



# **SEA STATEMENT**

of the

**Ireland West Airport Knock  
Local Area Plan 2012-2018**

**Strategic Environmental Assessment**

**Mayo County Council  
Comhairle Contae Mhaigh Eo**

**Prepared By:  
Forward Planning Section  
Mayo County Council**

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## **Section 1 Introduction**

### **1.1 Terms of Reference**

This is the SEA Statement of the Ireland West Airport Knock Local Area Plan 2012-2018 Strategic Environmental Assessment (SEA)

### **1.2 SEA Definition**

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

### **1.3 Legislative Context**

The SEA is being carried out in order to comply with EU SEA Directive 2001/42/EC. This Directive was transposed into Irish law through the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations (S.I. No 435 of 2004) and the Planning and Development (SEA) Regulations (S.I. No. 436 of 2004).

The SEA is being undertaken under the EC (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. No. 436 of 2004) as amended. The Habitats Directive Assessment (HDA) process has also informed the SEA.

### **1.4 Content of the SEA Statement**

The SEA Statement is required to include information summarising:

- how environmental considerations have been integrated into the Plan,
- how
  - the environmental report,
  - submissions and observations made to the planning authority on the proposed Plan and Environmental Report, and,
  - any transboundary consultations (not relevant to this SEA)have been taken into account during the preparation of the Plan,
- the reasons for choosing the Plan, as adopted, in the light of the other reasonable alternatives dealt with, and
- the measures decided upon to monitor the significant effects of implementation of the Plan

### **1.5 Implications of SEA for the Plan**

As a result of the aforementioned legislation, the Ireland West Airport Knock Local Area Plan 2012-2018 was required to undergo SEA. The findings of the SEA were expressed in the Environmental Report which was submitted to the Elected Members along with the draft LAP. The purpose of the report was to provide a clear understanding of the likely environmental consequences of decisions regarding the development of the airport. The environmental report and the draft LAP were placed on public display in March 2012.

Proposed Alterations to the Draft LAP were evaluated for their environmental consequences and these were presented to the Elected Members and those Alterations that were considered material were placed on public display in August 2012 along with the proposed Alterations in the form of Addendum I to the Environmental Report. On adoption of the draft LAP this addendum was used to update the original Environmental Report into a final Environmental Report which accompanies the adopted LAP.

At each stage of the process the Elected Members took into account the findings of the Environmental Report and/or the Addendum as appropriate.

## **Section 2 How Environmental Considerations were integrated into the Local Area Plan**

### **2.1 Consultations**

The Environmental Protection Agency (EPA), the Department of Environment Heritage and Local Government (DEHLG) and the Department of Communications, Marine and Natural Resources were sent SEA scoping notices, in August 2010, indicating that submissions or observations in relation to the scope and level of detail of the information to be included in the Environmental Report could be made to the Council. Submissions were received on the scope of the SEA from the EPA and DEHLG. These submissions were taken into account during the formulation of the Environment Report.

In addition, a number of other submissions were made on the Local Area Plan and but none related to the Environment Report. Further information on the context of these submissions and how they were taken into account by the SEA is provided under Section 3.2.

### **2.2 Environmental Sensitivities**

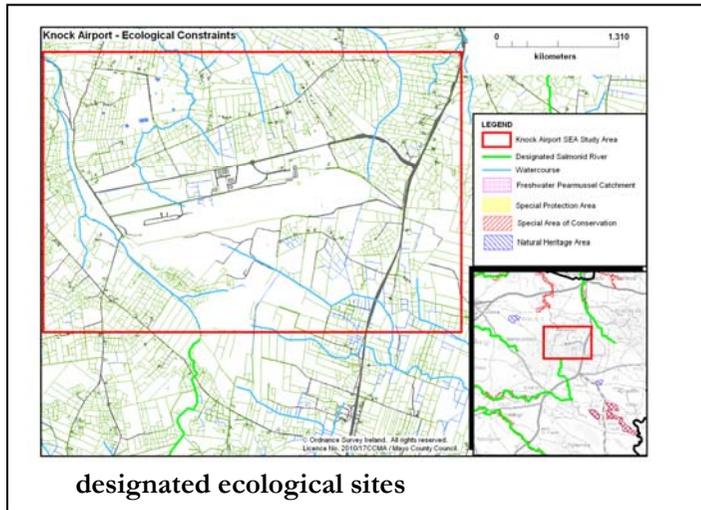
Environmental considerations were integrated into the draft LAP before it was placed on public display for the first time. Environmental Sensitivities were mapped in order to identify which areas of the LAP would be most sensitive to development and would suffer the most adverse effects if growth was to be accommodated in those areas unmitigated.

These sensitivities were communicated to the Plan making team on a regular basis from the outset of the preparation process. Identifying areas with the most limited carrying capacity within the Plan area guided the preparation of the LAP.

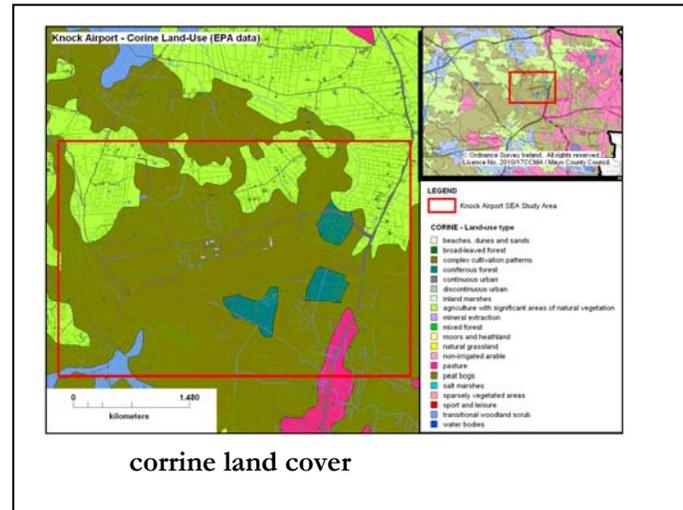
The sensitivities considered by the SEA included the following:

- designated ecological sites
- corine land cover
- soil classification
- geology
- water framework directive (WFD) water body risk assessment
- ecological status of water bodies
- designated Salmonoid water bodies
- waste water treatment plants
- flooding events
- ground water vulnerability
- ground water risk assessment
- waste license and permit sites
- national monuments
- architectural heritage
- landscape and amenity

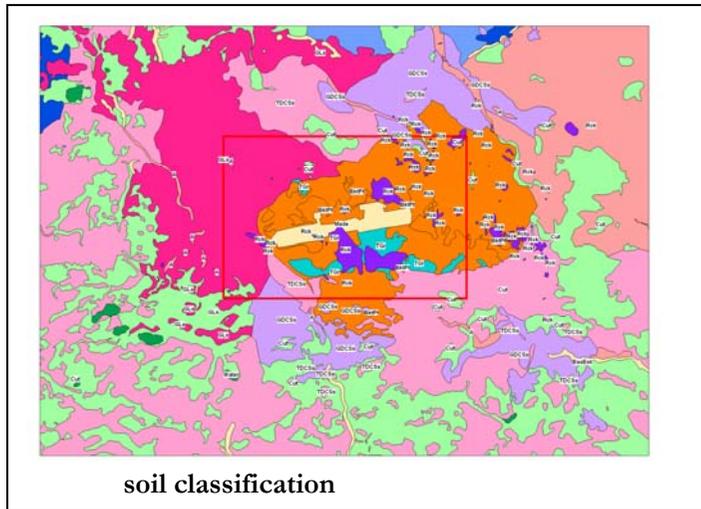
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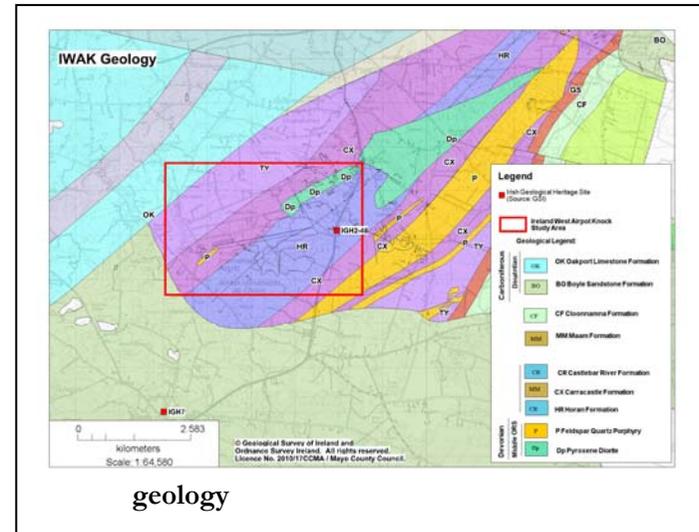
designated ecological sites



corrine land cover

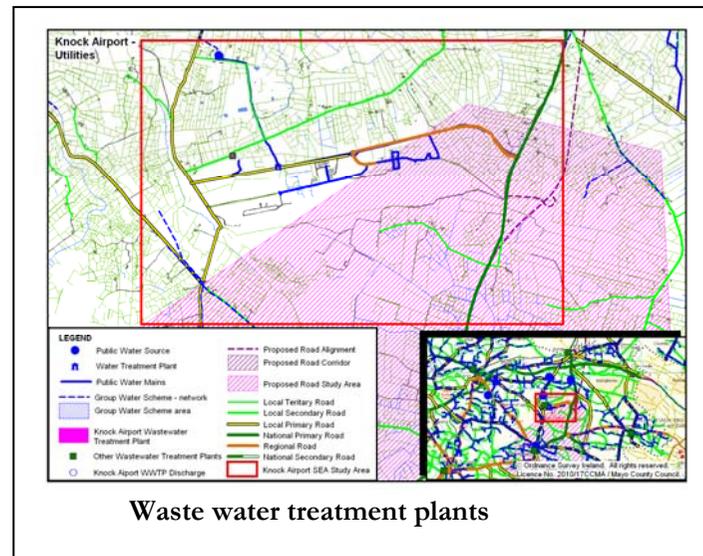
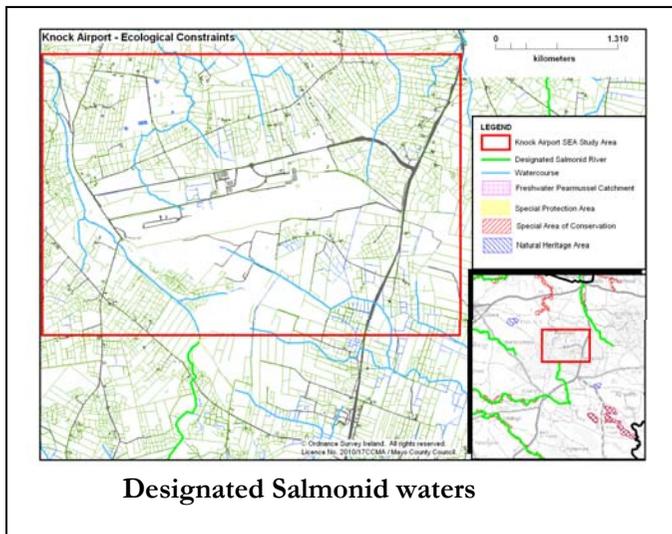
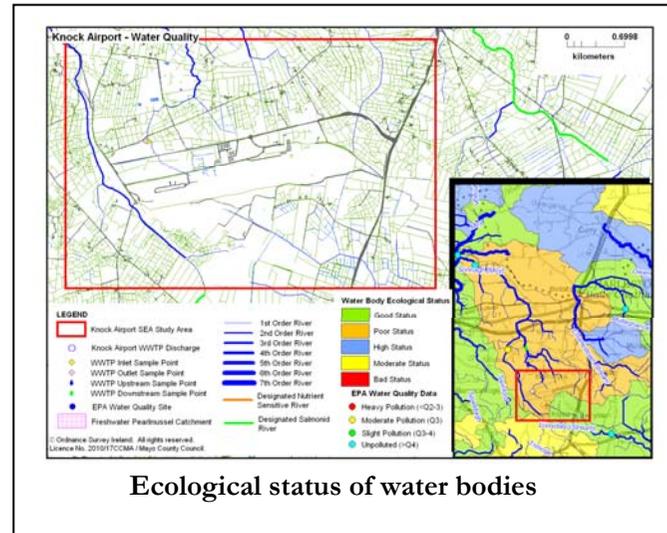
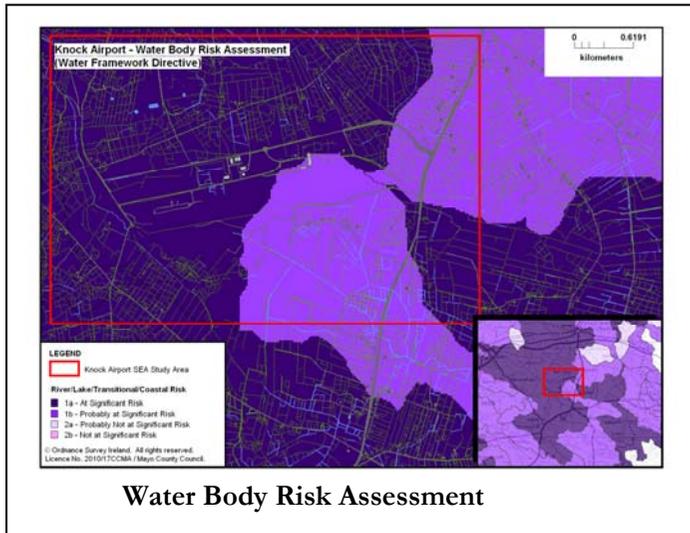


