



Ireland West Airport Knock Local Area Plan 2012-2018



**Mayo County Council
Comhairle Contae Mhaigh Eo**

(Adopted 8th October 2012)

Table of Contents

Section 1	Introduction	1
1.1	Statutory Context.....	1
1.2	Purpose of the Local Area Plan.....	1
1.3	Plan Area	1
1.4	Public Consultation.....	2
1.5	Plan Format.....	3
1.6	Environmental Assessments	3
1.6.1	Strategic Environmental Assessment (SEA).....	3
1.6.2	Appropriate Assessment (AA)	3
1.6.3	Flood Risk Assessment (FRA)	4
Section 2	Strategic Planning Context and Considerations.....	5
2.1	Policy Context	5
2.2	National and Regional Planning Context.....	5
2.2.1	The National Development Plan 2007 – 2013 (NDP)	5
2.2.2	The National Spatial Strategy 2002 – 2020 (NSS)	5
2.2.3	Regional Planning Guidelines for the West Region 2010-2022.....	7
2.2.4	National Planning Guidelines	7
2.3	County Context	7
2.3.1	Mayo County Development Plan 2008-2014	7
Section 3	Profile of Ireland West Airport Knock	9
3.1	Physical	9
3.2	Historical.....	9
3.3	Ireland West Airport Knock Today.....	9
3.4	Population and Demographic Profile	10
3.5	Transportation.....	13
3.5.1	Road Network.....	13
3.5.2	Public Transport.....	14
3.6	Infrastructure.....	14
3.6.1	Water Supply.....	14
3.6.2	Waste Water.....	14
3.6.3	Surface Water.....	15
3.6.4	Electricity Supply.....	15
3.6.5	Telecommunications	15
3.6.6	Gas	15
3.7	Airport Infrastructure	15
3.7.1	Runways.....	15
3.7.2	Taxiways	16
3.7.3	Aircraft Apron Areas	16
3.7.4	Terminals and Piers.....	16
3.7.5	Hangerage, Maintenance and Aviation Fuel Farm	16
3.7.6	Car Parking.....	16
3.8	Natural and Cultural Heritage.....	17
3.8.1	Natural Heritage	17
3.8.2	Architectural Heritage.....	18

3.8.3	Archaeological Heritage.....	18
3.9	Flooding	19
3.10	Landscape	20
Section 4	Development Strategy for Ireland West Airport Knock	21
4.1	Development Strategy	21
4.2	Land Use Zoning	21
4.2.1	Zoning Methodology.....	21
4.2.2	Land Use Zones and Objectives	22
4.3	Airport Development Zone	23
4.3.1	Introduction.....	23
4.3.2	Land Ownership, Co-operation and Profit Sharing	23
4.3.3	Phasing	23
Section 5	Policies and Objectives	25
5.1	Introduction.....	25
5.2	Strategic Development	25
5.2.1	Policies Strategic Development.....	25
5.2.2	Objectives Strategic Development	25
5.3	Land Use	26
5.3.1	Land Use Policies	26
5.3.2	Land Use Objectives	26
5.4	Sustainability Options	26
5.4.1	Sustainability Policies.....	26
5.4.2	Sustainability Objectives	26
5.5	Transport	27
5.5.1	Transport Policies.....	27
5.5.2	Transport Objectives	27
5.6	Infrastructure Provision (Utilities).....	28
5.6.1	Policies Infrastructure Provision (Utilities)	28
5.6.2	Objectives Infrastructure Provision (Utilities).....	28
5.7	Airport Infrastructure and Operations	30
5.7.1	Airport Infrastructure and Operation Policies	30
5.7.2	Airport Infrastructure and Operation Objectives.....	30
5.8	Heritage, Landscape and Environment.....	30
5.8.1	Heritage, Landscape and Environment Policies	31
5.8.2	Heritage, Landscape and Environment Objectives.....	31
5.9	Economic Activities	32
5.9.1	Economic Policies	33
5.9.2	Economic Objectives	33
Section 6	Development Management Standards and Guidance ..	35
6.1	Introduction.....	35
6.2	Sequential Approach to Development Proposals	35
6.3	Environmental Management Report (EMR).....	35
6.3.1	Contents of the Environmental Management Report.....	35
6.3.2	Ecological Assessment	37
6.3.3	Peat Management and Disposal Plan	38
6.3.4	Geotechnical Assessment	38

6.3.5	Surface Water Management Plan	39
6.3.6	Air, Climate and Energy Factors	39
6.3.7	Operational Waste Management Plan	40
6.3.8	Archaeological Assessment	40
6.4	Site Layout and Building Design Guidelines	41
6.4.1	Objectives of the Design Guidelines	41
6.4.2	Site Design	42
6.4.3	Building Design	43
6.5	Public Lighting	43
6.6	Waste Water Treatment	44
6.7	Drinking Water	44
6.8	Surface Water Drainage	44
6.9	Road Access and Safety	44
6.10	Parking Requirements	45
6.10.1	Car Parking	45
6.10.2	Bicycle Parking	45
6.11	Implementing the LAP – Making it Happen	45
	Land Use Zoning	47
	Public Safety Zones	53
	Aerodrome Safeguarding relating to Obstacle Limitation Surfaces	61
	Noise Contours	67
	Appendix 1 Phasing Methodology	73
	Appendix 2 Peat Management and Disposal Plan Guidance	
	Document	77
	Appendix 3 Guidance Documents	83

List of Figures

Fig 1: Aerial view of Ireland West Airport Knock showing LAP Boundary	2
Fig 2: Ireland West Airport Knock in the context of the Western Region of the NSS	6
Fig 3: Location of Ireland West Airport Knock	9
Fig 4: Ireland West Airport Knock Catchment Area	12
Fig 5: Road Network	13
Fig 6: Map showing Record of Monuments and Places (RMP)	19

List of Tables

Table 1	
Population at State, County, and Catchment Areas between 2002 – 2006	11
Table 2	
The declared distances of the runway	16
Table 3:	
Designated Sites within a 5km radius of LAP study area	17
Table 4	
Record of Monuments and Places (RPM)	18
Table 5:	
Phasing of Development	24
Table 6:	
Land Use Zones and Land Uses Generally Permitted	48

List of Maps

Map 1	Land Use Zoning	51
Map 2	Public Safety Zones	57
Map 3	Public Safety Zones & Land Use Zoning	59
Map 4	Safe Guarding	63
Map 4a	Safe Guarding within LAP Boundary	65
Map 5	Noise Contours	69
Map 6	Noise Contours & Land Use Zoning	71

Section 1 Introduction

1.1 Statutory Context

This Local Area Plan (LAP) has been prepared in accordance with Sections 18 – 20 of the Planning and Development Acts 2000 – 2010. It is the first statutory land use plan that has been made for Ireland West Airport Knock. This plan shall remain in force for a period of 6 years from the date of adoption by Mayo County Council unless it is amended or revoked before this period.

A Local Area Plan is required to be consistent with the policies and objectives of the County Development Plan. Accordingly, this LAP should be read in conjunction with the Mayo County Development Plan 2008 – 2014 which sets out the overall development strategy for the county, including a core strategy. Where any provision of the LAP conflicts with the provisions of the County Development Plan (as varied or a new CDP) the provision of the LAP shall cease to have effect.

1.2 Purpose of the Local Area Plan

Ireland West Airport Knock was officially opened in 1986 as Ireland's fourth international airport. Mayo County Council recognises that Ireland West Airport Knock has the potential to be a key economic driver for the West Region. To support and promote this role objective O/TI-A1 of the Mayo County Development Plan 2008-2014 states that 'It is an objective of the Council to request the Minister of the Environment, Heritage and Local Government to designate the area around Ireland West Airport Knock as a Strategic Development Zone'

In 2008 Mayo County Council, pursuant to the Planning and Development Act 2000 – 2010, applied to the Minister (DoEHLG), to designate the lands in the vicinity of Ireland West Airport Knock as a Strategic Development Zone (SDZ). In response, the DoEHLG suggested adopting a best practice approach similar to other SDZ designations by first preparing a Local Area Plan. It is intended that the Local Area Plan will identify any development issues that may require to be addressed before proceeding with the SDZ designation proposal.

The Ireland West Airport Knock LAP provides a policy framework to guide and manage the future growth and sustainable development of Ireland West Airport Knock over the next 6 years. It sets out objectives for the zoning of land for particular uses within and adjacent to the airport and provides the framework against which planning applications will be assessed. The overall strategy of the LAP is consistent with national, regional and county policy and guidance, including the Council's objective that the area should be designated as a SDZ. In addition, the aspirations and views of the local community as put forward during the public consultation phase of the plan preparation process have been taken into consideration. Although, the statutory period of the LAP is six years, the development strategy set out in this plan will shape the future growth and development of Ireland West Airport Knock beyond the plan period including the timeframe of the proposed SDZ designation.

1.3 Plan Area

The LAP refers to the lands located around Ireland West Airport Knock including all lands within the airport campus (See Fig. 1). The total LAP area extends to approximately 355 Ha (878 Acres). The LAP boundary was drawn up following consideration of the following:

- topography of the area and the potential impact on the landscape
- current infrastructure capacities
- existing land constraints, such as housing and active quarry activity in the vicinity of Ireland West Airport Knock
- the future airside infrastructure requirements of Ireland West Airport Knock
- Regional Planning Guidelines for the West Region 2010-2022 and the Mayo County Development Plan 2008-2014
- the need for sufficient floor space to create critical mass as a regional / sub-regional development centre
- the commercial development potential of the lands in the vicinity of Ireland West Airport Knock based on economic forecasts
- the commitment of landowners in the vicinity of Ireland West Airport Knock
- the need to facilitate Ireland West Airport Knock's potential to become a key economic driver for the region
- environmental considerations resulting from the Strategic Environmental Assessment, Appropriate Assessment and Flood Risk Assessment processes.

Fig 1: Aerial view of Ireland West Airport Knock showing LAP Boundary



1.4 Public Consultation

The Planning and Development Acts 2000 – 2010 requires the planning authority to take whatever steps it considers necessary to consult the public before preparing a Local Area Plan.

Prior to preparing the LAP, the Council held a “Pre-Draft Public Consultation Open Day” in Charlestown on the 29/9/2010. The public were invited to attend the open day to discuss the process involved in the preparation of the Local Area Plan and make their views known. Written submissions from the public were also invited as part of the pre-

draft consultation process. Issues raised during the pre-draft consultation phase related to:

- deficiencies in the public water supply to the area
- concerns about surface water run-off from the runway onto public roads
- concerns relating to increase in traffic movements to the area
- supporting the need to further develop the airport.

