixed forest

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

D2	2017-12-18	LG	AF	SW
Issue	Date	By	Chkd	Appd



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Client
Kildare County Council

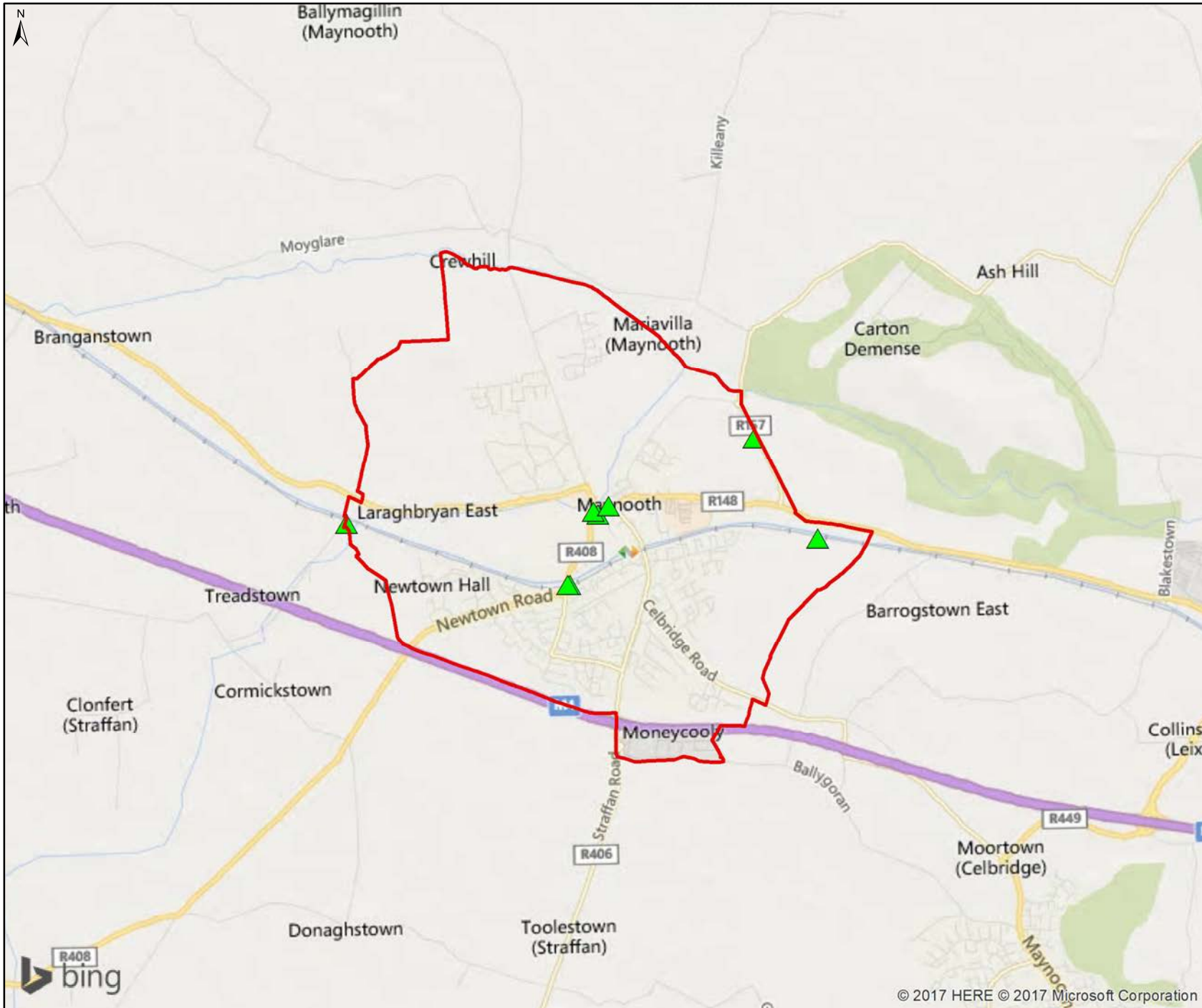
Job Title
**Maynooth LAP
 Strategic Environmental Assessment**

CORINE Landcover

Scale at A4
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Job No 257722-00	Drawing Status Issue
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Drawing No Figure 3.17	Issue I1
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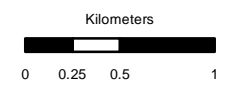


Legend

- Revised LAP boundary
- ▲ Protected Views

Associated datasets and digital information objects connected to this resource are sourced from Kildare County Council.