soil classification

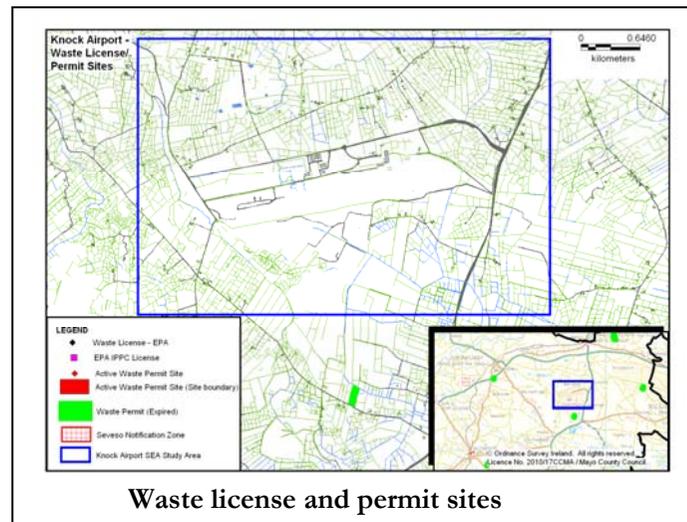
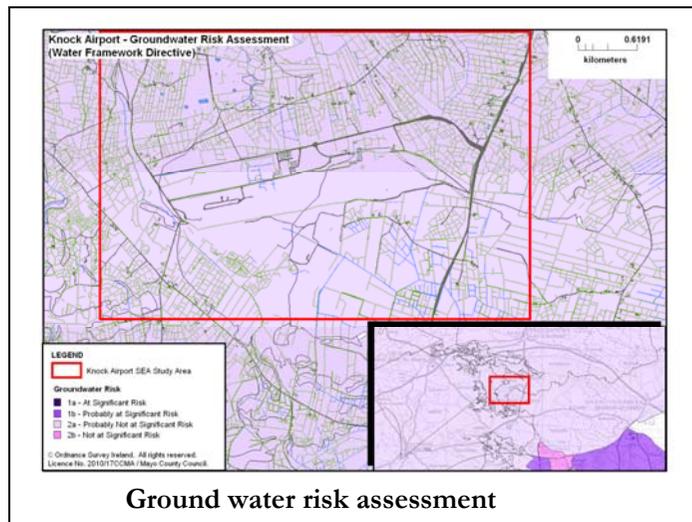
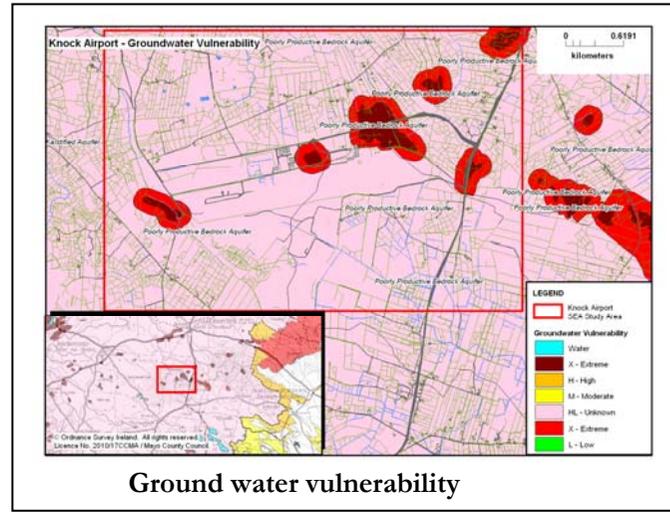
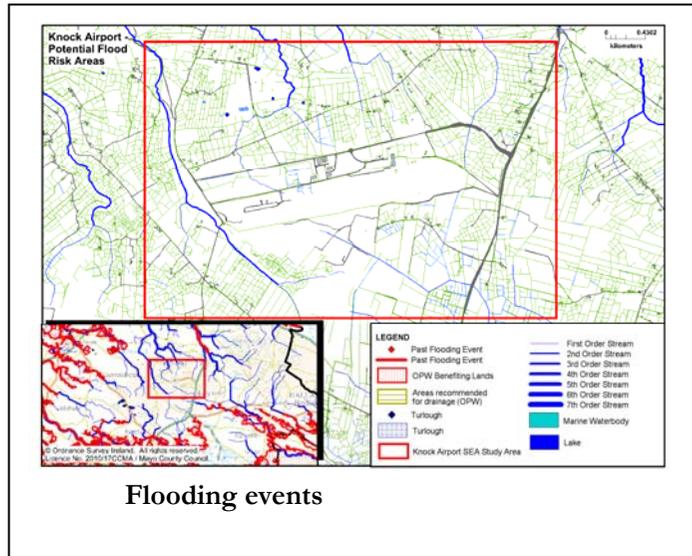


geology

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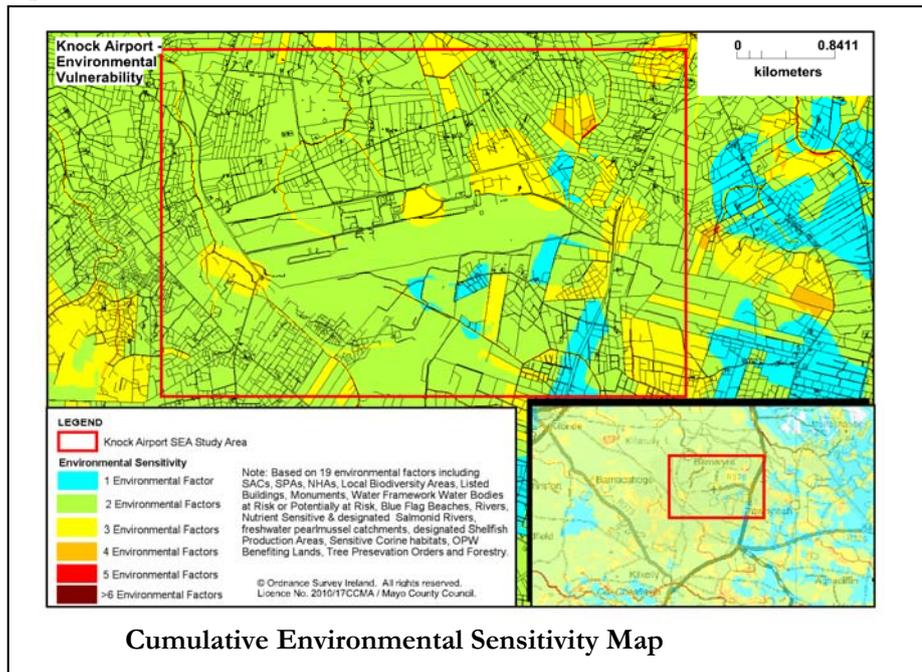


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A Geographical Information System (GIS) was used in order to overlap the above environmental sensitivities onto a map. This allowed for the identification of where most sensitivities within and adjoining the Plan area occur. Where the mapping shows a concentration of environmental sensitivities there is an increased likelihood that development will conflict with these sensitivities and cause environmental deterioration. This is particularly the case where the cumulative development of small-scale projects could gradually cause a slow deterioration of a resource.



### 2.3 Early Identification and Evaluation of Alternatives

A range of potential alternative scenarios for the types of planning strategies for the LAP were identified at an early stage in the process and evaluated for their likely significant effects. (see Section 4) The environmental sensitivities were used in order to predict and evaluate the environmental effects of implementing the scenarios. Communication of the findings of the evaluations enabled the Plan-making team to make an informed choice as to which alternative was to be put before the Elected Members as the proposed LAP. Communication of this evaluation to the Elected Members through the Environmental Report enabled the Elected Members to make an informed choice with regard to the making of the LAP. Mitigation Measures which arose from the evaluation and which were integrated into the LAP area detailed in Section 2.4

### 2.4 Mitigation

Mitigation is a measure to avoid/prevent, minimise/reduce or as fully as possible offset/compensate for any adverse effects on the environment as a result of implementing a plan. Mitigation involves ameliorating significant negative effects. Where there are significant negative effects, consideration is given in the first instance to preventing such effects or, where this is not possible for stated reasons, to lessening or offsetting those effects. Mitigation measures can be roughly divided into those that avoid effects; reduce the magnitude or extent, probability and/or severity of effect; repair effects after they have occurred, and; compensate for effects, balancing out negative impacts with other positive ones. The topics which these mitigation measures cover are as follows:

- bio-diversity, flora and fauna
- population and human health
- soils and geology
- water
- air and climate factors
- material assets
- cultural heritage
- landscape

### 2.4.1 Bio-diversity, Flora and Fauna

Mitigation Measures	Integrated into LAP
All development proposals with the potential to impact on Natura 2000 sites will be subject to Habitat Directive Assessment under Article 6(3) and 6(4) of the Habitats Directive	Policy HP3 Objective HO5
All development proposal shall include an Ecological Assessment where it is considered that it may have an adverse impact on the environment of a designated site (Appendix 3)	Objective HO4 Section 6.3.2
All development proposals should prevent the spread of, aquatic and terrestrial, invasive and alien species	Objective HP5
Any archaeological assessment should also have regard to natural heritage legislation	Objective HO1; HO2; HO3; Section 6.3.8

### 2.4.2 Population and Human Health

Mitigation Measures	Integrated into LAP
<p>Develop design guidelines that represent a preferred set of standards that contribute to achieving quality development, in particular:</p> <ul style="list-style-type: none"> <li>contemporary building design will be encouraged. Building materials should be of a high quality and the buildings should allow for some transparency to the activities of the interior</li> <li>to accomplish development which is responsive to the context, in particular the landscape character</li> <li>to ensure that future development contributes to the creation of a high quality landscape environment on the site, by achieving a high quality parkland type development scheme.</li> <li>to encourage sustainability objectives through environmentally responsible architectural design</li> <li>to create a focus for a wide variety of businesses that offers employees and visitors an attractive environment, that compliments and connects business activities with each other, and with high quality public space</li> </ul>	Objective SO1; SO3; SO4; HO11; HO 12 Section 6.4
Compliance with the Public Safety Zone, Obstacle Limitation and Noise Contour requirements	Policy AP2 Section 6.2 Public Safety Zone Section Aerodrome Safeguarding relating to Obstacle Limitation Surfaces Section Noise Contour Section

### 2.4.3 Soils and Geology

Mitigation Measures	Integrated into LAP
All development proposals that require peat or vegetation removal shall prepare a peat management and disposal plan.	Section 6.3.3 Appendix 2
Where development proposals involve the excavation of peat and soft soils on slopes a geotechnical assessment of the potential risk of landslides should be prepared.	Section 6.3.4

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### 2.4.4 Water

Mitigation Measures	Integrated into LAP
There should be full and strict compliance with the programme of measures developed to achieve the specific objectives of the Western River Basin Management Plan, in addition to enforcement of / compliance with local legislation and plans (RMCEI*, bye-laws and Water Management Unit specific measures), national and EU legislation.	Objective HO6; HO7; HO8
A Habitats Directive Assessment (post screening) will be required to assess the potential adverse impacts of any plan or project, where considered appropriate, either individually or in combination with other plans or projects on a European Site, including SACs, SPAs and also RAMSAR sites (classified under the RAMSAR Convention, 1971) within or pertaining to the Plan Area. This should include waste assimilative capacity predictions to ensure that the capacity of existing surface waters is sufficient to accept new / increased discharges with no deterioration in current water body status.	Policy HP3 Objective HO5
Surface Water Management Plan should be prepared for all development proposals	Section 6.3.5