This process was integral in shaping the strategy, aims and objectives of the Plan. Accordingly, it should not be viewed merely as a regulatory document, but rather as an expression of the Council's vision, in partnership with the wider public, for the sustainable development of Ireland West Airport Knock over the next 6 years and the steps we need to take to achieve this vision.

1.5 Plan Format

This Plan consists of a single document made up of a written statement and associated maps.

Section 1	Introduction to the LAP
Section 2	Sets out the strategic planning context for the Ireland West Airport Knock LAP
Section 3	Survey and Analysis of the Area
Section 4	Sets out the development strategy for the Ireland West Airport Knock LAP
Section 5	Sets out the policies and objectives of the Ireland West Airport Knock LAP
Section 6	Sets out the development management standards and guidelines

1.6 Environmental Assessments

1.6.1 Strategic Environmental Assessment (SEA)

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

Due to the nature and scale of the LAP, the implementation of which would have a considerable impact on a large area of undeveloped lands, Mayo County Council carried out a full Strategic Environmental Assessment of the LAP. The SEA process has informed the policies and objectives of the LAP. The Environmental Report on the SEA of the Ireland West Airport Knock LAP accompanies this plan.

1.6.2 Appropriate Assessment (AA)

Natura 2000 sites are those identified as sites of Community Importance under the Habitats Directive (Special Areas of Conservation SAC) or classified as Special Protection Areas (SPA) under the Birds Directive 79/409/EEC. Local Area Plans shall also comply with the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, which requires an Appropriate Assessment of any Plan or Project, whether it is within or outside a designated 'Natura 2000' site, which may impact upon the conservation objectives of that site.

There are no Natura 2000 sites located within or adjacent to the LAP area. However there are a number of Natura 2000 sites within 15km of the Plan boundary, most notably the River Moy Complex SAC. As there are a number of minor tributaries and streams within and adjoining the LAP boundary that feed into this SAC a full Appropriate

Assessment was carried out to determine the environmental impact that implementation of the LAP would have on the Natura 2000 sites. The Appropriate Assessment of the Ireland West Airport Knock LAP accompanies this plan.

1.6.3 Flood Risk Assessment (FRA)

‘The Planning System and Flood Risk Management Guidelines 2009’ were issued by the Minister of the Environment, Heritage and Local Government under Section 28 of the Planning and Development Act 2000, as amended. Planning Authorities and An Bord Pleanala are required to have regard to the Guidelines in carrying out their functions under the Planning Acts. The Guidelines introduce comprehensive mechanisms, such as Strategic Flood Risk Assessment (SFRA), for the incorporation of flood risk identification, assessment and management into the planning process. Implementation of the Guidelines is achieved through actions at national, regional, local and site specific levels.

A Strategic Flood Risk Assessment was carried out on the Ireland West Airport Knock LAP. It provided an appraisal and assessment of available flood risk data for the land use proposals within the boundary of the Ireland West Airport Knock LAP. The process identified flood risk indicators in each area and where it was demonstrated that lands may be at risk of flooding, modifications were recommended to land-use proposals or the carrying out of a more detailed flood risk assessment as appropriate was recommended.

Section 2 Strategic Planning Context and Considerations

2.1 Policy Context

The Ireland West Airport Knock Local Area Plan is required to be consistent with the policies and practices of a hierarchy of Plans and Guidelines which set out the strategic context for the overall strategy as set out in the LAP. Relevant documents within this hierarchy (but not limited to) include:

- The National Development Plan 2007 – 2013
- The National Spatial Strategy 2002 – 2020
- The Regional Planning Guidelines for the West Region 2010 – 2022
- The Mayo County Development Plan 2008 – 2014
- The Mayo County Retail Strategy 2008
- The Mayo County Housing Strategy 2008
- The Mayo County Development Board 10 Year Integrated Strategy
- Various Guidelines for Planning Authorities

While at the lower end of this hierarchy the LAP has been informed by the policy documents and guidelines listed above so as to ensure proper planning and sustainable development. Various issues were also identified during the pre-draft public consultation phase were also been taken into consideration in preparing this LAP.

2.2 National and Regional Planning Context

2.2.1 The National Development Plan 2007 – 2013 (NDP)

The National Development Plan 2007 – 2013 sets out Ireland's future as an enlarged urbanised society within a defined urban hierarchy. The NDP aims to promote balanced regional development, social inclusion and enhanced economic competitiveness. The NDP provides general policies for infrastructure development for all regions of Ireland. The NDP acknowledges the role of regional airports:

“Regional airports play an important role in improving access to more remote areas of the Country particularly for business and tourist interests. Within the BMW Region, the contribution of the four regional airports (Donegal, Galway, Knock and Sligo) to improving tourism and business access to the Region can be enhanced by upgrading of the existing infrastructure”.

2.2.2 The National Spatial Strategy 2002 – 2020 (NSS)

The National Spatial Strategy outlines an overall national approach to spatial planning. Its aim is to facilitate balanced regional development throughout the Country. In Mayo, the NSS identifies the towns of Ballina and Castlebar as a linked hub, the aim of which is to complement the nearby gateways of Galway and Sligo, whilst also providing services to its associated catchments.

The NSS highlights Ireland West Airport Knock in an International Spatial Context with links to International Air Hubs (London) while reinforcing its importance within the Regional context with links to Dublin. The NSS confirms the importance of Ireland West Airport Knock due to its proximity to the hub towns of Castlebar, Ballina and Tuam and its central location between the Gateways of Sligo and Galway.

“Castlebar, Ballina and Tuam, as hubs, will perform important roles within the National structure at the regional and county level. Critical factors will include improvements in regional accessibility through advanced communications, infrastructure, by road and public transport and through the regional airport at Knock”

The NSS highlights that appropriate infrastructure may need to be provided ahead of actual need in order to readdress existing imbalances of development between the East and West of the Country and states that

“Knock airport should be developed as an industrial hub for East Mayo”

Fig 2: Ireland West Airport Knock in the context of the Western Region of the NSS



Source: National Spatial Strategy 2002 -2020

2.2.3 Regional Planning Guidelines for the West Region 2010-2022

The Regional Planning Guidelines (RPG's) for the West Region 2010 – 2022 set out a framework for the long term strategic development of counties Mayo, Galway and Roscommon. The RPG's aim is to deliver balanced regional development with specific objectives to stimulate social, economic and cultural development.

The RPG's outline a strategic role for Ireland West Airport Knock:

“The strategic importance of Ireland West Airport Knock as an amenity and an important transportation link to facilitate the growth and connectivity to the West Region”

“To develop hubs for industry and commerce adjacent to or in the region around the airport”

“To support the designation of a Strategic Development Zone at Ireland West Airport Knock”

“To facilitate the appropriate and sustainable development of industrial/commercial lands and structures adjacent or close to the airport.”

2.2.4 National Planning Guidelines

There are a number of National Planning Guidelines that have guided the strategy and objectives set out in this Local Area Plan. These include, but are not limited to, the following:

- Implementing Regional Planning Guidelines - best practice guidelines (2005)
- Landscape and Landscape Assessment (2000)
- Development Plans Guidelines (2007)
- Retail Planning Guidelines (2005)
- Implementation of Strategic Environmental Assessment Directive: Assessment of the Effects of Certain Plans and Programmes on the Environment. (2004)
- Appropriate assessment of Plans and Projects in Ireland: Guidance for Planning Authorities (2009)
- The Planning System and Flood Risk Management - Guidelines for Local Authorities (2009)
- The National Climate Change Strategy 2007-2012
- Smarter Travel: A Sustainable Transport Future

2.3 County Context

2.3.1 Mayo County Development Plan 2008-2014

The Mayo County Development Plan was adopted in 2008 and sets out a policy framework for development within the county until 2014. The Plan sets out a long term vision for the development of the County through the principles of sustainable development and social partnership. The Plan was varied in 2011 to incorporate a Core Strategy, the purpose of which is to set out an evidence based strategy for spatial development of the county and to demonstrate that the development objectives in the development plan are consistent, as far as practicable, with national and regional development objectives set out in the NSS and RPGs. A central component of the Core Strategy is the County Settlement Strategy which based on a settlement hierarchy, which itself, is consistent with the spatial structure, aims and objectives of the NSS and RPGs. The Ireland West Airport Knock LAP sets out a plan-led framework to facilitate the development of Ireland West Airport Knock as an economic driver in the County and

supports the aims, policies and objective of the Mayo County Development Plan 2008-2014.

The County Development Plan specifically identifies the future growth of Ireland West Airport Knock through the following aims, polices and objectives.

Development Aims	Policies /Objectives
<p>Transportation and Infrastructure</p> <ul style="list-style-type: none"> • to support and promote the development of the transportation assets of the County, including Ireland West International Airport Knock, and the strategic road and rail corridors as critical elements of the intra/inter regional linkages. <p>County Development Strategy</p> <ul style="list-style-type: none"> • the sub-regional role of Ballina / Castlebar as a linked hub development hub and Westport as its natural extension necessitate the provision of appropriate levels of physical and social infrastructure including: <ul style="list-style-type: none"> • public transport connections between the hub towns, Westport and Ireland West Airport Knock • improvement and development of Ireland West Airport Knock 	<p>Policies</p> <p>P/TI-A 1 It is the policy of the Council to support the development of Ireland West Airport Knock in accordance with the principles of proper planning and sustainable development.</p> <p>Objectives</p> <p>O/TI-A 1 It is an objective of the Council to request the Minister of the Environment, Heritage and Local Government to designate the area around Ireland West Airport Knock as a Strategic Development Zone.</p> <p>O/TI-A 2 It is an objective of the Council to prepare a Public Safety Zone Map for Ireland West Airport Knock</p> <p>O/TI-A 3 It is an objective of the council to create and enforce an exclusionary zone of a 13km radius of Ireland West Airport Knock. The 13km exclusionary zone shall define a volume of airspace, by means of Obstacle Limitation Surfaces, above which no new objects shall be permitted. The 13km exclusionary zone shall define an area within which no new conventional or residual landfills shall be constructed.</p> <p>O/TI-RL 1 It is an objective of the Council to actively seek and support the reinstatement of the Western Rail Corridor and associated railway stations, including the section from Claremorris to Collooney, as a strategic transport corridor linking Mayo with Sligo, Galway and Limerick, emphasising the potential link to Ireland West International Airport from Swinford, Kiltimagh, Charlestown or whichever route is deemed the most suitable for such a link.</p>