D2	2017-12-18	LG	AF	SW
Issue	Date	By	Chkd	Appd



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**Maynooth LAP
Strategic Environmental Assessment**

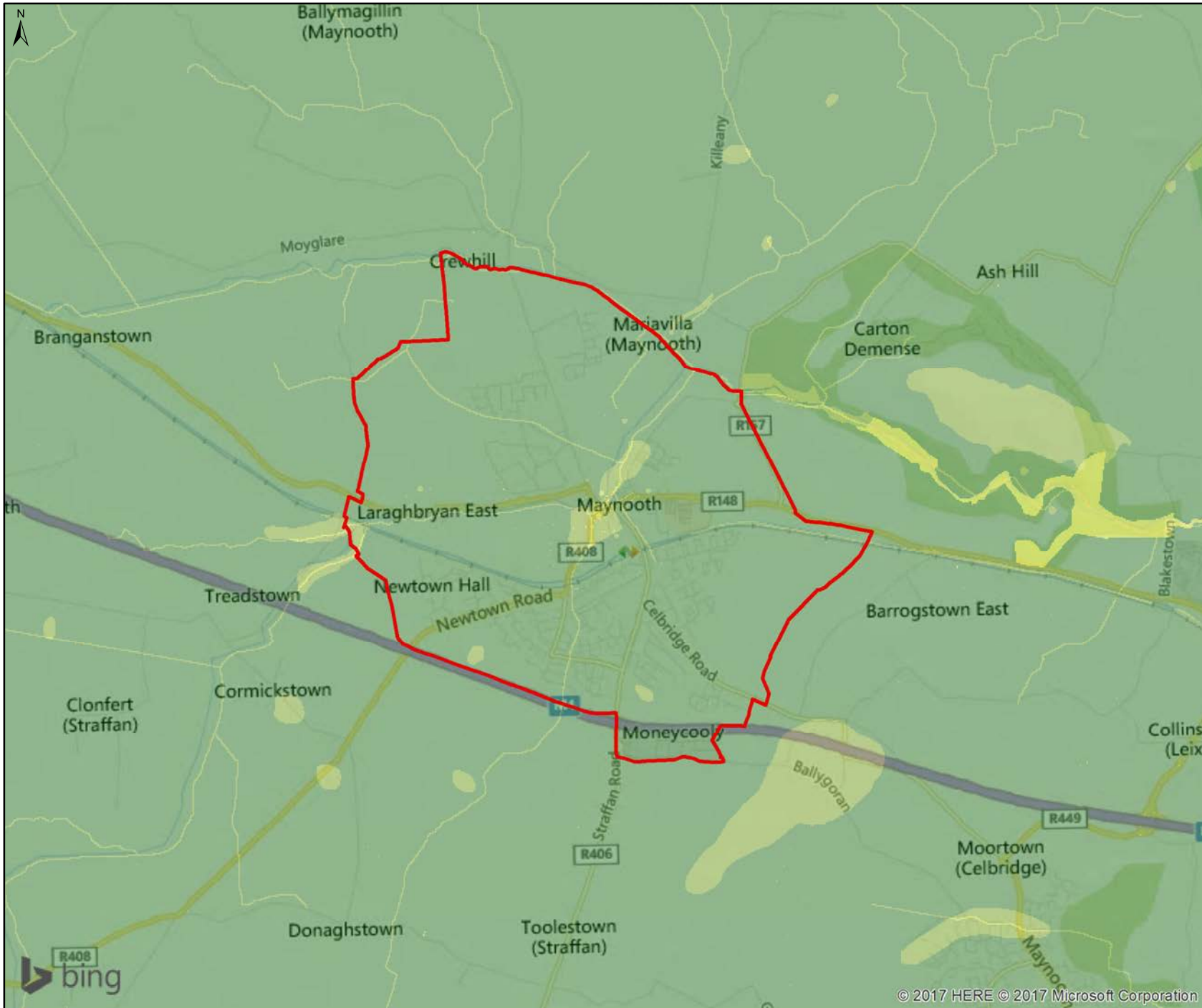
Protected Views and Prospects

Scale at A4
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Job No 257722-00	Drawing Status Issue
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Drawing No Figure 3.18	Issue I1
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Legend

Revised LAP boundary

Sensitivity Rating

- 5 - 10
- 15 - 20
- 25 - 30
- 35 - 40
- >50

Sensitivity Analysis is carried out using the following datasets:

Source NPWS: SAC, SPA, NHA, pNHA
 Source EPA: WFD River Waterbody Status, WFD Ground Waterbody Status
 Source GSI: Goundwater Vulnerability
 Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs: Protected Structures, Recorded Monuments
 Source Kildare Co. Co.: Protected Views, Protected Trees, Architectural Conservation Area.

D2	2017-12-18	LG	AF	SW
Issue	Date	By	Chkd	Appd

Kilometers

0 0.25 0.5 1

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Job Title
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 Strategic Environmental Assessment**

Sensitivity Mapping

Scale at A4
1:40,000

Job No 257722-00	Drawing Status Issue
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Drawing No
Figure 3.19

Issue
I1

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