### 2.4.5 Air and Climate Factors

Mitigation Measures	Integrated into LAP
Prepare a dust minimisation plan for any development proposal	Section 6.3.1 Appendix 3
All development proposals should include means to reduce the carbon footprint of the development scheme through innovate design and site layout solutions as well as implementing efficiency and renewable energy technologies. Development proposals should: <ul style="list-style-type: none"> <li>• combine energy efficiency measures with renewable energy technologies and resource consumption plans and examine features such as: <ul style="list-style-type: none"> <li>○ building fabric</li> <li>○ heating</li> <li>○ hot water controls</li> <li>○ combined heat and power</li> <li>○ ventilation and air conditioning</li> <li>○ powering pumps and fans</li> <li>○ lighting controls</li> <li>○ office/catering equipment</li> <li>○ transport requirements</li> </ul> </li> </ul>	Objective SO1; SO4 Section 6.3.6 Section 6.4
Comply with Noise Contour requirements	Policy AP2 Section 6.2 Noise Contour Section
Factor in noise barriers and noise protection into the building and site layout design	Section 6.4 Section 6.9 Noise Contour Section
All new development proposals within or close to flood risk areas shall submit a flood risk assessment which should incorporate flood protection and mitigation measures, as appropriate	Objective HO9; HO10 Section 6.3.1 Appendix 3

### 2.4.6 Material Assets

Mitigation Measures	Integrated into LAP
Assess the adequacy of the road network in the LAP area in terms of capacity, width, alignment or surface condition in order to cater for increased traffic. Any	Objective TO4

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deficiencies identified should be addressed within a reasonable timeframe by the relevant authority	
Use of shared access points onto the public road network	Objective TO5
Encourage the use of energy efficiency in all new development proposals, with the ultimate aim of achieving a Carbon Neutral Status	Objective SO1
Reduce energy consumption through innovative design and layout with the appropriate use of materials and new technology in developments proposals	Objective SO3
Prepare a waste management plan for construction and demolition projects	Section 6.3.1 Appendix 4
Prepare an Operation Waste Management Plan to minimise waste production and maximise recycling and recovery through the introduction of sustainable waste management practices in all development proposals	Objective SO5 Section 6.3.7
Prepare Surface Water Management Plan to ensure that any discharges to ground waters do not cause deterioration in the current water body status	Objective IO6; IO7 Section 6.3.

### 2.4.7 Cultural Heritage

Mitigation Measures	Integrated into LAP
<p>In order to safeguard the integrity of the archaeological sites in their setting in the landscape an archaeological assessment shall be submitted for:</p> <ul style="list-style-type: none"> <li>• planning applications that fall within the zones of archaeological potential as outlined on the Record of Monuments and Places</li> <li>• all significant planning applications (i.e. development of lands on 0.5ha or more than 1km or more in length)</li> </ul>	Objective HO1; HO2; HO3 Section 6.3.8
<p>Provide an architectural and urban design palette that contributes to achieving quality development, in particular:</p> <ul style="list-style-type: none"> <li>• contemporary building design will be encouraged. Building materials should be of a high quality and the buildings should allow for some transparency to the activities of the interior</li> <li>• to accomplish development which is responsive to the context, in particular the landscape character</li> <li>• to ensure that future development contributes to the creation of a high quality landscape environment on the site, by achieving a high quality parkland type development scheme.</li> <li>• to encourage sustainability objectives through environmentally responsible architectural design</li> </ul> <p>to create a focus for a wide variety of businesses that offers employees and visitors an attractive environment, that compliments and connects business activities with each other, and with high quality public space</p>	Section 6.4
Retain, where possible, of all features of historic, architectural or natural interest, such as stone walls, hedgerows and/or bridges or other features	Objective HO12 Section 6.4

### 2.4.8 Landscape

Mitigation Measures	Integrated into LAP
All proposed development should be designed to absorb into the surrounding landscape so that it does not impinge in any significant way upon the character, integrity or uniformity of the landscape and that all development proposals consider that aspects of access, permeability and open space respond to the key landforms features and rural character of the area	Objective HO11
Development proposals should contribute to the creation of a high quality landscape environment by achieving a high quality parkland type of development scheme.	Section 6.4

### Section 3 Environmental Report and Submissions/Observations

#### 3.1 Introduction

This section details how the Environmental Report and submissions/observations made to the Planning Authority on the Environmental Report and SEA process have been taken into account during the preparation of the LAP.

#### 3.2 SEA Scoping Submissions

The EPA, DEHGL and DCMNR were all sent SEA scoping notices indicating that submissions or observations in relation to the scope and level of detail of the information to be included in the Environmental Report could be made to the Council. These Submissions were taken into account during the formulation of the scope of the SEA and while undertaking the SEA. Both the EPA and DEHLG sent in submissions.

The EPA's submission included the following:

SEA Pack and SEA Scoping Guidance Document were submitted to assist in undertaking the SEA. The SEA team are referred to the EPA's web based Environmental Mapping / GIS ENVision and required to take account of maps and data and additional information associated with the WRBD and Protected Areas within the WRBD. The EPA also requested the following matters to be considered in the preparation of the LAP and SEA:

- 1) In advance of any statutory requirement under the Noise Directive to carry out Strategic Noise Mapping, consideration should be given to increasing annual noise monitoring at the airport from annually to a six month or quarterly basis to increase greater baseline information to inform predictions of likely future noise levels.
- 2) Consideration should be given to establishing an integrated Environmental Management Plan for the Plan area, to address issues of Waste, Wastewater, Drinking Water, Integrated Traffic Management and Air Quality Issues, Surface Water / Groundwater Quality, Flooding, Landscaping and upkeep etc.
- 3) Habitat mapping including flight paths should be carried out and reported on.

Consideration should be given to inclusion of appropriate buffer zones between airside, landside and business park areas and also between the Plan area and its environs.

The DEHLG's submission included the following:

#### Architectural Heritage

- 1) Noted that setting out a LAP could have a significant effect on the architectural heritage of the locality and the wider region. The present environment consists largely of open terrain at an elevated location upon which an airport has been built. The Challenge is to develop a built environment of distinction at Ireland West Airport Knock which benefits its status of being the international gateway to the West of Ireland. New development should enhance the local environment and contribute to creating a place of distinction. And it is advised a need to develop an architectural framework for the LAP which will guide development within its area of immediate influence and ensure good quality design which will enhance the public realm. While the LAP may only relate to the immediate area the associated SEA may need to extend to a much wider area.
- 2) It is also highlighted that it is frequently overlooked in SEA that it is significant effect on architectural heritage must taken into account and not just effects on protected structures. It is pointed out that reference in SEA to significant effects on just protected structures or the content of the National Inventory of Architectural Heritage county survey is likely to lead to short comings in any assessment which might leave the validity of the SEA process for a particular plan open to challenge.

#### Appropriate Assessment

- 1) Concurs with the need for Appropriate Assessment (AA) as there are risks to Natura 2000 sites and their conservation objectives, arising from the LAP alone and in combination with other plans and projects. A key concern is the potential for indirect or cumulative impacts on river systems in the area, particularly River Moy cSAC (site code 2298) in the north and south-west.
- 2) Key guidance documents relating to the AA are listed.

- 3) Potential effects of the LAP on Natura 2000 include: Infrastructure to support the airport and business park; energy supply; telecommunications; water regulation and flood prevention; quarrying and extraction; peat excavation, storage, disposal and geotechnical stability; zoning, changes in land use and habitat loss and fragmentation; noise; lighting; air pollution.
- 4) AA should examine, assess and inform the LAP and any risks of significant effects on Natura 2000 sites removed by omitting/revising policies/objectives/targets, further scientific study and assessment, or plan-level mitigation to be incorporated into the LAP.
- 5) In the event that policies, objectives etc. are made conditional on adequate evaluations & assessments being undertaken at lower plan/project level, it is advised that, as a minimum, these situations should be noted clearly in the LAP & that a statement be included of the issues being addressed without favouring a specified solution; and also set out other matters in consideration of Article 6 (3) regarding AA of issues that may arise, consideration of alternative solutions & compensatory measures.
- 6) AA should be undertaken by/in conjunction with suitably qualified ecologists in conjunction with the Biodiversity, Flora and Fauna section of the SEA.
- 7) Any amendments / changes to the LAP must also be subject to AA and SEA Screening.

#### SEA

- 1) The Biodiversity, Flora and Fauna section of the SEA should be undertaken by or in conjunction with suitably qualified ecologists, and in conjunction with the AA to ensure full integration of biodiversity issues and concerns, particularly in relation to protected ecological sites and species, and Article 10 of the Habitats Directive.
- 2) The scope of the SEA should include: all protected ecological sites; available information on habitats and protected species; all watercourses, water bodies and associated wetlands, including flood risk areas; Local biodiversity areas; ecological networks and stepping stones
- 3) Where habitat mapping is available, this should be used to inform and assess the potential impacts of any zoning or other proposed land uses. Where habitat mapping is not available, habitat surveys should be carried out for the plan area. No currently undeveloped lands should be zoned, rezoned or reserved for development, or included in master plans in the absence of information on the ecological sensitivities of the lands in question, including a review of nature conservation designations and habitat mapping.
- 4) Strategic environmental objectives should be included for protected ecological sites, protected species and for habitats of ecological significance, including all Habitat Directive Annex 1 habitats.

#### The LAP

- 1) The LAP should: give a positive and proactive commitment to affording the highest level of protection to Natura 2000 sites, and other protected ecological sites, through the proper application of the Habitats Directive; ensure the conservation and protection of all protected species; ensure the conservation, protection and enhancement of ecological corridor and networks and of stepping stones in line with the Habitats Directive; include a list and map of any protected ecological sites; Include objectives for the conservation and protection of all conservation sites over the lifespan of the LAP
- 2) Compliance with the requirements of the Habitats directive and other wildlife legislation should permeate all sections of the plan and all policies and objectives.
- 3) No undeveloped areas should be zoned, rezoned or reserved for development in the absence of information on the ecological sensitivities of the lands in question, including a review of nature conservation designates and habitat mapping.

#### Archaeology

- 1) Outlines policies and objectives to be included in the LAP for the protection of Archaeological Heritage

The procedures for dealing with applications for development are outlined

### 3.3 Submissions and Observations

#### 3.3.1 Draft LAP and Environmental Report

In total seven submissions were received on the draft LAP whilst it was on public display. Only the submission from the EPA made reference to the Environmental Report. The information contained in these submissions were taken into account by the SEA as well as the Appropriate

Assessment which was undertaken by Mayo County Council for the LAP. The submission from the EPA resulted in:

- updating Section 3 “The Baseline Environment” of the Environment Report, to include the 2011 Census data.
- providing a cumulative environmental sensitivity map within the SEA. This is now included in Section 4.10 of the Environment Report.
- including a section for the “Evolution of the Environment without implementation of the LAP” in the non technical summary
- identifying the short, medium, long term effects, temporary, permanent positive and negative effects in relation to the preferred alternative, and the use of a table to summarise all this information. This was carried out and included in Section 6.8.2 of the Environment Report.

The submission also suggests the strengthening of some of the policies and objectives of the LAP and the reports required as part of the development plan process. The submission also suggests more clarity in the monitoring programme suggested in the Environmental Report.

### **3.3.2 Proposed Alterations and Addendum I**

A number of alterations to the LAP were proposed by the Elected Members, all alterations were evaluated for their environmental consequences and those alterations that were considered Material Alterations were placed on public display alongside Addendum I to the Environmental Report. There was one submission to the Material Alterations but this did not relate to the SEA or Environment Report and was not submitted by a statutory authority. Addendum I details the responses to the Material Alterations to the draft LAP and includes updates for both the LAP and Environmental Report as a result of the Material Alterations.

### **3.4 Environmental Report**

The findings of the SEA were expressed in the Environmental Report which was submitted to the Elected Members alongside the draft LAP. The purpose of the report was to provide a clear understanding of the likely environmental consequences of decisions regarding development at the airport. The Environmental Report and the draft LAP were placed on public display in March 2012. Proposed alterations to the draft LAP were evaluated for their environmental consequences and these were presented to the Elected Members and put on public display in August 2012. On Adoption of the draft Lap, Addendum I was used to update the original Environmental Report into a final Environmental Report which accompanies the adopted LAP. At each stage of the process the Elected Members took into account the findings of the Environmental Report and/or the Addendum as appropriate.