Other policy documents at the County level which have informed the LAP include:

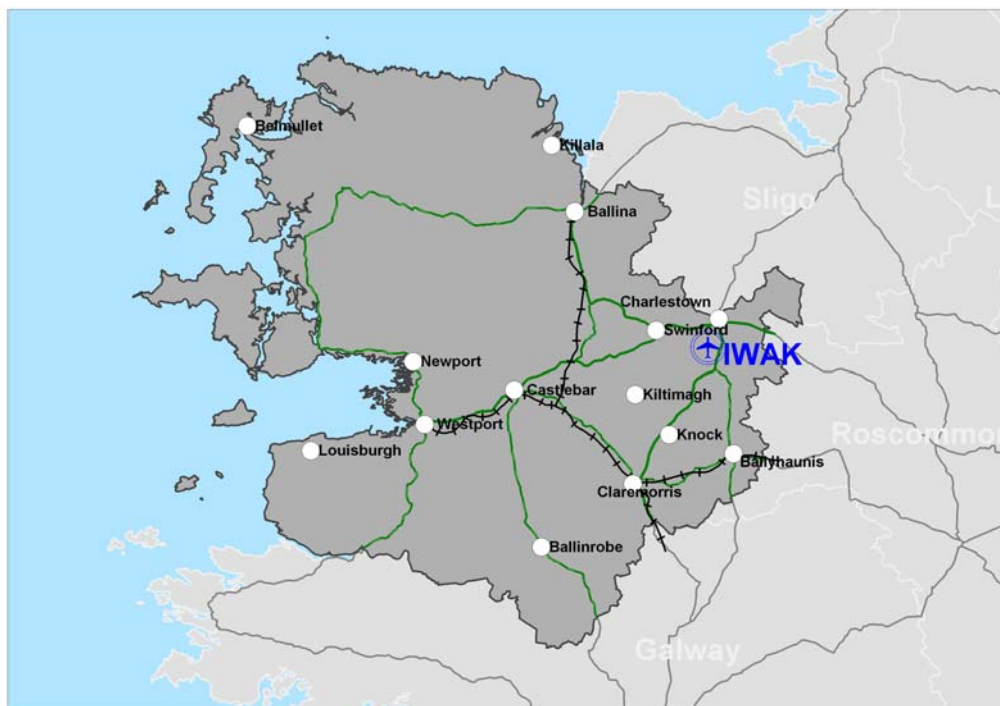
Mayo County Housing Strategy 2008	Mayo County Retail Strategy 2008
<p>The Ireland West Airport Knock LAP will not impact on the provision of housing supply in the County as it is not proposed to provide for residential uses in the LAP area. The policies and objectives of the Mayo County Development Plan will continue to apply to lands outside of the LAP boundary.</p>	<p>The Retail Strategy outlines retail policies for the County which includes strengthening the role of the linked hub towns of Castlebar and Ballina through the support of the Second Tier Towns identified in the County Development Plan. The future development of Ireland West Airport Knock is key to the future development of Mayo in terms of the strategic importance of the Airport as an amenity and important transportation hub to facilitate the growth and connectivity to the West Region. Therefore the implementation of the Ireland West Airport Knock LAP indirectly supports the overall objectives of the Retail Strategy.</p>
Mayo County Development Board 10-year Integrated Strategy	
<p>“Maigh Eo Le Cheile le Neart – Mayo County Development Board 10-year Integrated Strategy” sets out a ten year strategy for economic, social and cultural development of the County. The Strategy highlights the importance of Ireland West International Airport and stresses the need for “the further development of Knock Airport, including the development of land for industrial purposes”</p>	

Section 3 Profile of Ireland West Airport Knock

3.1 Physical

Ireland West Airport Knock is located in the townland of Kilgarriff West and is centrally located in the Region along the National Primary Route (N17 Galway / Sligo) and 7 km from the National Primary Road (N5) which links Mayo to Dublin. Its location is pivotal in the Regional context as it is 50km from the linked Hub of Ballina/Castlebar, 55 km from the Gateway of Sligo and 90km from the Gateway of Galway.

Fig 3: Location of Ireland West Airport Knock



3.2 Historical

The construction of Ireland West Airport Knock was instigated by Monsignor James Horan, who envisioned the airport as a link to Rome, the Vatican and other religious destinations. The airport enjoyed modest success during its early years of operation. By 1989 total annual air passenger movements had reached 145,000. Passenger throughput remained at this level through 1990 but then fell by 30 percent to 101,000 in 1991. Passenger numbers increased steadily following the introduction of Ryanair's scheduled service to London Stansted in 1992 and by 1999 annual passenger throughput had reached 207,000. Following another period of instability between 1999 and 2002, air passenger movements began to rise rapidly following the introduction of low fares services to Birmingham in March 2003 and to Manchester in March 2004. The airport handled a total of 373,000 annual air passenger movements in 2004. (Source: Ireland West Airport Knock cumulative EIS, 2010) In 2011, the airport celebrated its 4 millionth passenger

3.3 Ireland West Airport Knock Today

The total national contributions of all activities at Ireland West Airport Knock in 2010 from expenditure form goods and services were €17.0m and 167 full time equivalent (FTE) jobs. The total contributions due to tourist generated activities in 2010 were

€111m and 817 FTE jobs. (Source: Ireland West Airport Knock – Economic Study, Ernst and Young, 2011)

In 2009 a new 3000m² terminal building was opened at the airport. This included a new improved departure area for passengers. The airport has also installed and implemented a new Instrument Landing System thus reducing by 98% the possibility of aircraft diversion to other airports. In improving its customer service Ireland West Airport Knock has developed new real time flight arrival and departure information which provides up-to-date travel information both at the terminal and online.

There are a number of Industrial / Warehousing units adjoining the airport site which provide services and additional employment to the area. Planning permission currently exists on site for the further expansion of this Industrial / Warehousing area.

3.4 Population and Demographic Profile

Receiving Environment

The airport acts as an International Gateway to the West of Ireland, North-West and Midlands. In this context is well positioned within the region to serve a catchment area of close to 1 million people, with large urban areas such as Galway, Athlone and Sligo, located within a two hour commuting distance from the airport.

Demographic Profile

In order to analyse the demographic profile of the area for the airport, all of the urban areas with a 25 km radius were examined. These include; Charlestown, Swinford, Knock, Kiltimagh, Ballyhaunis, Tubercurry, Ballaghderreen, Castlerea and Claremorris. These towns only represent part of the receiving population as there is a significant rural area within the catchment. However, it is considered that using the data for the towns only would give an overall trend to the demographic profile of the area surrounding the airport.

The airport also draws on the linked hub towns of Castlebar and Ballina and the regionally important towns of Boyle, Strokestown, Roscommon and Carrick on Shannon. In this context all of the towns in the area surrounding the airport and wider area form part of the policy growth areas outlined in the National Spatial Strategy, Regional Planning Guidelines and County Development Plans.

Population Change

The population of Ireland in 2011 was 4,588,252 persons compared with 4,239,848 persons in 2006, which represents an increase of 8.4%. The population of Mayo in 2011 was 130,638 persons, compared with 123,839 persons in 2006. Despite the population growth recorded in the County between 2011 and 2006, Mayo's share of the West Region population continued to decline - from 30% in 2006 to 29% in 2011. The Regional Planning Guidelines for the West 2010-2022 set out population targets for Mayo of 143,640 for 2016, which would be 30% share of the projected West Regions population, and 150,800 in 2022, which would be 29% share of the projected West Regions population.

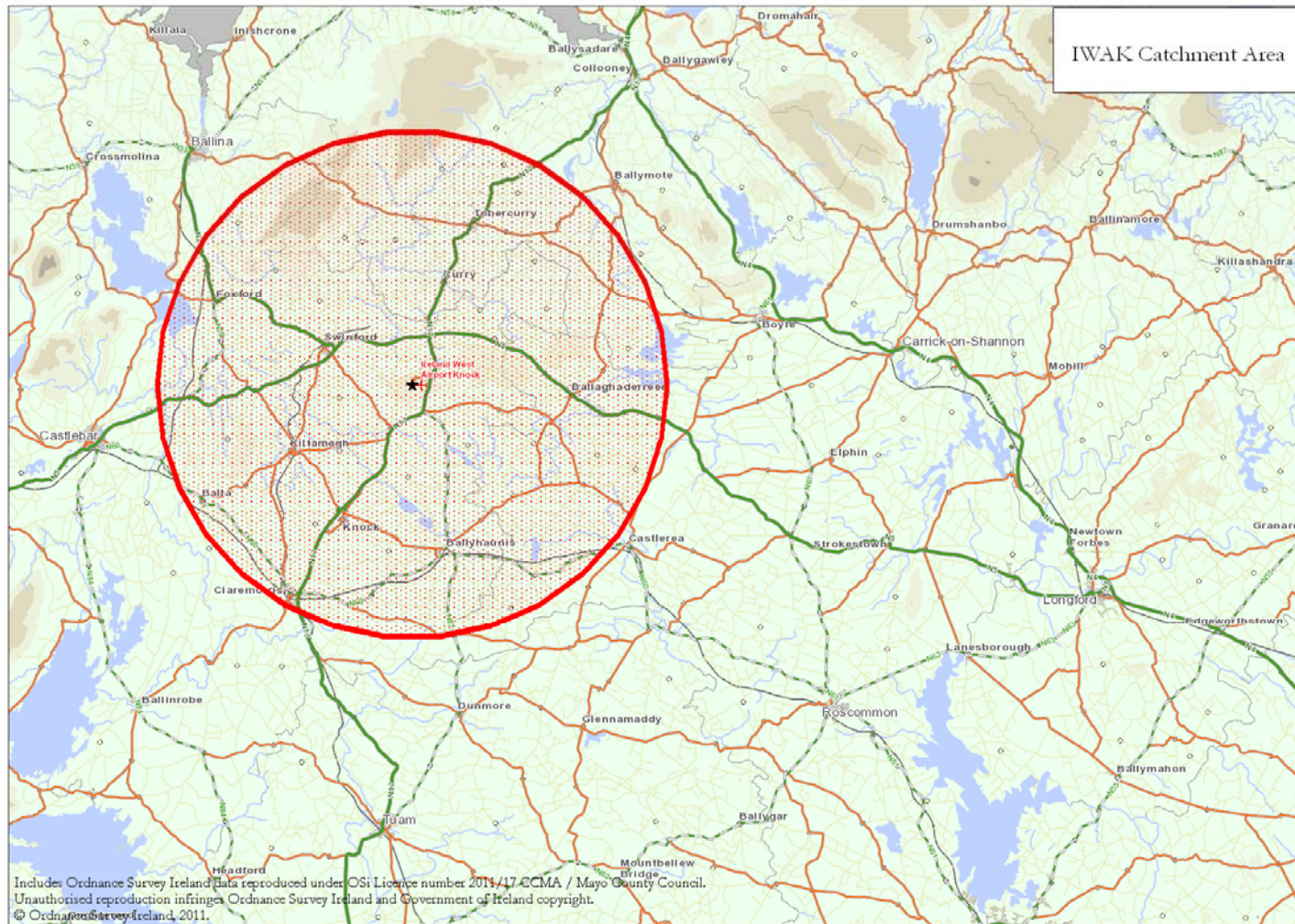
The population changes are illustrated in Table 1