## Section 4 Alternatives and the LAP

### 4.1 Introduction

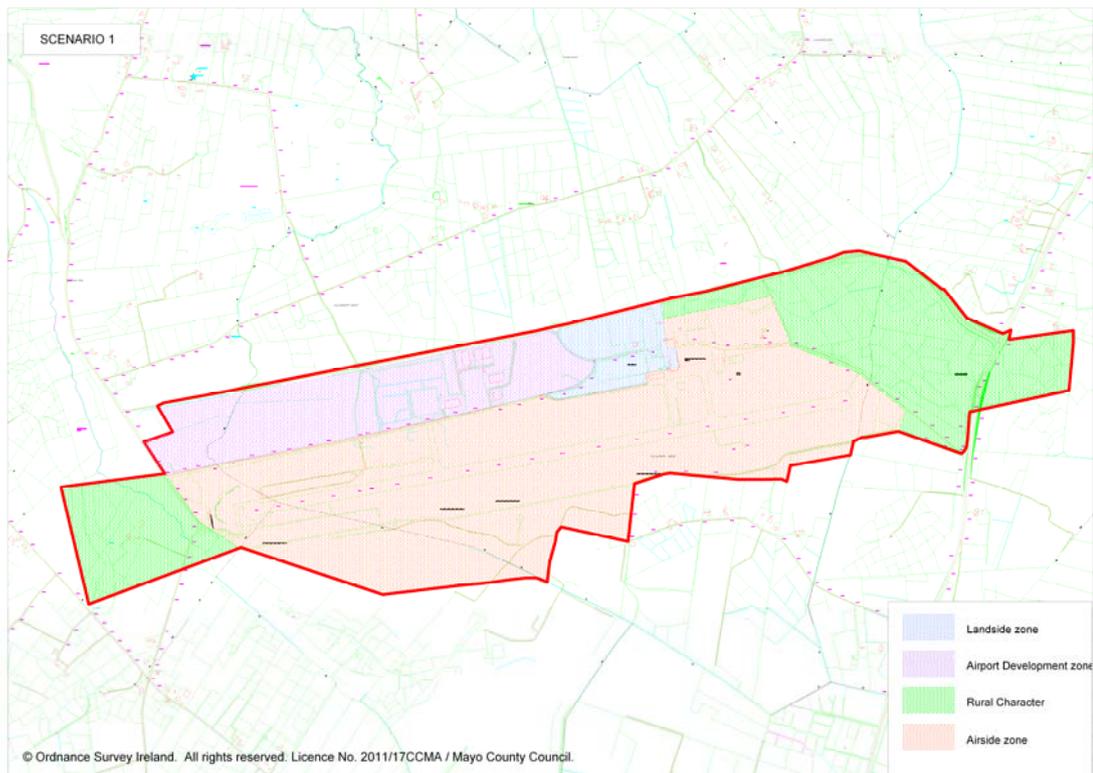
This section describes the alternative scenarios for the LAP, summarises the evaluation for the likely environmental effects which is provided in the Environmental Report and identifies the reasons for choosing the LAP, as adopted, in light of the other reasonable alternatives dealt with.

### 4.2 Description of the Alternative Scenarios

#### 4.2.1 Alternative Scenario 1

Scenario 1 expands on the existing situation, with all zones expanding naturally as development occurs. The plan boundary to the North relates to the regional road. The Rural Character zone extending from the end of the runway is necessary to preserve land for future navigational equipment. Hangerage and aircraft maintenance would locate to the South of the existing runway.

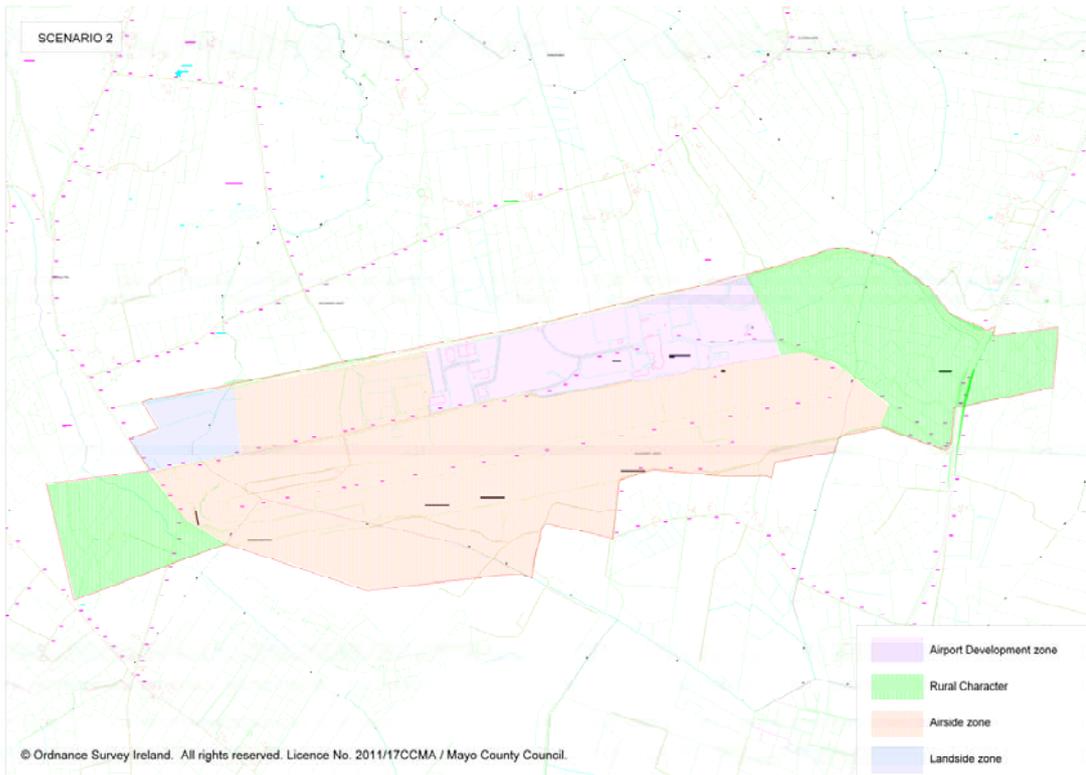
Scenario 1



#### 4.2.2 Alternative Scenario 2

Scenario 2 expands the existing Airport Development zone (business park area) to the east of the plan area into the airport zones. The airport terminal and access will relocate to the West of the Airport Development zone. The terminal area could also be located on the lands to the South of the runway. The existing terminal building would be redeveloped to a use associated with the Airport Development Zone

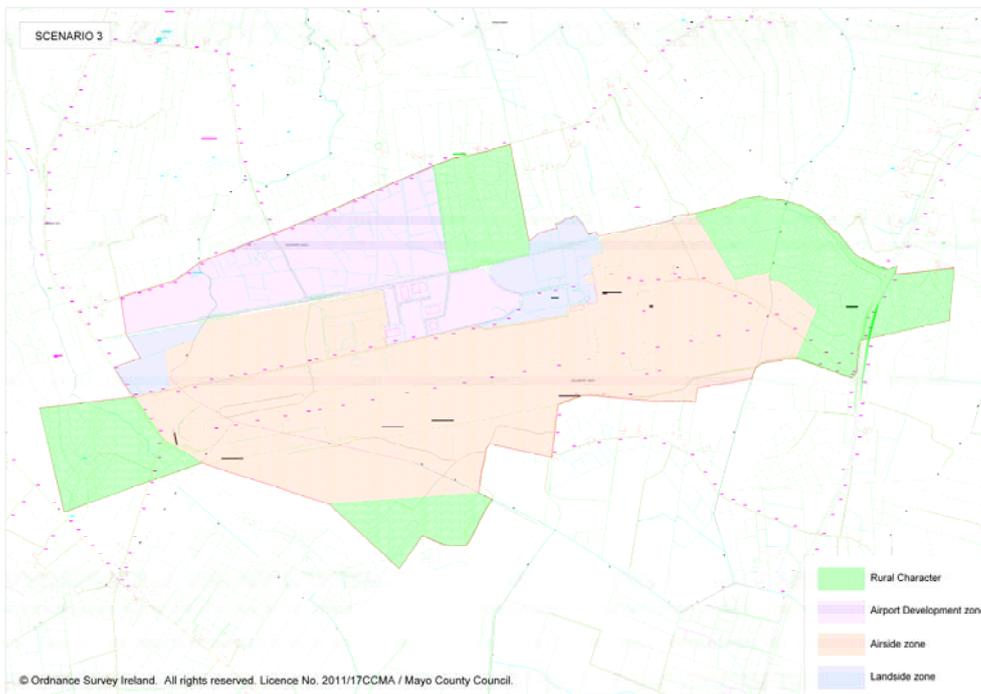
Scenario 2



4.2.3 Alternative Scenario 3

Scenario 3 expands the existing uses around the airport campus, but provides a larger plan area to encompass the Airport Development Zone to the North of the regional road. The airport uses can expand naturally based on the existing situation and the requirement to separate the passenger aircraft and freight is also facilitated by this scenario.

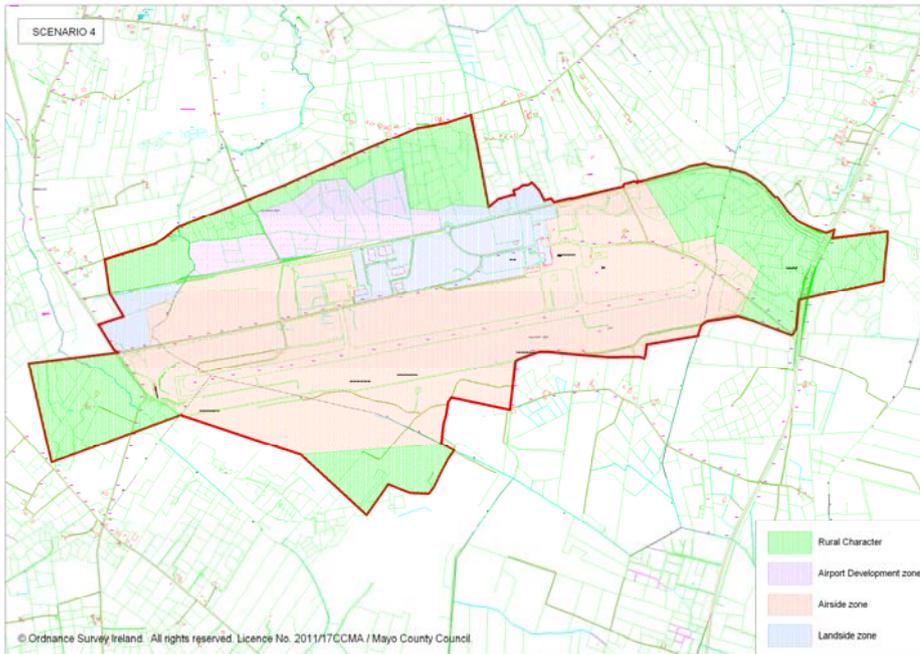
Scenario 3



#### 4.2.4 Alternative Scenario 4

Scenario 4 locates all the Airport Development Zone to the North of the Regional Road separating it from the airport related development. Allowing the airport to further development without any incompatibility of land uses.

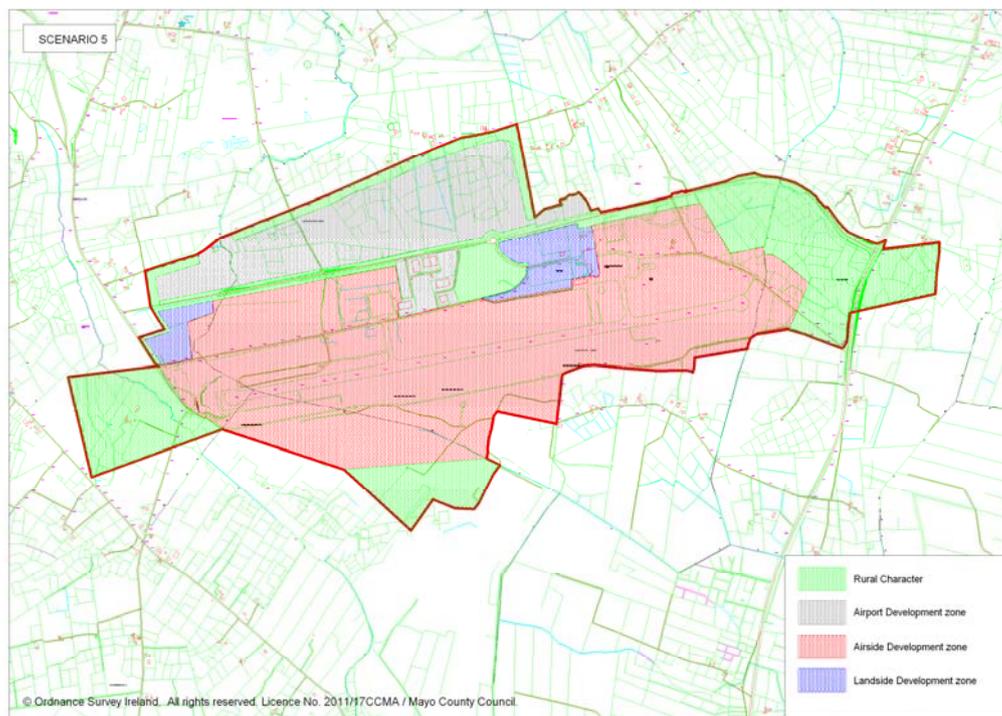
Scenario 4



#### 4.2.5 Alternative Scenario 5

Scenario 5 zones all lands to the North of the regional road as Airport Development zone. This facilitates the most varied use for the area, by not restricting the location of development, but allows for a methodological approach to determine the most appropriate locations for any development within the zoning objectives.

Scenario 5



### 4.3 Evaluation of Alternative Scenarios

#### 4.3.1 Evaluation of Alternative Scenario 1

##### **Biodiversity, Flora and Fauna**

Scenario 1 involves expansion of the existing situation with all zones expanding naturally as development occurs. The northern plan boundary would be the existing regional road. The amount of land zoned to the south of the existing runway for airside development would also be increased. This scenario would result in increased land take in all directions from the current boundary, with no strategic policy in place to guide development to those areas most suitable for the various zones of development and the protection of the most vulnerable/important habitats within the plan area. Current county development plan policies would apply.

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

This scenario allows for a modest expansion of the business park development, which would increase the working population of the Area. The Public Safety Zones and Noise Contour mapping would limit the uses that could be developed in the Airport Development Zone. New infrastructure would be required around the airside development zone for access to the hangerage and maintenance area, which would underutilise the exiting infrastructure of the area and create unnecessary expense to accommodate development.

##### **Soils and Geology**

In terms of the impact on soils and geology, scenarios 1 & 2 are similar, with expansion being constrained to the south of the regional road. The slopes in these areas are not steep and this approach would not be detrimental provided that proper geotechnical assessments are carried out on the blanket peat to ensure that measures are put in place to prevent landslides from occurring.

##### **Water**

This approach is essentially described as natural expansion of all zones as / when development occurs. Development in a piecemeal fashion, *in lieu* of a plan with defined and agreed guidelines would potentially be very harmful to the water quality both in the north and south of the site, with poor and good / moderate water statuses respectively. While zones will remain in existing locations, the expansion of any of the described zones – landside, airside, airport development and rural development zones – may impact negatively on the water quality and its ecological elements if no proper guidelines, encompassing specific WRBD objectives and programme of measures, are developed.

##### **Air Quality and Climate Factors**

###### **Air Quality**

The future development of the area in a piecemeal fashion could pose a threat to air quality in localised scenarios. Expansion of the various zones may impact negatively on air quality if proper guidelines are not taken into consideration. The local road network design and car park access routes would be an important aspect to consider regarding air quality so as to reduce any periods of congestion and associated emission conditions. In addition to it would be important to ensure the emissions are not concentrated at any particular time. The location of hangers and air craft maintenance facilities to the south of the plan area is positive as fuel storage beside buildings etc could present a risk of fugitive VOC release and a fire hazard.

###### **Noise**

The future development of the area in a piecemeal fashion could create localised noise pollution problems. Expansion of the various zones may impact negatively on noise levels if proper guidelines are not taken in to consideration. The local road network design and car park access routes would be an important aspect to consider regarding noise levels. In addition to it would be important to ensure that sensitive receptor buildings such as hotels etc are located in areas that would not be exposed to high noise levels.

#### Climate Factors

The increase in development will result in an increase in Green House Gases directly from the development itself and indirectly from increased traffic movements; both of which can be mitigated against to contribute to a decrease in green house gas with the possibility of developing an area as a carbon neutral location. Indirectly, if more development occurs and the working population increases sufficiently, it may become more suitable to provide alternative sustainable transportation options for those working, using or visiting the area.

#### Flooding

There are no reordered instances of flooding occurring at locations under this scenario. Any new development will require mitigation measures to ensure that development does not cause any flooding at alternative locations near the plan area. There may not be sufficient capacity under this scenario to alleviate any existing problems from the existing structures and infrastructure. Therefore this scenario will not increase any flooding potential but will not resolve any existing issues that may occur within the Plan area.

#### Material Assets

##### Roads and Transportation Infrastructure

This scenario would involve the creation of new road network to service development to the southern end of the runway thus underutilising the existing road network for the area this may limit further expansion of the airport in future as it may encroach on future runway extensions. It would also direct traffic away from using the National Secondary Route and using the local road network, which would not have the capacity for such traffic movements.

#### Energy

The possibility of utilising renewable energy technology to reduce energy consumption would be limited under this scenario and there would be a conflict with certain types of projects with aircraft safety under the public safety zones and safe guarding maps.

#### Waste Water

This scenario would require new infrastructure for development to the Southern end of the LAP area. New development will only occur if there is sufficient capacity in the system to adequately cater for such development.

#### Drinking Water

This proposal involves the expansion of the existing airside zone and inclusion of rural character zones at east and west of this land use type, which also has potential for navigational aids. The airport development zone, still located north of the development will be expanded to the west, while the landside development has increased in size in a northerly direction.

This development, if chosen, will see construction work and excavations in the northern sector of the IWAK and surrounding lands.

Without being familiar with the development plan and proposed drinking water abstraction rate required for the development, it is difficult to predict the impact on the water supply. If, for example, a study finds that an aquifer is being drained at a rate faster than it can be replenished, restrictions may be imposed. Such conservation of groundwater resources would not be possible without first having a groundwater study to identify the problem.

Further, a groundwater study can also be used to predict and possibly even correct other problems related to groundwater withdrawal. Surface land elevations can even be lowered by groundwater depletion, a process known as land subsidence. This can be extremely damaging to buildings located on the surface, and cost millions to rectify.

#### Waste

The expansion of the existing development will generate waste arising during construction. The necessary infrastructure for construction and demolition waste is not in place at present. Infrastructure to cater for this waste should be provided in advance of construction work to ensure that projects are not held up due to lack of appropriate authorised waste facilities. The works may generate waste peat, currently there is no treatment facility for this in east Mayo. There is some uncertainty as to the quantity and type of waste arising until the exact nature of the business developments, level of employment and passenger numbers are known. Hazardous waste could arise, or a business using wastes generated on the campus as a resource could be introduced. Authorised waste collectors can manage most waste arising from the business park and International catering waste is classified as category 1 animal by product and must be managed in accordance with the Department of Agriculture and Food requirements. This scenario allows for natural expansion of the airport, thus due to the adhoc nature of expansion; the necessary waste infrastructure may not be in place in time to facilitate construction works. It may be possible to reuse some excavated material on site in landscaping works in the proposed amenity areas. Comprehensive construction and operational waste management plans will be required for each development.

#### Cultural Heritage

The Archaeological heritage and sites identified in the Record of Monuments and Places will be impacted upon. The integrity of the archaeological sites in their settings will be impacted upon.

RPM MA072-119           Megalithic Structure

RPM MA073-034       Mound

Will be impacted upon.

Planning Applications would continue to be assessed on an individual basis and would be subject to the relevant statutory requirements and guidelines in place for the protection of architectural heritage.

#### Landscape

Development under this scenario would occur at the most elevated areas of the LAP, thus increasing the negative impact on the landscape character of the area. The prominent ridgelines at this located cannot easily absorb development and thus reducing the possibility of further screening existing development on the landscape. Also the linear nature would extend development along the ridge line. Therefore scenario would have a negative impact on the landscape character of the Area.

#### 4.3.2 Evaluation of Alternative Scenario 2

##### Biodiversity, Flora and Fauna

See Scenario 1 above

##### Population and Human Health

This scenario would be similar to Scenario 1 above in terms of impact on population due to the modest expansion of the airport. Restrictions in relation to the possible uses within the airport development zone due to the Public Safety Zones and Safe Guarding maps would restrict the economic potential of the airport therefore reducing the working population.

##### Soils and Geology

In terms of the impact on soils and geology, scenarios 1 & 2 are similar, with expansion being constrained to the south of the regional road. The slopes in these areas are not steep and this approach would not be detrimental provided that proper geotechnical assessments are carried out on the blanket peat to ensure that measures are put in place to prevent landslides from occurring.

##### Water

Scenario 2 describes a significant change to the current zoning of the IWAK, with the relocation of the airport terminal and access and the airport development zone expanding to the east and

west. It also describes an expansion of the current rural character of the site. Any development in this area can potentially impact on the freshwater and ecological elements and emphasis must be placed on the restoration of the poor and moderate status water bodies, while the presently good status must be protected from any possible deterioration.

### **Air Quality and Climate Factors**

#### Air Quality

The relocation of the airport terminal and expansion of the business park to the east could potentially impact on the air quality depending on technologies utilised at the redevelopment of the Business Park and development of the new terminal. Emphasis should be placed on increasing the utilisation of energy efficient and renewable technologies, car park design, road networks to maintain the good status of ambient air quality in this region.

#### Noise

The relocation of the airport terminal and expansion of the business park to the east could potentially impact on the noise levels depending on technologies utilised at the redevelopment of the Business Park and development of the new terminal. Emphasis should be placed on car park design, road networks and public transport to ensure that noise levels do not give rise to nuisance in this region.

#### Climate Factors

The increase in development will result in an increase in Green House Gases directly from the development itself and indirectly from increased traffic movements, both of which can be mitigated against to contribute to a decrease in green house gas with the possibility of developing an area as a carbon neutral location. Indirectly, if more development occurs and the working population increases sufficiently, it may become more suitable to provide alternative sustainable transportation options for those working, using or visiting the area.

#### Flooding

Under this scenario the LAP area would be redeveloped, giving an opportunity for management of surface water run-off which would be properly mitigated against and thus reduce the possibility of surface water flooding in areas adjoining the airport complex.

### **Material Assets**

#### Roads and Transportation Infrastructure

This scenario allows for the use of the existing road network to the area and would offer the opportunity of improving the internal circulation and traffic movements within the airport campus. Moving the terminal to an alternative location may encourage traffic to use the local road network instead of the National Network, but adequate signage and layout could mitigate against this occurring.

#### Energy

Similar to scenario 1 above, the possibility of utilising renewable energy technology to reduce energy consumption would be limited under this scenario and there would be a conflict with certain types of projects with aircraft safety under the public safety zones and safe guarding maps.

#### Waste Water

Similar to all scenarios, the continued development of the LAP would require adequate sewerage treatment capacity and therefore development will not occur unless there is adequate treatment. The scenario can give an accurate prediction as to the requirement for future waster water treatment for the LAP.

#### Drinking Water

This proposal includes the expansion of the airside zone in a southerly direction, while rural character zone similar to Scenario 1 are proposed. The airside development zone will be located

in a more easterly direction, with the existing landside zone; including access to the airport will relocate to the west.

The key question is the extent and scope of the construction works during the development phase(s) and the volume and nature of all effluents arising.

One possibility is that more control can be enforced on lands within a boundary than on privately-owned lands or commonage, as long as all measures employed to improve / protect / enhance water bodies are undertaken with the best available technology necessary to achieve good water status by 2015.

#### Waste

The expansion of the existing development will generate waste arising during construction. The necessary infrastructure for construction and demolition waste is not in place at present. Infrastructure to cater for this waste should be provided in advance of construction work to ensure that projects are not held up due to lack of appropriate authorised waste facilities. The works may generate waste peat, currently there is no treatment facility for this in east Mayo. There is some uncertainty as to the quantity and type of waste arising until the exact nature of the business developments, level of employment and passenger numbers are known. Hazardous waste could arise, or a business using wastes generated on the campus as a resource could be introduced. Authorised waste collectors can manage most waste arising from the business park and International catering waste is classified as category 1 animal by product and must be managed in accordance with the Department of Agriculture and Food requirements. It may be possible to reuse some excavated material on site in landscaping works in the proposed amenity areas. Comprehensive construction and operational waste management plans will be required for each development.