Table 1: Population at State, County, and Catchment Areas between 2002 – 2006 - 2011

Area	Total Population		% Change	Population	%Change
	2002	2006			
State	3,917,203	4,239,848	+8%	4,588,252	+8.2%
Mayo	117,446	123,839	+5%	130,638	+5.5%
Urban Areas with 25k	20,862	22,966	+9%	24,895	+8.4%
Regionally Important Towns	28,730	30,695	+6%	36,136	+17.7%

Source: Census of Population 2002, 2006, and 2011

Fig 4: Ireland West Airport Knock Catchment Area

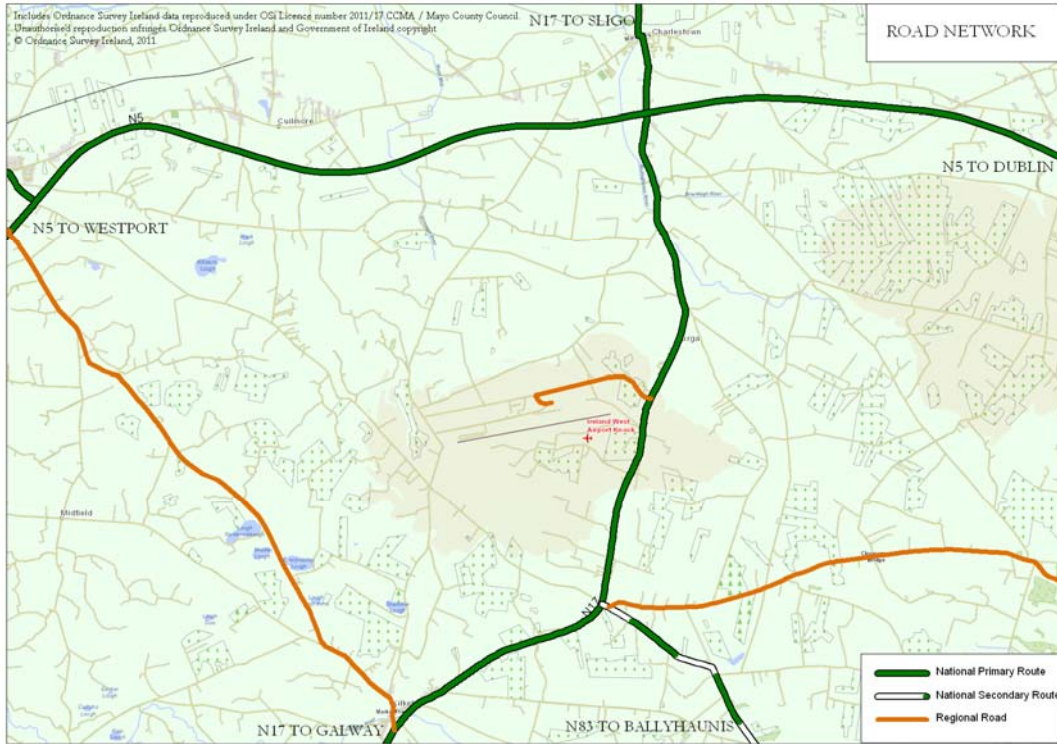


3.5 Transportation

3.5.1 Road Network

Access to the LAP area from the National Primary Route (N17) is via the R376 Regional Road. The N17 links the Gateways of Galway and Sligo and intersects with the National Primary Route N5 Dublin to Westport approximately 7km to the north of the Airport.

Fig 5: Road Network



Traffic counts at the junction of the N17 and the R376 in 2008 recorded 3558 Annual Average Daily Traffic Counts (AADT), with the N17 recording 6769 AADT. The National Roads Authority has plans to re-align the N17, bypassing Charlestown and a number of route options are currently being considered which will result in improved access to the area.

The R376 Regional Road traverses the centre of the LAP area. To the North of the Regional Road are undeveloped lands, whilst the lands to the South contain the Airport Campus. The Airport is accessed off the R376 by a roundabout with a spur leading to the Airport. Passenger circulation is through the existing car park. The situation is not ideal as the drop off and pick up areas are not separate from the airport parking area. The provision of a new access to the airport separating the car parking area from the drop off and pick up points would create a more effective circulation space for both vehicular and pedestrian movements within Airport Campus.

Emerging Issues:

- need to ensure that access is via the N17
- local road network may not have adequate capacity for any increased traffic movements
- reduce dependency on the car to access the LAP area

3.5.2 Public Transport

The Dublin to Westport/Ballina train service, currently operates four daily services in either direction, and is the only active train service operating within Mayo. The nearest train station is at Claremorris, which is approximately 30km to the south on the N17. The proposal to re-open the Western Rail Corridor between Sligo and Limerick would offer opportunities to provide a rail access to the airport. It would also provide the towns of Kiltimagh, Swinford and Charlestown, all within a short transfer distance to the airport, access to the national rail network. The re-opening of the Western Rail Corridor offers the possibility of providing a rail link from the LAP area to one of the above towns. In this context the provision of a rail terminal within the LAP area could be examined as a viable option.

Bus Eireann provides a daily service to Ireland West Airport Knock. Route 64 (Galway-Sligo) provides seven services a day from both Galway and Sligo to the Airport.

3.6 Infrastructure

3.6.1 Water Supply

The current water supply is sourced from a well, which is in the ownership of Mayo County Council. Tests on the supply indicate that the safe yield from the supply is 350m³/day. The current usage from this supply is from two sources, the Airport (50m³/day) and the Cloonlanyan Group Water Scheme (14m³/day). In terms of water supply for the LAP Area, this is not a sustainable option as this source will only facilitate development in the short term. In the intermediate term upgrading the Kilkelly Water Supply to provide a link to the area would yield an additional 300m³/day of water. The long term aim is to provide a link to the East Mayo Regional Water Supply Scheme which would guarantee a sufficient supply of water.

3.6.2 Waste Water

The existing Waste Water Treatment Plant was commissioned in 2004 with a design Population Equivalent (PE) of 700. Taking the current usage into consideration, the treatment plant has a spare capacity for PE of 370. The treatment plant uses a Sequencing Batch Reactor design which utilises the activated sludge process to treat the incoming waste water. The final effluent is discharged through a 100mm rising main outfall pipe (length 2,750m) to the Sonnagh River in the townland of Killeen. The Sonnagh is a tributary of the River Moy which is designated as a Special Area of Conservation (SAC) (Site Code 000298)

Emerging Issues:

- a more secure sustainable supply of water needs to be sourced for the LAP area.
- existing treatment plant can be upgraded to double the capacity
- a new waste water treatment facility would be required for the area to develop to its full potential
- surface water management system required for the LAP area

The existing treatment plant can easily be expanded to double the capacity to cater for a PE of 1400. Any further expansion would require the construction of a completely new Waste Water Treatment Plant. To enable the LAP area to develop to its full potential it is expected that a Waste Water Treatment Plant capable of accommodating a population equivalent of at least a 5000 PE is required.

3.6.3 Surface Water

At present there is no public surface water drainage system within the LAP area. Surface water is currently disposed off to existing drains and watercourses throughout the LAP area.

3.6.4 Electricity Supply

The airport is supplied by 10 kV line from the Charlestown 38kV/MV station via an outlet located at Charlestown (Airport Outlet). Standby provisions from this outlet are located at Swinford and Tubercurry. The supply feeds to a 600 kVA substation located on the airport property which supplies the airport and adjoining industrial park with power.

ESB Networks have a number of projects lined up to improve the supply of electricity to the area. These include:

- refurbishment of the Charlestown 38kV station. This will improve station operations and facilitate the supply needs of new and growing loads, while maintaining existing supplies.
- the Charlestown outlet which feed the Airport will be split into two separate outlets. Splitting the outlet will mean that the Airport and other customers within the area will have a more dedicated supply which will improve the overall security of supply.
- a new standby facility is proposed for the Airport by converting a section of single phase network to three phase. This will ensure that if there is a line fault, the area will have a supply.

Emerging Issues:

- dependency on electricity supply.
- no other sources of energy supply to the LAP area

3.6.5 Telecommunications

Mayo County Council has provided a Metropolitan Area Networks (MANs) around the airport site offering a fast and efficient telecommunications network within the LAP area. MANs is a high capacity fibre optic system which is future proofed and offers virtually limitless capacity in terms of broadband and other telecommunication systems.

3.6.6 Gas

The Mayo-Galway Gas Pipeline runs to the West of Claremorris, with a spur feeding Claremorris. Extending this spur to the LAP area would be beneficial to attracting development.

3.7 Airport Infrastructure

3.7.1 Runways

The existing runway (27-09 runway) is 2300 metres long and 45 metres wide. The runway has turning circles, 80 metres in diameter at each end, symmetrical about the runway centreline. The runway strip is a defined area which includes the runway and stopway and is intended to reduce the risk of damage to aircraft running off a runway and to protect aircraft during take off and landing operations.