#### Cultural Heritage

The Archaeological heritage and sites identified in the Record of Monuments and Places will be impacted upon. The integrity of the archaeological sites in their settings will be impacted upon.

RPM MA072-119           Megalithic Structure

RPM MA073-034       Mound

Will be impacted upon.

Planning Applications would continue to be assessed on an individual basis and would be subject to the relevant statutory requirements and guidelines in place for the protection of architectural heritage.

#### Landscape

Under this scenario, all development would occur along a visually prominent ridgeline with little opportunity to screen development on the landscape. This would be considered to have a negative impact on the landscape character of the area and would be considered difficult to mitigate against.

### 4.3.3 Evaluation of Alternative Scenario 3

#### Biodiversity, Flora and Fauna

Without detailed habitat mapping of SEA study area it is difficult to say what the impact of the various scenarios on biodiversity, flora and fauna will be. However any proposal that minimises land take and associated loss of habitats would be preferred. It is therefore important to ensure that land take is minimised through careful integrated planning. Due to the raised nature of this site relative to the surrounding land, it is imperative that high quality landscape proposals are developed for the interface area between the airport and the surrounding lands that respect the natural biodiversity and character of the surrounding landscape.

In relation to biodiversity the objective should be to ensure that biodiversity is conserved and enhanced, insofar as consistent with the safe and efficient operation of the airport, by ensuring

that land take is minimised and that impacts on habitats and species are mitigated to ensure that there is no net loss of biodiversity. Development of the LAP lands must also ensure that there is no resulting deterioration of downstream watercourses or associated wetland habitats, including designated sites from increased and/or polluted runoff.

It is important that a strategic approach is taken to biodiversity and landscape management within the LAP area. Detailed habitat mapping is necessary to determine the habitats and species present, which should take into account seasonal patterns. When this information has been obtained more informed decisions relating to the zonings can be taken. This information can be used to inform the preparation and implementation of a detailed landscape and habitat framework for the site.

### **Population and Human Health**

The next three scenarios will have similar details interactions to population and human health. In relation to population, as the airport develops there will be a significant increase in the working and visiting population of the airport. But as the airport becomes an economic driver for the region, the LAP will show an improvement in the lifestyle of the population in the catchment area. Shorter travel times to work; a vibrant working environment and a better quality of life for all associated with the Airport.

The larger Plan area will ensure that development will not interfere with aircraft safety and incompatibility of land uses, restricted by the public Safety Zones. The area will offer more employment opportunities.

Scenario 3 indicates that the airport development zone can expand to the east of the existing development, but could be restricted in terms uses due to the Public Safety Zone.

### **Soils and Geology**

These scenarios involve the expansion of the Airport Development Zone into the area north of the regional road. These scenarios represent the greatest development in an area where the slopes are steeper than the area to the south of the regional road. However, this approach again would not be detrimental provided that proper geotechnical assessments are carried out on the blanket peat to ensure that measures are put in place to prevent landslides from occurring.

### **Water**

This scenario essentially illustrates expansion of the existing site and particularly the development of the airport development zone north of the regional road. Again, the term 'expand naturally' indicates the absence of a series of guidelines or a definitive plan.

The streams to the north of this site are within a water body presently described as of poor status and hence must be improved to good status by 2021; there are no alternatives. Also, since this water body contains first and second order tributaries of the Moy, a designated Salmonid river, there is further emphasis on restoration for the purpose of the water's ecological elements, not only fish but macro invertebrates, phytobenthos, phytoplankton (including bacilliarophytes) and macrophytes.

### **Air Quality and Climate Factors**

#### **Air Quality**

The main aspect of this scenario is the development of the airport development zone north of the regional road with an amenity zone to the east. The absence of a strategic plan in regard to this scenario could present sustainability issues. In relation to air quality the interaction of building design, energy usage, road network, and traffic movements should be considered.

#### **Noise**

The main aspect of this scenario is the development of the airport zone north of the regional road with an amenity zone to the east. The absence of a strategic plan in regard to this scenario

could lead to localised and intermittent noise nuisances if the impact of the road network, traffic movements and building energy controls are not taken into consideration.

#### Climate Factors

The assessment of scenario 3 will be similar to both scenarios 4 and 5. The LAP area has expanded therefore the demand for energy will be greater. But it also offers the opportunity to provide and implement more energy conservation measures, with building design more flexible due to the topography of the lands to the North of the Regional Road.

#### Flooding

As the developable area increases there are also the scope that flooding as a result of surface water runoff would also increase. But a larger plan area allows for more scope in building and site design to minimise the effects of surface water run-off and can be designed to factor in any existing problems associated with flooding around the airport complex. Therefore with the right mitigation measures, this scenario could improve any existing environmental concerns relating to flooding.

### **Material Assets**

#### Roads and Transportation Infrastructure

The road and transportation infrastructure is in place and there is little addition required to implement the LAP. A larger area gives an opportunity to properly manage traffic onto the national route and to avoid any increase in traffic onto the local road network.

#### Energy

A larger area for development gives an opportunity to provide renewable energy technologies in the LAP area and they can be located so as not to interfere with aircraft safety. The large amount of rural character space may limit the best locations for implementing such technologies and the airport development zone may be the better location dependent on testing of such technologies therefore restricting the location for economic development.

#### Waste Water

Development will only occur if there is sufficient waste water provision, therefore the expansion of the airport development zone will require phasing as outlined LAP.

#### Drinking Water

All zones will be extended to include north of the regional road, with a larger rural character area for expansion and an airport development zone which is separated from the airport by the R376. A larger airport development zone will potentially include a larger population equivalent (PE) and a consequential necessity to a greater demand on the drinking water usage.

#### Waste

A greater plan area implies greater waste arising both during construction and operational phase. The expansion of the existing development will generate waste arising during construction. The necessary infrastructure for construction and demolition waste is not in place at present. Infrastructure to cater for this waste should be provided in advance of construction work to ensure that projects are not held up due to lack of appropriate authorised waste facilities. The works may generate waste peat, currently there is no treatment facility for this in east Mayo. The larger amenity area proposed may enable recovery of a proportion of excavated material on site.

There is some uncertainty as to the quantity and type of waste arising until the exact nature of the business developments, level of employment and passenger numbers are known. Hazardous waste could arise, or a business using wastes generated on the campus as a resource could be introduced. Authorised waste collectors can manage most waste arising from the business park and International catering waste is classified as category 1 animal by product and must be managed in accordance with the Department of Agriculture and Food requirements. It may be possible to reuse some excavated material on site in landscaping works in the proposed amenity

areas. Comprehensive construction and operational waste management plans will be required for each development.

### **Cultural Heritage**

The Archaeological heritage and sites identified in the Record of Monuments and Places will be impacted upon. The integrity of the archaeological sites in their settings will be impacted upon.

RPM MA072-119           Megalithic Structure

RPM MA073-034        Mound

Will be impacted upon.

Planning Applications would continue to be assessed on an individual basis and would be subject to the relevant statutory requirements and guidelines in place for the protection of architectural heritage.

### **Landscape**

The main development opportunity is to the North of the airport campus below the ridgelines. New development can be designed so that it does not have a major impact on the landscape character of the area and could act as a softener to the existing and future development along the ridgeline that would be necessary for the airport development.

The expansion of the business park towards the existing terminal would result in the removal of a small hill that provides a landscaped screen for the terminal building and if developed would result in a negative impact on the landscape character of the area.

#### **4.3.4 Evaluation of Alternative Scenario 4**

##### **Biodiversity, Flora and Fauna**

See Scenario 3 above

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

See Scenario 3 above. The same assessment will apply to this scenario

##### **Soils and Geology**

This scenario is similar to scenarios 3 & 5, although with a higher proportion of Rural Character Zone. As with Scenarios 3 and 5, this approach would not be detrimental provided that proper geotechnical assessments are carried out on the blanket peat to ensure that measures are put in place to prevent landslides from occurring.

##### **Water**

This scenario sees a very significant expansion in the scale and extent of the IWAK development. As with Scenario 3, development of the airport development zone is to the north; into the poor status water body. Pressures on this water body have resulted in it being 'probably at risk' of failing to reach good status by 2015; timescales have been extended to 2021 due to delayed recovery of highly impacted sites in this location.

##### **Air Quality and Climate Factors**

###### **Air Quality**

As in Scenario 3, the main aspect of this scenario is the development of the airport development zone north of the regional road. However the inclusion of a rural character area surrounding the airport development zone to the north will provide greater dispersion/ circulation rates and therefore it should be seen as a positive in relation to air quality

###### **Noise**

As in Scenario 3, the main aspect of this scenario is the development of the airport zone north of the regional road; however it is proposed to include an amenity area surrounding the business park to the north. The noise levels from this development scenario would be as outlined in Scenario 1/2/3 above.

Climate Factors

See Scenario 3 above. The same assessment will apply to this scenario

Flooding

See Scenario 3 above. The same assessment will apply to this scenario

**Material Assets**

Roads and Transportation Infrastructure

See Scenario 3 above. The same assessment will apply to this scenario

Energy

See Scenario 3 above. The same assessment will apply to this scenario

Waste Water

See Scenario 3 above. The same assessment will apply to this scenario

Drinking Water

This would encompass a similar development as Scenario 3, but with more emphasis on rural character and with the entirety of the airport development zone north of the regional road, in addition to a surrounding rural character zone. This way, all airport activities and possible expansion will remain separate from the airport development zone. The development of a Airport development Zone north of the R376 will remain completely separate from further expansions of the airport-related development is a worthwhile consideration. Similar to Scenario 3, the nature and volume of effluents arising and discharging to receiving waters such as the Sonnagh River in the north (a tributary of the River Moy, within the cSAC and itself a Salmonid river) and the tributaries of the Lung River to the south (in addition to the two aforementioned pNHAs) must be quantified and characterised insofar as possible, at all stages of development and operation of the airport development zone and airside and landside zone infrastructural development and operation.

Waste

The expansion of the existing development will generate waste arising during construction. A greater plan area implies greater waste arising both during construction and operational phase. The proposed amenity areas may enable recovery of some excavated material on site in landscaping works. The necessary infrastructure for construction and demolition waste is not in place at present. Infrastructure to cater for this waste should be provided in advance of construction work to ensure that projects are not held up due to lack of appropriate authorised waste facilities. The works may generate waste peat, currently there is no treatment facility for this in east Mayo. Whilst the proposed development to the north of the regional road will to some extent separate business activities from the airport there is some uncertainty as to the quantity and type of waste arising until the exact nature of the business developments, level of employment and passenger numbers are known. Hazardous waste could arise, or a business using wastes generated on the campus could be introduced. Authorised waste collectors can manage most waste arising from the business park and International catering waste is classified as category 1 animal by product and must be managed in accordance with the Department of Agriculture and Food requirements. It may be possible to reuse some excavated material on site in landscaping works in the proposed amenity areas. Comprehensive construction and operational waste management plans will be required for each development.

**Cultural Heritage**

The Archaeological heritage and sites identified in the Record of Monuments and Places will be impacted upon. The integrity of the archaeological sites in their settings will be impacted upon.

RPM MA072-119           Megalithic Structure

RPM MA073-034       Mound

Will be impacted upon.

Planning Applications would continue to be assessed on an individual basis and would be subject to the relevant statutory requirements and guidelines in place for the protection of architectural heritage.

### **Landscape**

Similar assessment to scenario 3, except for the increase in the landside development zone to the west of the existing terminal, which would result in the removal of a small hill that provides for adequate screening of the existing terminal building.

### **4.3.5 Evaluation of Alternative Scenario 5**

#### **Biodiversity, Flora and Fauna**

See Scenario 3 above

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

In relation to population, as the airport develops there will be a significant increase in the working and visiting population of the airport. But as the airport becomes an economic driver for the region, the LAP will show an improvement in the lifestyle of the population in the catchment area. Shorter travel times to work; a vibrant working environment and a better quality of life for all associated with the Airport.

The larger Plan area will ensure that development will not interfere with aircraft safety and incompatibility of land uses, restricted by the public Safety Zones. The area will offer more employment opportunities.

#### **Soils and Geology**

These scenarios involve the expansion of the Airport Development Zone into the area north of the regional road. These scenarios represent the greatest development in an area where the slopes are steeper than the area to the south of the regional road. However, this approach again would not be detrimental provided that proper geotechnical assessments are carried out on the blanket peat to ensure that measures are put in place to prevent landslides from occurring.

#### **Water**

Scenario 5 zones all lands to the north of the regional road as the airport development zone, and allows for a methodical approach to determine the most appropriate locations for any development within the zoning objectives. The adoption of a methodical approach to determine appropriate locations for development indicates that any planning proposals will follow a definite plan and does not suggest naturally expanding zones such as that suggested in Scenario 1; this is a positive proposal.

#### **Air Quality and Climate Factors**

##### **Air Quality**

This scenario zones all lands to the north of the regional road as the airport development zone. As this approach requires an evaluation of lands using an integrated assessment approach this scenario should be seen as the most logical and sustainable manner of encouraging appropriate development in this area.

##### **Noise**

This scenario zones all lands to the north of the regional road as the airport development zone. As this approach requires an evaluation of lands using an integrated assessment approach this scenario should be seen as the most logical and sustainable manner of encouraging appropriate development in this area.

##### **Climate Factors**

The LAP area has expanded therefore the demand for energy will be greater. But it also offers the opportunity to provide and implement more energy conservation measures, with building design more flexible due to the topography of the lands to the North of the Regional Road.

#### Flooding

As the developable area increases there are also the scope that flooding as a result of surface water runoff would also increase. But a larger plan area allows for more scope in building and site design to minimise the effects of surface water run-off and can be designed to factor in any existing problems associated with flooding around the airport complex. Therefore with the right mitigation measures, this scenario could improve any existing environmental concerns relating to flooding.

#### Material Assets

##### Roads and Transportation Infrastructure

The road and transportation infrastructure is in place and there is little addition required to implement the LAP. A larger area gives an opportunity to properly manage traffic onto the national route and to avoid any increase in traffic onto the local road network.

##### Energy

A larger area for development gives an opportunity to provide renewable energy technologies in the LAP area and they can be located so as not to interfere with aircraft safety. Designating the majority of the area for Airport Development, give scope to develop energy efficient technologies within the restriction of a zoning objective. This offers a more strategic approach for development.

##### Waste Water

Development will only occur if there is sufficient waste water provision, therefore the expansion of the airport development zone will require phasing as outlined LAP.

##### Drinking Water

Differing subtly from Scenario 4, this proposal will see the expansion of the current IWAK and vicinity in all directions, with the Airport Development Zone *only* north of the regional road, but with no allowance for Rural Character zones north of the regional road. Therefore, the definition of Rural Character in this context is vital in differentiating between scenarios 4 and 5. While Rural Character can be defined as 'preserved land' for future expansion, their importance is negotiable and very much dependant on actual land uses assigned.

##### Waste

The expansion of the existing development will generate waste arising during construction. A greater plan area implies greater waste arising both during construction and operational phase. The proposed amenity areas may enable recovery of some excavated material on site in landscaping works. The necessary infrastructure for construction and demolition waste is not in-situ at present. Infrastructure to cater for this waste should be provided in advance of construction work to ensure that projects are not held up due to lack of appropriate authorised waste facilities. The works may generate waste peat, currently there is no treatment facility for this in east Mayo. There is some uncertainty as to the quantity and type of waste arising until the exact nature of the business developments, level of employment and passenger numbers are known. Hazardous waste could arise, or a business using wastes generated on the campus could be introduced. Authorised waste collectors can manage most waste arising from the business park and International catering waste is classified as category 1 animal by product and must be managed in accordance with the Department of Agriculture and Food requirements. It may be possible to reuse some excavated material on site in landscaping works in the proposed amenity areas. Comprehensive construction and operational waste management plans will be required for each development.

#### Cultural Heritage

The Archaeological heritage and sites identified in the Record of Monuments and Places will be impacted upon. The integrity of the archaeological sites in their settings will be impacted upon.

RPM MA072-119           Megalithic Structure

RPM MA073-034       Mound

Will be impacted upon.

Planning Applications would continue to be assessed on an individual basis and would be subject to the relevant statutory requirements and guidelines in place for the protection of architectural heritage.

#### **Landscape**

This scenario give more flexibility in terms of siting and design to best develop the airport development zone so that it can encompass all aspects of best practice in order to develop that lands to ensure minimal impact on the landscape character of the area. It also gives scope in utilising the topography to act as a softener to future development necessary for the airport to develop to its full potential. It also ensures that the hill which screens the airport terminal is maintained. This is a distinctive feature which could be landscaped to give a 'sense of arrival' at the Airport.

#### **4.3.6 Preferred Scenario**

The preferred scenario was determined by assessing each alternative against the Environmental Protection Objectives derived as part of the SEA Process.

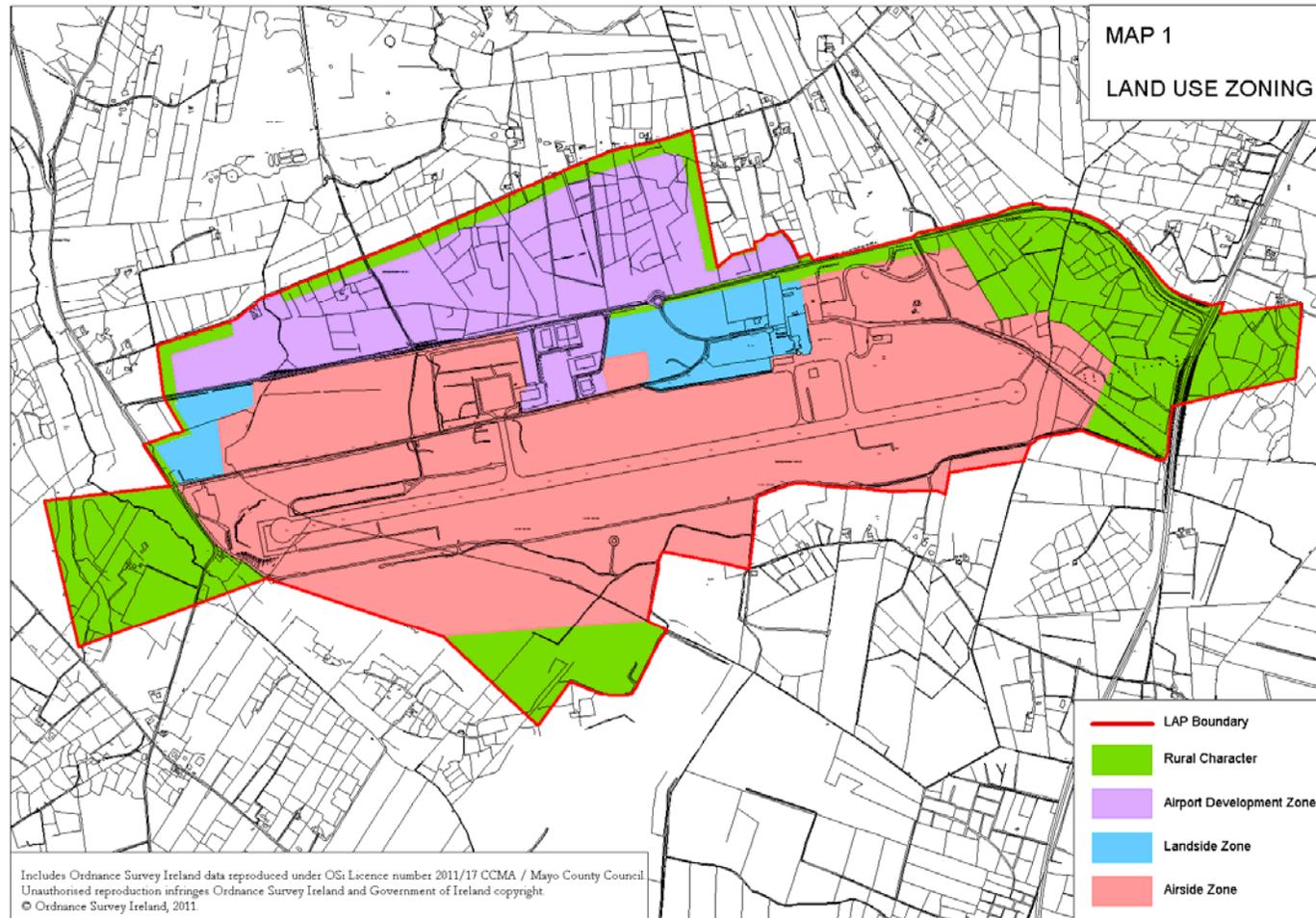
The Assessment of Scenarios 1 and 2 indicates 'Probable Conflict with the status of the EPOs – unlikely to be mitigated'. Scenario 3 is limited in terms of improvement of most of the EPOs. Scenario 4 and 5 emerge as the most environmentally sustainable of the 5 alternatives as regards all EPOs'. However, Scenario 5 emerges as the most sustainable overall. All though the developable area in Scenario 5 is greater than Scenario 4, it offers more scope to locate development in areas with less impact on the environment. It also offers a greater area for the development of energy, waste, surface water, conservation initiatives and renewable energy projects. Scenario 5 scored highest in the 'Likely to improve the status of the EPO' category as it offers more scope for the development potential of the LAP area.

#### **4.3.7 The Adopted Local Area Plan**

Alternative Scenario 5 was chosen to be developed for the draft Local Area Plan by the plan making team. The Land Use Zoning Map contained in the draft LAP which was placed on public display corresponded closely to this scenario.

An alteration was made by the Elected Members to the Land Use Zoning Map contained in the draft LAP. Consequently the Land Use Zoning Map that is contained in the adopted LAP corresponds more closely to Alternative Scenario 4. This alteration was assessed in Addendum I to the Environmental Report, from which mitigation was developed and if implemented the alteration to the Land Use Zoning Map cannot be considered to have an environmental consequence.

Land Use Zoning Map as in the adopted LAP



**4.4 Mitigation**

Mitigation measures which have been integrated into the draft LAP are identified in Section 8 of the Environmental Report. The mitigation measures will ensure that the implementation of the LAP will not significantly affect the environmental quality of the Plan area.

**4.5 Reasons for choosing the LAP, as adopted, in light of the other reasonable alternatives dealt with**

The Local Area Plan that has emerged from the plan preparation process – including the land use zoning which is included in the adopted LAP has the closest correlation to Alternative Scenario 4. The evaluation of the LAP contained in the Environmental Report is outlined above and is accompanied in the Environmental Report by an evaluation of the policies and objectives of the LAP.

The Plan was chosen to be adopted for the Local Area Plan by the Elected Members having regard to both the environmental effects and the Planning effects.

## **Section 5 Monitoring Measures**

### **5.1 Introduction**

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored. This environmental report puts forward proposals for monitoring the implementation of the LAP.

Monitoring enables, at an early stage, the identification of unforeseen adverse effects and the undertaking of appropriate remedial action. In addition to this, monitoring can also play an important role in assessing whether the LAP is achieving its environmental objectives and targets – measures which the LAP can help work towards – whether these need to be re-examined and whether the proposed mitigation measures have been implemented. The monitoring programme will consist of assessment of the relevant indicators and targets against the data relating to each environmental component.

### **5.2 Indicators and Targets**

Monitoring is based around indicators which were chosen earlier in the SEA process for the purpose of measuring changes to the various environmental components. They allow quantitative measures of trends and progress over time relating to the EPOs used in the evaluation process. Focus will be given to indicators which are relevant to the likely significant environmental effects of implementing the LAP and existing monitoring arrangements will be used in order to monitor the selected indicators. Each indicator to be monitored is accompanied by targets which are derived from relevant legislation.

The Table below shows the indicators and targets which have been selected with regard to the monitoring of the LAP.

### **5.3 Sources**

Measurements for indicators should come from existing monitoring sources and no new monitoring should take place. Existing monitoring sources exist for the indicators and include those maintained by Mayo County Council and the relevant authorities e.g. the Environmental Protection Agency, the National Parks and Wildlife Service and the Central Statistics Office. The Development Management Process will provide passive monitoring of various indicators and targets on an application by application basis.

### **5.4 Reporting and Monitoring**

Mayo County Council will be responsible for collating existing relevant monitored data, the preparation of a monitoring report, and recommend appropriate corrective action. It is recommended that a multidisciplinary team of suitably qualified persons be established to oversee the monitoring process. The Team will determine the frequency of the monitoring and input into the preparation of the Monitoring Report.