Table 2: The declared distances of the runway:

	TORA (Take Off Run Available) (m)	ASDA (Accelerate Stop distance Available) (m)	TODA (Take Off Distance Available) (m)	LDA (Landing Distance Available) (m)
Runway 27	2270	2300	2300	2270
Runway 9	2240	2300	2300	2087

The current runway strip is 300 metres wide and is in compliance with the International Civil Aviation Organisations (ICAO) recommendations for CAT 2 runways. No fixed objects except for visual aids required for navigation purposes as set out by the ICAO are permitted within the runway strip. The existing runway is sufficient to cater for planned and future aircraft requirements, but it may be necessary to consider an extension of the runway to cater for a wider range of aircraft.

3.7.2 Taxiways

The airport has a 23m wide taxiway connecting the runway to the passenger apron. Access to the freight apron from the runway is provided by a second taxiway 23m in width. The development of a taxiway parallel to the existing runway would allow landing passenger and freight aircraft to clear the runway without affecting runway operations.

Emerging Issues:

- ensure lands about the airport campus are safeguarded to allow for the future expansion of all airport infrastructure provision.

3.7.3 Aircraft Apron Areas

The current passenger apron has sufficient capacity for three aircraft, giving easy access to and from the terminal building. The freight apron is located towards the Western boundary of the airport, which, if necessary, can also be used as an overflow facility for passenger handling. Any future development of the airport would require the extension of the apron area possibly around a central pier.

3.7.4 Terminals and Piers

The original passenger terminal was built in 1986 and is located north of the runway directly west of the current passenger apron. A 3000m² extension to the terminal building was opened in 2009 which has resulted in creating more circulation space for passengers, new security screening areas, extended check in facilities, an increased departure lounge space as well as new retail, catering and other facilities.

3.7.5 Hangerage, Maintenance and Aviation Fuel Farm

At present there are no maintenance or hangerage facilities. Any future development of the airport would require the provision of maintenance facilities consisting of an apron area and aircraft hanger. All of these elements would be located in a hangerage area which would accommodate an aircraft maintenance area and aircraft reclamation/dismantling facilities. In addition the fuel farm at the airport would need to expand its supply capacity.

3.7.6 Car Parking

The airport car park has capacity for 1600 cars. The expansion of the airport will necessitate an increase in car parking capacity. Upgrading car parking facilities at the airport and

providing short term and long term parking will improve the movement and free flow of traffic throughout the LAP area.

3.8 Natural and Cultural Heritage

3.8.1 Natural Heritage

The main habitats within the plan area, have been identified and described as part of the Ireland West Airport Knock Cumulative EIS (prepared by the Airport Development Company) and classified according to Fossitt (2000). They include cutover bog (PB4), wet grassland (GS4), wet heath (HH3), dry humid acid grassland (GS3) and improved agricultural grassland (GA1). Also present are eroding upland rivers (FW1), dry siliceous heath (HH1), exposed siliceous rock and buildings (BL3). Currently, a relatively small proportion of the SEA study area is taken up by the existing airfield, airport terminal buildings and associated landside facilities

There are no designated sites within the proposed Ireland West Airport Knock LAP area. However, the River Moy cSAC is located approximately 2km to the north and south of the study area. Two proposed NHAs are located within 4km of the plan area, namely Killaturly Turlough pNHA and Lough Gower pNHA.

Table 3: Designated Sites (candidate Special Areas of Conservation (cSAC) and proposed National Heritage Areas (pNHA)) within a 5km radius the Ireland West Airport Knock LAP study area

Designation	Site Code	Site Name
cSAC	002298	Moy Complex
pNHA	000511	Killaturly Turlough
pNHA	000523	Lough Gower

River Moy candidate Special Area of Conservation: Site Code cSAC 002298

The River Moy SAC is located approximately 4.5km to the northwest, northeast and southwest of the LAP area. It comprises almost the entire freshwater element of the Moy and its tributaries, including both Loughs Conn and Cullin. The system drains a catchment area of 805 sq km. The site is a cSAC selected for alluvial wet woodlands and raised bog, both priority habitats on Annex 1 of the EU Habitats Directive. The site is also selected for old oak woodlands, degraded raised bog and Rhynchosporion, all habitats listed on Annex I of the Habitats Directive. The site is also selected for the following species, listed on Annex II of the Habitats Directive – Atlantic salmon, otter, Sea and Brook Lamprey and White-clawed crayfish. Within the site are a number of raised bogs, including those at Kilgarriff, Gowlaun, Derrynabrock, Tawnaghbeg and Cloongoonagh. The Moy system is one of Ireland’s premier waters and it also encompasses two of Ireland’s best lake trout fisheries in Loughs Conn and Cullin. In addition, the site also supports many more of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger, Irish Hare, Common Frog and Daubenton’s Bat.

Killaturley Turlough Natural Heritage Area: Site Code NHA 000511

Killaturley Turlough, located 4.9km to the northwest of the LAP area, is a permanent lake set in a hollow between moraines and surrounded by bog. The main water source for the basin seems to be a swallow hole at the eastern end and a stream which flows from the southeast. Where peat has been largely removed, there are reeds (*Phragmites australis*) and

sedges (*Carex diandra* and *C. serolina*). Towards the southwest, this community merges into a denser reedbed (*Phragmites australis* and *Typha latifolia*), which is surrounded by rushy fields and patches of peat moss (*Sphagnum* spp). Snipe and water rail nest in the area, while other water fowl are often present. Despite the small area of strictly Turlough vegetation, the site is of value as a composite wetland and therefore warrants NHA status.

Lough Gower Natural Heritage Area: Site Code NHA 000523

Lough Gower NHA is located 4.1km to the southeast of the LAP area is small lake in the catchment of the Boyle River. The surrounding land is mostly flat or gently undulating bog or improved pasture. The lake bottom is sandy and colonised by aquatic mosses (*Drepanocladus* spp.). The lakewater is a brownish colour, stained by peat and mineral substances, and shows no sign of eutrophication. At its western end, the open water is colonized by swamp vegetation. Floating Bur-Reed (*Sparganium angustifolium*) is of note in that it is not commonly found in low-lying areas such as this. The northern lakeshore is bordered by sloping grassland, which is partially colonized by Gorse (*Ulex europaeus*). Grassland species include Yorkshire fog (*Holcus lanatus*) and Sweet vernal grass (*Anthoxanthum odoratum*). Towards the top of the slope this grades into wet heath, with abundant sphagnum mosses and Ling heather (*Calluna vulgaris*). South of the lake are fields, which have been heavily improved for agricultural use. Perennial rye grass (*Lolium perenne*) is abundant in these grasslands. Lough Gower is of importance as a lake of low nutrient status, which shows no sign of eutrophication. Such lakes are uncommon in low-lying agricultural areas such as this. In addition, it is fringed by semi-natural reed bed/swamp vegetation.

Along with sites designated for nature conservation, Mayo has many other areas of local ecological importance including broadleaved woodlands, scrub, hedgerows, tree lines, cutover bog and wet grassland. Many of these areas are important, helping to form wildlife corridors and ecological networks across the landscape. These corridors and networks allow animal species to move freely from one habitat to another.

3.8.2 Architectural Heritage

There is very little in terms of built heritage within the Ireland West Airport Knock LAP area. Developments at the airport and a number of unoccupied/derelict houses within the LAP area are not considered architecturally important. No structure within the Plan area is listed on the Record of Protected Structures.

Emerging Issues:

- ensure sufficient measures for the protection of the natural and built heritage

3.8.3 Archaeological Heritage

There are 12 items included on the Record of Monuments and Places (RMP) within or adjoining the Ireland West Airport Knock LAP boundary. These are listed in Table 4 below:

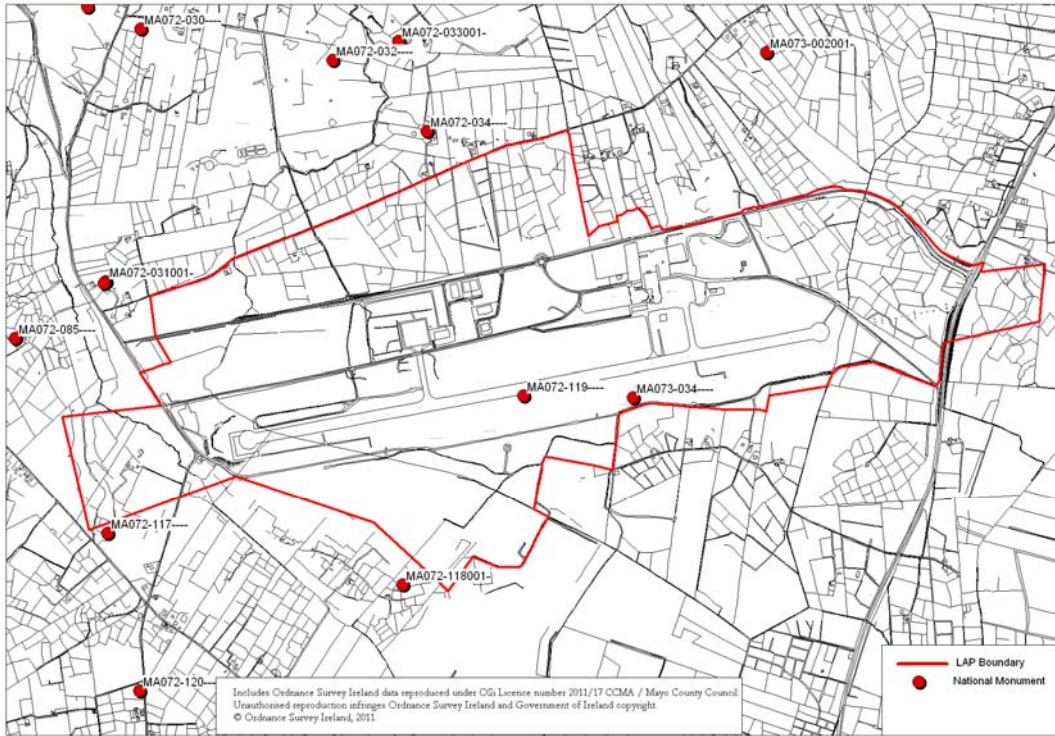
Table4 Record of Monuments and Places (RPM)

RPM No.	Monument Type
MA072-030	Enclosure and Souterrain
MA072-031	Enclosure
MA072-032	Enclosure- Site
MA072-033	Enclosure and Children’s Burial Ground
MA072-034	Enclosure
MA072-085	Wedge Tomb
MA072-117	Fulacht Fiadh

MA072-118	Ecclesiastical Remains-Possible Graveyard-Possible Children's Burial Ground-Possible House Site
MA072-119	Megalithic Tomb
MA072-120	Fulacht Fiadh
MA073-002	Enclosure and Children's Burial Ground
MA073-034	Mound

Figure 6 below shows the location of items listed in Table 4.

Fig 6: Map showing Record of Monuments and Places (RMP)



3.9 Flooding

The main flood risk within the LAP area is Pluvial. Pluvial flooding can be defined as flooding which results from rainfall generated overland flow and / or ponding which may occur during or immediately after intense rainfall events, before the runoff enters any water course or sewer.

The Public consultation process also identified three areas where flooding occurred that are not recorded on any OPW mapping or flood related database. The first is to the north of the LAP boundary where a local road floods, during heavy rainfall causing a drain to overflow before it discharges to a nearby stream. The second location is to the West of the Runway where ponding occurs, again just after heavy rainfall. The third relates to lands across from the N17 which floods, again after heavy rain.

Emerging Issues:

- need for a surface water management system for the Ireland West Airport Knock LAP area

3.10 Landscape

The location of the existing Airport campus is on elevated lands adjoining the N17 approximately 8km South of Charlestown. The existing airport facilities and adjoining business park are located on an upper plateau that gently slopes to the West and steeply to the North. The upper plateau consists mainly of peat land with the various component parts of the airport on reclaimed lands. The runway is located on the upper platform at an Ordnance Datum of approximately 200m above sea level. On the northern and eastern side of the airport the topography falls steeply. The lands to the eastern side of the airport also have extensive areas of coniferous forestry. Extensive views from the north and northern east are available from the Regional Road. (R367)

Emerging Issues:

- ensure that all proposed developments are absorbed into the surrounding landscape so that they do not impinge in any significant way upon the character, integrity or uniformity of the landscape.

There is limited tree cover within the environs of the Local Area Plan study area. There are areas of coniferous forests to the Eastern side of the airport and on either side of the Regional Road (R367) from the N17. To the North of the R367 the steeply dipping fields consist of poor grassland and post and wire/stone ditch field boundaries.

Section 4 Development Strategy for Ireland West Airport Knock

4.1 Development Strategy

This section sets out the Council's overall strategy for the future sustainable development of Ireland West Airport Knock Local Area Plan. The primary aims of the LAP are:

- to enable the development of Ireland West Airport Knock as a strategically important international gateway to the Region through the continued growth of the Airport as a major transportation hub
- to enable the full development potential of Ireland West Airport Knock as a strategic economic/enterprise hub for the Region, to be fully realised in a sustainable, co-ordinated and plan led manner whilst ensuring the efficient and effective operation of the Airport
- to support the designation of the Ireland West Airport Knock LAP area as a Strategic Development Zone (SDZ).

To achieve the aims of the LAP it is necessary to:

- facilitate the sustainable development of the LAP area as a strategically important transportation and economic/enterprise hub through the implementation of policies, objectives and design standards set out in this LAP
- to ensure that there is sufficient appropriately zoned land within the LAP area to support its operation and development as a SDZ
- to promote the development of the LAP area in terms of the 'Green Economy' through the provision of sustainable principles set out in this LAP
- to request the Minister for the Environment, Community and Local Government to designate the area of the Ireland West Airport Knock LAP as a Strategic Development Zone following the adoption of this LAP.

4.2 Land Use Zoning

4.2.1 Zoning Methodology

To facilitate the development of the area as a strategically important transportation and economic/enterprise hub, the zoning of appropriate land uses is required. The purpose of the zoning is to indicate the types of development which the Council considers the most appropriate in each zone. In order to determine appropriate land use zoning, it is necessary to understand how airports operate. The operations of any airport can be categorised into two areas.

Airside Area

Airside is the area of the airport that is within a secure boundary, access to which is through a controlled security access point. For example, all areas of a terminal after passengers have passed through security checks such as the departure gates and duty free areas. Runways, taxiways and all operations relating to aircraft are considered within the Airside Area.

Landside Area

Landside is the area of the airport that does not require full security screening in which to gain access. This is the part of the airport usually farthest from aircraft, the boundary of

which is the airport security fence, security check and custom passport control. For example, all areas of a terminal before passengers have passed through security checks such as the check in facilities. Car parking and car rental areas are considered with the Landside Area

In order to facilitate the development of the LAP area as a strategically important transportation and economic/enterprise hub, the zoning of appropriate land uses is required to achieve this aim. Taking the existing operations associated with airports, both a Landside and Airside zone is considered an appropriate land use zone for the Ireland West Airport Knock LAP area. An Airport Development Zone is considered an appropriate land use to facilitate development not normally associated with the landside and airside zones, but necessary to develop the area as an economic/enterprise hub. Finally, to safeguard the expansion of airport operations for future navigational equipment, a Rural Character Zone is also considered appropriate as other land use designations are not deemed appropriate to this specific requirement.

4.2.2 Land Use Zones and Objectives

This section sets out the land use zones and objectives for the LAP area. It should be read in conjunction with Map 1 and Table 6 which shows Zoning Objectives for each land use zone and the uses generally permitted in each zone. The boundary between zoning is not exact and development proposals may impinge on adjoining land use zones. This is acceptable if it is demonstrated that it does not effect the overall zoning designation.

The Land Use Zoning Objectives considered appropriate for the LAP area are as follows:

Land Use Zone	Objective
Airside Zone	To protect, improve and develop the Airside Zone of Ireland West Airport Knock to its full potential and to provide for all facilities necessary, incidental or ancillary to Airport Operations
Landside Zone	To protect, improve and develop the Landside Zone of Ireland West Airport Knock to its full potential and to provide for all facilities necessary, incidental or ancillary to Airport Operations and to facilitate accessibility to the Airport Campus.
Airport Development Zone	To facilitate appropriate development in order to strengthen the strategic role of Ireland West Airport Knock as a key economic/enterprise hub for the Region, whilst protecting the future operations of the Airport.
Rural Character Zone	To protect the setting, character and environmental quality of Ireland West Airport Knock

4.3 Airport Development Zone

4.3.1 Introduction

A primary aim of the LAP is to facilitate the development potential of Ireland West Airport Knock as a strategic economic/enterprise hub for the Region. In order to achieve this aim, it is necessary to attract inward investment to the LAP area through the development of an enterprise/business park.

Having regard to the analysis of the Strategic Environmental Assessment, the Appropriate Assessment and the Strategic Flood Risk Assessment, in addition to any restrictions relating to the Public Safety Zones. The most suitable location for the development of an enterprise/business park is in the Airport Development Zone.

It is projected by the Airport Development Company's business plan that an enterprise/business park could accommodate a total of 50,000m² of gross floor area over a 20 year period. The LAP is a framework for the future development of the LAP area beyond its 6 year life span and is a precursor to its' designation as a Strategic Development Zone.

There is approximately 56 Ha of undeveloped lands within the Airport Development Zone. Taking a density of 1000m² of development per 0.5 Ha of land (see density calculations in Appendix 1) the enterprise/business park would require a land take of 25 Ha. The development of the enterprise/business park should be a plan led approach to avoid piecemeal and ad-hoc development.

The designation of the Local Area Plan area as a Strategic Development Zone (SDZ) will require the preparation of Planning Scheme which will direct the development of the SDZ in a comprehensive, sustainable manner. Until such time as the Planning Scheme for the SDZ is approved planning applications will be considered on their own merit and in accordance with the Land Use Zoning and Objectives of this Local Area Plan.

4.3.2 Land Ownership, Co-operation and Profit Sharing

As the lands within the SDZ are not in single ownership, it is recommended that landowners/developers work together in the preparation of the SDZ Planning Scheme.

4.3.3 Phasing

The existing water supply and waste water treatment plant capacity indicates that there is insufficient capacity available to cater for the predicted 50,000m² of enterprise/business park development. Therefore development within the Airport Development Zone shall be phased in accordance with Table 5 below. (See phasing and density calculations in Appendix 1)

Table 5 Phasing of Development

Phase	Ha	Floor Space	Workforce (estimated)	Water Supply	Sewerage Treatment
Phase 1	3Ha	5550m ²	370 persons	Existing Capacity	Existing Capacity
Phase 2	7Ha	14450m ²	1330 persons	Existing Capacity	Upgrade Treatment Plant
Additional Phases	15Ha	30000m ²	3300 persons	New Water Supply	New Treatment Plan
Total	25Ha	50,000m²	5000 persons		

There is sufficient capacity in both water supply and waste water treatment to carry out Phase 1. Phase 2 will require an upgrade of the existing waste water treatment plant. The design/construction for upgrading the existing plant should be carried in tandem with the development of Phase 1. It is envisioned that Phase 1 and 2 development of the Enterprise/Business Park could be complete over the lifespan of the LAP.

The further development of the LAP area would require a new water supply to the area and the construction of a new waste water treatment plant to cater for the increased demand. Whilst this may not occur during the life span of the LAP it would occur over the lifetime over any SDZ designation.

Section 5 Policies and Objectives

5.1 Introduction

This section sets out the policies and objectives which the Council consider necessary to implement the Development Strategy for the Ireland West Airport Knock LAP, and thus guide the future development of Ireland West Airport Knock. A policy can be defined as an ongoing approach or view that the Council will take towards new development, while an objective can be defined as a specific goal that the Council aims to see implemented.

5.2 Strategic Development

Strategic Development Policies and Objectives consist of the broad principles by which the Planning Authority intend to achieve the ideals and operations set out in the Strategic Aims of the Local Area Plan.

5.2.1 Policies Strategic Development

Policy	
SDP1	It is the policy of the Council to promote and support the development of Ireland West Airport Knock as a strategically important international gateway to the Region through the continued growth of the Airport as a major transportation hub.
SDP2	It is the policy of the Council to support and promote the development potential of the Ireland West Airport Knock LAP area as a strategic economic/enterprise hub for the Region.