<b>Monitoring Table</b>			
<b>Environmental Component</b>	<b>Targets</b>	<b>Indicators</b>	<b>Source</b>
<b>Biodiversity, Flora &amp; Fauna</b>	<p>Target B1i: No loss of protected habitats or species.</p> <p>Target B1ii: No loss or degradation of locally rare/distinctive habitats/species.</p> <p>Target B1iii No loss or fragmentation of ecological corridors</p>	<p>Indicator B1i Number of sites for Nature Conservation to be adversely affected by the implementation of the LAP.</p> <p>Indicator B1ii: Changes in population and range of protected species.</p> <p>Indicator B1iii: Number of sites containing locally rare/distinctive species/habitats to be adversely affected by the implementation of the LAP.</p> <p>Indicator B1 iv: Percentage loss of ecological connectivity between areas of local biodiversity as a result of implementation of the LAP.</p>	<p><b>Corine Mapping</b></p> <p><b>NPWS Records;</b></p> <p><b>Planning Register</b></p>
	<p>Target B2i: No loss of protected habitats or species.</p> <p>Target B2ii: No loss or degradation of locally rare/distinctive habitats/species.</p> <p>Target B2iii No loss or fragmentation of ecological corridors</p>	<p>Indicator B2i Number of sites for Nature Conservation to be adversely affected by the implementation of the LAP.</p> <p>Indicator B2ii: Changes in population and range of protected species.</p> <p>Indicator B2iii: Number of sites containing locally rare/distinctive species/habitats to be adversely affected by the implementation of the LAP.</p> <p>Indicator B2 iv: Percentage loss of ecological connectivity between areas of local biodiversity as a result of implementation of the LAP.</p>	<p><b>Corine Mapping</b></p> <p><b>NPWS Records</b></p> <p><b>Planning Register</b></p>
<b>Population and Human Health</b>	<p>HP1i: provide a good quality of recreation and green space within the working environment.</p> <p>HP1ii: reduction in commuting distance within the catchment area.</p> <p>Target HP1iii: increase of sustainable transport options including public transport, cycling and walking.</p>	<p>Indicator HP1i: that all development has sufficient recreation and open space for the working and visiting population to the area.</p> <p>Indicator HP1ii: reduction in the percentage of persons distance to work that is greater than the distance to the airport from the Census data</p>	<p><b>CSO</b></p> <p><b>Planning Register</b></p> <p><b>Mayo County Council</b></p>

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		Indicator HPiii: promotion of cycleways and walkways for internal circulation throughout the Plan area and any increase in use of public transport or car sharing schemes for employees within the area.	
	Target HP2i: To ensure that all development complies with the land use requirements of the public safety zones, safe guarding maps and noise contour maps	Indicator HP2i: the avoidance of incompatible land uses in the area around the airport.	<b>Mayo County Council</b>  <b>Planning Register</b>  <b>Health and Safety Authority (HSA)</b>

<b>Soils and Geology</b>	Target SG1: No occurrence of landslides	Indicator SG1: Steepness of slopes, moisture content of peat, depth of peat, nature of layer below peat	<b>Geological Survey of Ireland (GSA)</b>  <b>Mayo County Council</b>  <b>Planning Register</b>
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<b>Freshwater</b>	Target W1: No deterioration of surface waters of good and high status	Indicator W1: Quality elements for ecological status (biological, hydro morphological, chemical and physic-chemical elements)	<b>WRBD Management Plans</b>  <b>Mayo County Council</b>  <b>EPA</b>  <b>NPWS</b>  <b>GSI</b>
	Target W2: Achievement of at least good status by 2015, or by 2021 where this is not technically feasible, not environmentally sustainable and / or when restoration costs are disproportionately expensive	Indicator W2: Quality elements for ecological status (biological, hydro morphological, chemical and physic-chemical elements)	<b>WRBD Management Plans</b>  <b>Mayo County Council</b>  <b>EPA</b>  <b>NPWS</b>  <b>GSI</b>

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	Target W3: No emissions, discharges or losses of priority substances to surface waters	Indicator W3: Chemical and physic-chemical elements of water bodies, in particular, specific pollutants	<b>WRBD Management Plans</b>  <b>Mayo County Council</b>  <b>EPA</b>  <b>NPWS</b>  <b>GSI</b>
	Target W4: No exceedance of specific water quality standards and no deviation from environmental quality objectives established to protect natural habitats and species	Indicator W4: Quality elements for ecological status (biological, hydro morphological, chemical and physic-chemical elements)	<b>WRBD Management Plans</b>  <b>Mayo County Council</b>  <b>EPA</b>  <b>NPWS</b>  <b>GSI</b>

<b>Air Quality</b>	<p>Target AR1i: Ensure monitoring results are maintained within the appropriate emission limit values.</p> <p>Target AR1ii: An increase in the percentage of the people travelling to the airport by public transport.</p> <p>Target AR1iii: A decrease in the distance travelled to work/airport by users of IWAK. A reduction in car dependency will generate a reduction in car based emissions - increase coach transport, lobby for rail connection.</p> <p>Target AR1iv: Increase the number of energy efficient buildings and Co2 neutral developments in the area. Reduce waste of energy, and maximise use of renewable energy sources.</p>	<p>Indicator AR1i: Air monitoring data to indicate compliance with appropriate policies and legislative requirements.</p> <p>Indicator AR1ii: Percentage of workers/airport users travelling to the airport by public transport or non mechanical means.</p> <p>Indicator AR1iii; Average distance travelled to work/airport by the users of IWAK.</p> <p>Indicator AR1iv: No of BER certificates issued for Area.</p> <p>Indicator AR1v: No of Co2 neutral developments in the Area</p>	<b>EPA</b>  <b>Planning Register</b>
<b>Noise</b>	Target N1: Minimise the number of incompatible developments within the various noise contour categories	Indicator N1: Number of developments located with the noise contour categories	<b>Planning Register</b>  <b>Mayo County Council</b>

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	Target N2: Reduce the percentages of vehicular traffic at IWAK	Indicator N2: Number of traffic movements at IWAK	<b>Mayo County Council</b>  <b>NRA</b>  <b>Planning Process</b>
<b>Climate</b>	Target C1i: Increase the number of energy efficient buildings and Co2 neutral developments in the area. Reduce waste of energy, and maximise use of renewable energy sources Target C1ii: To implement the EU Emissions Trading Directive and Irelands National Allocation Plan for Emission Trading to ensure that the Area becomes Carbon Neutral	Indicator C1i: No of BER certificates issued for Area.  Indicator C1ii: No of Co2 neutral developments in the Area  Indicator C1iii: to promote awareness of energy efficient technologies to off set emissions from increased aircraft movements to achieve a carbon neutral area.	<b>EPA</b>  <b>SEAI</b>  <b>Mayo Energy Agency</b>  <b>Planning Register</b>
<b>Flooding</b>	Target F1: Minimise developments granted permission on lands which pose – or likely to pose in the future- a significant flood risk	Indicator: F1: Number of developments granted permission on land which pose – or are likely to pose in the future – a significant flood risk.	<b>OPW</b>  <b>Mayo County Council</b>  <b>Planning Register</b>

<b>Roads &amp; Transport Infrastructure</b>	Target R1i: to ensure that all traffic to the area uses the national road network Target R1ii: to reduce traffic using the local roads in the area to access the Plan area.	Indicator R1i: increase in traffic movements too and from the area at the junction with the national route. Indicator R1ii: reduction in traffic movements to and from the area via the local road network..	<b>Mayo County Council.</b>  <b>NRA</b>  <b>Planning Register</b>  <b>CSO</b>
	Target R2: that all development complies with safety requirements and uses are compatible with location at airports	Indicator AR2: number of development projects permitted with the safety zones around the airport	<b>Mayo County Council</b>  <b>Planning Register</b>  <b>Health and Safety Authority (HSA)</b>
<b>Energy</b>	Target E1: to reduce energy consumption from non sustainable sources to a minimum by the adoption and use of renewable energy sources.	Indicator E1: increase in renewable energy projects Indicator E1ii: promotion of energy efficacy in the Plan area	<b>EPA</b>  <b>SEAI</b>  <b>Mayo Energy Agency</b>  <b>Planning Register</b>

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<b>Waste Water</b>	<p>Target WW1i: to upgrade the existing waste water treatment infrastructure to provide increased capacity for the short term development</p> <p>Target C1ii: to provide new waste water treatment infrastructure for the estimated future development of the area.</p>	<p>Indicator WW1i:upgrade of WWTP from 700 PE to 1400PE capacity</p> <p>Indicator WW1ii: provide now WWTP for 5000 PE capacity</p>	<p><b>Mayo County Council</b></p> <p><b>EPA</b></p> <p><b>Appropriate Water Services Authority</b></p> <p><b>Planning Register</b></p>
<b>Drinking Water</b>	<p>Target DW1i: no deterioration of the status of waters and restoration to good status of waters currently at moderate, poor or bad status</p> <p>Target DW1ii: comply with the Drinking Water Regulations, 2007</p> <p>Target DW1iii: progressively reduce chemical pollution in waters</p> <p>Target DW1iv: prevent deterioration of and limit pollution inputs to surface water and ground water.</p>	<p>Indicator: DW1i: trophic status and faecal coliform count per 100ml of groundwater</p> <p>Indicator DW1ii: drinking water annual report (EPA)</p> <p>Indicator DW1iii: interim water status report in 2011</p> <p>Indicator DW1iv: Long Term water status report in 2015</p>	<p><b>Mayo County Council</b></p> <p><b>EPA</b></p> <p><b>Appropriate Water Services Authority</b></p> <p><b>Planning Register</b></p> <p><b>Relevant Water Services Authority</b></p> <p><b>EPA</b></p>
<b>Waste Management</b>	<p>Target WM1i: 48%recycled 33%energy recovery and 19% landfilled. Attitude change.</p> <p>Target WM1ii: All Waste activity is regulated</p> <p>Target WM1iii: Diversion of bio-waste from landfill and reduction in landfill emissions.</p> <p>Target WM1iv: All waste activity is regulated.</p>	<p>Indicator WM1i: Reduced tonnage of waste collected with increased number of customers</p> <p>Indicator WM1ii: Reduction in enforcement actions required</p> <p>Indicator WM1iii: Indicator: Increase in the percentage of customers receiving a refuse collection service and decrease in proportion of waste arising being landfilled and increase in recovery and recycling tonnages</p>	<p><b>Mayo County Council</b></p> <p><b>Planning Register</b></p>
<b>Archaeological Heritage</b>	<p>Target CH1: No developments carried out over the lifespan of the Proposed Ireland West Airport (IWAK) Local Area Plan which result in the full or partial loss of the archaeological heritage and especially sites identified in the Record of Monuments and Places, National</p>	<p>Indicator CH1: Number of developments carried over the lifespan of the Proposed Ireland West Airport (IWAK) Local Area Plan which result in the full or partial loss of the archaeological heritage and especially sites identified in the Record of Monuments and Places, National</p>	<p><b>Mayo County Council</b></p> <p><b>The Heritage Service (DoAHG)</b></p> <p><b>Planning Register</b></p>

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	Monuments in the ownership or guardianship of the State and National Monuments that are the subject of Preservation Orders. No developments which result in the full or partial loss of the integrity of the archaeological sites in their setting.	Monuments in the ownership or guardianship of the State and National Monuments that are the subject of Preservation Orders. The integrity of the archaeological sites in their setting can also be impacted upon by new developments	
<b>Architectural Heritage</b>	Target CH2i: No development carried out over the lifespan of the LAP shall result in the full or partial loss of architectural heritage Target CH2ii: No development carried out over the lifespan of the LAP will result in the full or partial loss of heritage bridges of Mayo	Indicator CH2i: The number of developments carried out over the lifespan of the LAP which result in the full or partial loss of architectural heritage. Indicator CH2ii: The number of developments carried out over the lifespan of the LAP which result in the full or partial loss of the heritage bridges of Mayo.	<b>Mayo County Council</b>  <b>The Heritage Service (DoAHG)</b>  <b>Planning Register</b>
<b>Landscape</b>	Target L1i: to minimise the intrusion of new developments on the landscape character of the area. Target L1ii: to minimise the intrusion of exiting development on the landscape character of the area.	Indicator L1i: that all development proposals include measures to minimise any intrusion that the development may have on the landscape character of the area. Indicator L1ii: that all development proposal examine if they can introduce measures to reduce the impact of existing structures on the landscape character.	<b>Mayo County Council</b>  <b>Corine Mapping</b>  <b>Planning Register</b>