5.2.2 Objectives Strategic Development

Objective	
SDO1	It is an objective of the Council to facilitate the sustainable development of the LAP area as a transportation and economic/enterprise hub of strategic importance for the Region through the implementation of the policies; objectives and design standards/guidance of this LAP.
SDO2	It is an objective of the Council to request the Minister for Environment, Community and Local Government to designate the area of the Ireland West Airport Knock Local Area Plan as a Strategic Development Zone following the adoption of this LAP
SDO3	It is an objective of the Council to ensure that there are sufficient appropriately zoned lands to facilitate the sustainable development of the Ireland West Airport Knock LAP area as a strategic transportation and economic/enterprise hub for the Region.
SDO4	It is the objective of the Council to promote the orderly development of all lands zoned within the Ireland West Airport Knock LAP area by encouraging, where necessary, land assembly and shared access arrangements.
SDO5	It is an objective of the Council to ensure that the development of all lands zoned as 'Airport Development' in Section 4 of this LAP are managed in a sustainable plan led manner.
SDO6	It is an objective of the Council to promote a high quality working environment to ensure that the LAP area is an attractive place to work and visit.
SDO7	It is an objective of the Council to promote the development of the Ireland West Airport Knock LAP area in terms of the 'Green

	Economy' through the polices; objectives and design standards relating to sustainability outlined throughout this LAP
SDO8	It is the objective of the Council to ensure that all development proposals comply with the Design Standards and Guidance set out in Section 6 of this LAP

5.3 Land Use

Land uses in and around airports are very specific and relate to their functions and operation. It is necessary to ensure that the lands around the airport campus are safeguarded for the future development of the airport. The uses within the Plan area should act as a stimulus to attract economic development to the area. Section 4 of the Plan outlines the different land use zoning objectives for the Plan area

5.3.1 Land Use Policies

Policy	
LP1	It is the policy of the Council to rationalise the use of lands within the Ireland West Airport Knock LAP area through appropriate land use zoning objectives as outlined in Section 4 of this LAP

5.3.2 Land Use Objectives

Objective	
LO1	It is an objective of the Council to ensure that all development proposals comply with the land use zoning objectives outlined in Section 4 of this LAP; other uses may only be considered were it is demonstrated that they do not conflict with the primary land use zoning objective.

5.4 Sustainability Options

Energy efficiency and developing the 'Green Economy' are important elements for the Ireland West Airport Knock LAP area. The following policies and objectives will ensure that development within the LAP area strives to achieve this ultimate aim

5.4.1 Sustainability Policies

Policy	
SP1	It is the policy of the Council to promote the use of sustainable options for all development proposals to support the 'Green Economy' concept within the Ireland West Airport Knock LAP area.

5.4.2 Sustainability Objectives

Objective	
Energy/Conservation	
SO1	It is an objective of the Council to encourage the use of energy efficiency in all new development proposals, with the ultimate aim of achieving a Carbon Neutral Status for the Ireland West Airport Knock LAP area
SO2	It is an objective of the Council to support measures to raise public awareness of the value of the water resources by encouraging conservation, reuse and protection of water, in addition to the elimination of wastage of water through waste-water detection and enforcement of repairs and to replace deficient sections of pipe work

	where necessary
SO3	It is an objective of the Council promote the reduction of energy consumption through innovative design and layout with the appropriate use of materials and new technology in developments within the Ireland West Airport Knock LAP area and to increase public awareness of best energy efficiency practices
Layout/Design	
SO4	It is an objective of the Council to encourage a high quality design and layout of all development proposals to reduce the reliance on the motor car, support movement by pedestrians and cyclists, provide adequate and convenient access to public transport and connect well with the wider locality.
Waste Management	
SO5	It is an objective of the Council to require that all new development proposals make adequate provisions for the reduction, reuse and recycling of waste, in both construction and post-construction stages and to implement the recommendations outlined in the Replacement Waste Management Plan for the Connacht Region 2006-2011 and any subsequent Waste Management Plan

5.5 Transport

Transportation infrastructure is essential for the continued growth of the LAP area as a strategically important transportation hub for the Region This section sets out the policies and objectives relating to surface access, such as road, rail and public transport, and includes measures to encourage a wider range of transportation options.

5.5.1 Transport Policies

Policy	
TP1	It is the policy of the Council to encourage and support the use of more sustainable modes of transport to, from and within the Ireland West Airport Knock LAP area including public transport; walking and cycling and to ensure that new developments accord with this aim
TP2	It is the policy of the Council to support the improvement of accessibility and vehicular movements to, from and within the Ireland West Airport Knock LAP area.
TP3	It is the policy of the Council to secure the implementation of the N17 Charlestown Bypass

5.5.2 Transport Objectives

Objective	
Road Network	
TO1	It is an objective of the Council to protect lands adjoining the route of the proposed N17 Charlestown Bypass, within Ireland West Airport Knock, from unsuitable and/or inappropriate development which could jeopardise the project
TO2	It is an objective of the Council to comply with the requirements of the National Roads Authority in relation to National Roads in the Plan area
TO3	It is an objective of the Council to review, as the need arises, the

	circulation of traffic within the Plan area and to support the provision of any alterations in order to provide for the safe and efficient movement of vehicular and/or pedestrian traffic and to implement appropriate traffic management measures as required.
TO4	It is an objective of the Council to assess, as the need arises, 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 deficiencies identified should be addressed within a reasonable timeframe by the relevant authority.
TO5	It is an objective of the Council encourage the used of shared access points onto the public road network.
TO6	It is an objective of the Council to co-operate with relevant interests to encourage the provision of a high standard of public transport services to the Ireland West Airport Knock LAP area.
Public Transport	
TO7	It is an objective of the Council to support the reinstatement of the Western Rail Corridor and to support the provision of a rail link from the Western Rail Corridor to the LAP area
Accessibility	
TO8	It is an objective of the Council to support the provision of car parking facilities, as the need arises, for the LAP area
TO9	It is an objective of the Council to identify, support and secure a footpath and cycle path network for the LAP area

5.6 Infrastructure Provision (Utilities)

In order to secure the sustainable development of the LAP, it is essential that adequate infrastructure services are in place. Inadequate provision of infrastructural services can prejudice environmental quality and public health. Therefore, the LAP seeks to ensure that adequate infrastructure is in place to serve the LAPs current and future needs.

5.6.1 Policies Infrastructure Provision (Utilities)

Policy	
IP1	It is the policy of the Council to support the provision of all infrastructure as appropriate, including water, waste, energy and communications, necessary to support the existing and future sustainable development of the LAP area in accordance with all national and EU Legislation

5.6.2 Objectives Infrastructure Provision (Utilities)

Objective	
Water/Waste Water	
IO1	It is an objective of the Council to co-operate/co-ordinate, as appropriate, with the relevant Water Services Authority to ensure that an adequate supply of water is available to meet the current and future needs of the LAP area.
IO2	It is an objective of the Council to co-operate/co-ordinate, as appropriate, with the relevant Water Services Authority to ensure high water quality standards are maintained by implementing the relevant European Community Water Quality Directives

IO3	It is an objective of the Council to co-operate/co-ordinate, as appropriate, with the relevant Water Services Authority to ensure that all drinking water in the area complies in full with the European Communities (Drinking Water) (No. 2) Regulations, or any subsequent regulations.
IO4	It is an objective of the Council to co-operate/co-ordinate, as appropriate, with the relevant Water Services Authority in providing sufficient medium to long term supplies of potable water and waste water treatment facilities for the LAP area
IO5	It is an objective of the Council to monitor the situation regarding adequacy of piped water supply, as well as wastewater collection and treatment of the LAP area. Where the Council considers there are existing deficiencies in the provision of water supplies or sewerage facilities to meet the needs of a proposed development, such a development may be considered premature
Surface Water	
IO6	It is an objective of the Council to ensure surface water systems are managed in a sustainable manner by encouraging the re-use of surface water where possible and to require that all new development proposals provide surface water drainage systems designed in accordance with Sustainable Urban Drainage Systems (SuDS)
IO7	It is an objective of the Council to ensure that surface water is adequately and safely disposed of in a manner compatible with achieving and maintaining 'salmonid water' quality in the receiving waters. (S.I. No. 293/1988: European Communities (Quality of Salmonid Waters) Regulations
Energy/Telecommunications	
IO8	It is an objective of the Council to support the appropriate expansion and upgrading of the Electricity Network to meet the needs of the LAP area.
IO9	It is an objective of the Council to support the appropriate expansion of the Metropolitan Area Networks (Communication System) to meet the needs of the LAP area.
IO10	It is an objective of the Council to support the introduction of appropriate new information and communication technologies to meet the needs of the LAP area
IO11	It is an objective of the Council to assess any future provision of telecommunications infrastructure having regard to National policies, as well as interests of social and economic progress; public health; environmental quality and the protection of amenities and local heritage.
IO12	It is an objective of the Council to support the appropriate extension of the gas network to meet the needs of the LAP area.
Development Contributions	
IO13	It is an objective of the Council to implement the Development Contribution Scheme and any Supplementary Contribution Schemes for future infrastructure upgrades for the LAP area.

5.7 Airport Infrastructure and Operations

Airport infrastructure and operations are essential to the continued and future development of an airport. The LAP seeks to balance the development of Ireland West Airport Knock as a key economic driver for the Region with the need to ensure the continued efficient and effective operation of the airport. In this regard policies and objectives have been formulated to safeguard the future expansion of the airport.

5.7.1 Airport Infrastructure and Operation Policies

Policy	
AP1	It is the policy of the Council to support the current and future operational, safety, technical and development requirements of the Airport, as deemed appropriate
AP2	It is the policy of the Council to promote appropriate land uses at Ireland West Airport Knock by implementing the recommendations of the report “Public Safety Zones and Noise Contour Maps for Ireland West Airport Knock”, prepared for Mayo County Council by APD Ltd

5.7.2 Airport Infrastructure and Operation Objectives

Objective	
AO1	It is an objective of the Council to support the extension to the existing runways and to safeguard the potential for future runway development, including additional runways as deemed appropriate
AO2	It is an objective of the Council to support the development of new taxi-ways as deemed appropriate
AO3	It is an objective of the Council to support the orderly expansion of aircraft apron areas, to provide for improved aircraft facilities, as deemed appropriate
AO4	It is an objective of the Council to encourage the on-going augmentation and improvement of appropriate freight / cargo facilities at Ireland West Airport Knock.
AO5	It is an objective of the Council to ensure that there are sufficient appropriately zoned lands on the airfield with good access to the aircraft apron area and to the road network to cater for freight / cargo and other aircraft apron facilities
AO6	It is an objective of the Council to encourage the on-going development of terminal facilities at Ireland West Airport Knock, as appropriate.

5.8 Heritage, Landscape and Environment

The location of the LAP area is predominantly rural in character and the implementation of the LAP to drive the development of the area as transportation and economic hub for the region could adversely effect the environment. Therefore the following policies and objective aim to protect all aspects of the environmental quality whilst facilitating appropriate development.

5.8.1 Heritage, Landscape and Environment Policies

Policy	
HP1	It is the policy of the Council to preserve, protect and enhance the character of the LAP area as defined by its natural heritage and biodiversity, its built environment, landscape and cultural heritage.
HP2	It is the policy of the Council to support and encourage a high standard of environmental awareness throughout the LAP area
HP3	It is a policy of the Council preserve, enhance and conserve designated sites such as Candidate Special Areas of Conservation and Special Protection Areas through the implementation of Article 6(3) of the EU Habitats Directive, and to subject any future plan or project arising from the Plan likely to impact on Natura 2000 or European Sites (SACs, SPAs), whether directly, indirectly or in combination with other plans or projects, to an appropriate assessment in order to inform the decision making process.
HP4	It is the policy of the Council to have regard to the Convention Biological Diversity and support the implementation of the National Heritage and Biodiversity Plan; the County Heritage Plan and Local Biodiversity Action Plan and to encourage the 'halt biodiversity loss by 2010 – and beyond' campaign in accordance with the 2006 EU Biodiversity Action Plan
HP5	It is the policy of the Council to prevent the spread of, aquatic and terrestrial, invasive and alien invasive species

5.8.2 Heritage, Landscape and Environment Objectives

Objective	
Archaeology	
HO1	It is an objective of the Council to protect the archaeological heritage and especially sites identified in the Record of Monuments and Places, National Monuments in the ownership or guardianship of the State and National Monuments that are subject to Preservation Orders and to safeguard the integrity of the archaeological sites in their setting.
HO2	It is an objective of the Council to require that planning applications within the zones of archaeological potential as outlined on the Record of Monuments and Places include an archaeological assessment set out in accordance with the requirements of the Mayo County Council. Any archaeological assessment shall also have regard to natural heritage legislation.
HO3	It is an objective of the Council to require that all significant planning applications (i.e. development of lands on 0.5ha. or more and 1km. or more in length) include an appropriate archaeological assessment in accordance with the requirements of the Council. Any archaeological assessment shall also have regard to natural heritage legislation
Natural Heritage	
HO4	It is an objective of the Council to require an ecological assessment, undertaken by a suitably qualified person, to inform decision making of all proposed significant planning applications, where it is considered that the proposed development may have an adverse impact on the environment of designated site.

HO5	It is an objective of the Council to ensure that any development proposals, alone or in combination with other developments, do not have an adverse impact on any Natura 2000 site in the wider area. The Council may require Appropriate Assessment in accordance with Article 6(3) of the EU Habitats Directive
Water Quality	
HO6	It is an objective of the Council to continue to protect all waters, including rivers, lakes and ground water, in this regard any proposed development adjacent or close to such waters shall be carefully assessed to ensure that there is no adverse impact to the water or to any other water body into which it flows.
HO7	It is an objective of the Council to implement the relevant policies and objectives outlined in the Western River Basin District Management Plan.
HO8	It is an objective of the Council to prevent deterioration of water bodies of good status and to improve those water bodies to status of at least good in accordance with national and EU legislation, within the Plan area
Flooding	
HO9	It is an objective of the Council to comply with the EU Floods Directive 2007/60/EC and S.I. No. 122/2010: European Communities (Assessment and Management of Flood Risks) Regulations
HO10	It is an objective of the Council to protect areas prone to flooding within the LAP area from inappropriate development and to ensure that all new developments do not result in an increased risk of flooding within the site or on other lands. 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
Landscape	
HO11	It is an objective of the Council to ensure that any proposed development is absorbed 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 LAP area.
HO12	It is an objective of the Council to promote the retention, were possible, of all features of historic, architectural or natural interest, such as stone walls, hedgerows and/or bridges or other features, as appropriate, within the LAP area.

5.9 Economic Activities

In order to support and promote the development potential of the Ireland West Airport Knock LAP area as a strategic economic/enterprise hub for the Region, the LAP area needs to attract inward investment without compromising the existing and potential growth of the Key towns of Mayo as identified in the Mayo County Development Plan 2008 – 2014.

5.9.1 Economic Policies

Policy	
EP1	It is the policy of the Council to promote and support the development of the LAP area as an attractive location for economic investment as well as a desirable place to work and visit

5.9.2 Economic Objectives

Objective	
EO1	It is an objective of the Council to support the development of appropriate activities within the LAP area in accordance with the land use objectives set out in Section 4.
EO2	It is an objective of the Council to support the location of tourist related activities, where it is demonstrated that such an activity would be appropriate to an airport location
EO3	It is an objective of the Council to protect the core function of LAP area as an airport and that future economic development is compatible with this aim.

Section 6 Development Management Standards and Guidance

6.1 Introduction

This section of the Local Area Plan details the Development Management Guidance and Standards that will be applied by Mayo County Council in the assessment of planning proposals in the LAP Area. They seek to ensure that all future development is in accordance with the proper planning and sustainable development and policies and objectives of the Local Area Plan and Mayo County Development Plan 2008-2014. The Standards set out in the Mayo County Development Plan 2008-2014 will apply for development proposals not addressed in this Section and in all cases, it should be consulted in conjunction with this Local Area Plan.

6.2 Sequential Approach to Development Proposals

In order to assist in the making of planning applications all development proposals will be required to demonstrate that the following sequential approach has been applied.

- a) does the development proposal comply with the land use zoning objectives and land uses categories generally permitted as set out in Table 6
- b) does the location for the type of development proposal comply with the Land Use Zoning Map?
- c) does the development proposal comply with:
 - Public Safety Zone requirements
 - Aerodrome Safeguarding relating to Obstacle Limitation Surfaces requirements
 - Noise Contour requirements

If the sequential approach set out above demonstrates that a development proposal is acceptable in principle, then the following development management standards and guidelines set out below shall be taken into consideration prior to submitting a planning application. The details required in the sections set out below are intended to assist applicants/developers in relation to the planning and design of any development proposal.

6.3 Environmental Management Report (EMR)

In order to assess the potential impact of any development proposal on the environmental quality of the area the requirement for the submission or otherwise of an EMR shall be agreed with Mayo County Council prior to the submission of a planning application.

The following subsections are a guide as to the content of the EMR. A list of guidance documents and reports are listed in Appendix 3 of this LAP as reference material that may aid in the compilation of the EMR. This is not an exclusive list of documents and others may also be referenced if considered appropriate to the relevant development proposal.

6.3.1 Contents of the Environmental Management Report

The EMR shall examine the development proposal through all three phases of the development process, i.e. planning phase, construction phase and operational phase. The EMR shall examine the potential impact on the environment through all three phases of the development process.

The environmental factors to be examined in the EMR relate to the environmental factors of the Strategic Environmental Assessment process.

Environmental Factors		
Biodiversity, Flora and Fauna	Fresh Water Quality	Soils and Geology
Air, Climate and Energy	Noise	Flooding
Drinking Water and Waste Water	Archaeology and Architectural Heritage	Waste Management
Landscape		

The EMR should be set out in accordance with the details below:

- description of the development proposal
- Identification of the environmental factors affected by the development proposal. If it is demonstrated that the development proposal does not affect an environmental factors, this should be clearly shown in the EMR.
- identification of the assessments required under each environmental factor
- inclusion of all assessments
- details of specific mitigation measures and monitoring procedures that will be put in place for the development proposal for all three phases of the development process
- details of emergency responses in the event of failure of any proposed mitigation measure.

The following is a guide as to the type of assessment or plan that may be required under each environmental factor which should be included as part of the EMR. Other reports/assessments should also be included if relevant to the development proposal.

Environmental Factor	Assessment/Plan
Biodiversity, Flora and Fauna	<ul style="list-style-type: none"> • Ecological Assessment (See 6.3.2)
Soils and Geology	<ul style="list-style-type: none"> • Peat Management and Disposal Plan (See 6.3.3 & Appendix 2) • Geotechnical Assessment (See 6.3.4)
Fresh Water Quality	<ul style="list-style-type: none"> • Surface Water Management Plan (See 6.3.5)
Air, Climate, Energy	<ul style="list-style-type: none"> • Air, Climate and Energy Factors (See 6.3.6 & 6.4) • Dust Minimisation (See Appendix 3)
Noise	<ul style="list-style-type: none"> • Guidance Notes (See Appendix 3)
Flooding	<ul style="list-style-type: none"> • Strategic Flood Risk Assessment for the Ireland West Airport Knock LAP • Guidance Notes (See Appendix 3)
Drinking Water/Wastewater	See 6.6 & 6.7
Waste Management	Construction and Demolition Waste Plan (See Appendix 3) Replacement Waste Management Plan for Connacht Region 2006-2011 Operational Waste Management Plan (See 6.3.7)
Archaeology/	Archaeological Assessment (See 6.3.8)

Architectural Heritage	Architectural Options (See 6.4)
Landscape	Landscape Plan (See 6.4.2.2)

6.3.2 Ecological Assessment

Development proposals that include an ecological assessment as part of the EMR, shall generally be in accordance with the guidance set out below.

The assessment shall be carried out by suitably qualified persons and any surveys shall be conducted at the appropriate time of year.

Ecological Assessment
<p>The Ecological Assessment should include the following details:</p> <ol style="list-style-type: none"> 1. a detailed habitat map which shall include an overlay of the development proposal. Scale to be agreed with Planning Authority. 2. written descriptions of all habitats within the receiving environment. Habitat mapping should be carried out in accordance with Heritage Council draft Guidelines for Survey of Habitats or equivalent standard. Habitats should be identified, described and mapped to level 3 of the Fossit¹ (2000) classification system. EU Habitats Directive² Annex I Habitats should also be referenced. 3. key species of flora and fauna shall be identified, with particular emphasis on any rare, protected or annexed species by reference to the following: <ul style="list-style-type: none"> • Irish Red Data Books 1 (plants) and 2 (animals)³ • Annex I of the EU Habitats Directive • Annex I of the EU Birds Directive⁴ • Red or amber listed bird species in the current list of Birds of Conservation Concern in Ireland⁵ 4. reference to any previous studies and old ecological records for the site. 5. evaluation of ecological significance of habitats and species occurring within the site; 6. assessment of the likely impact of the proposed development both during construction and afterwards on habitats and rare or protected species within and adjacent to the site and a statement regarding the significance of these impacts. <p>Where appropriate, the report should include mitigation proposals. It should be shown that these are fully integrated into the design and layout and landscaping of the proposed development. The following should be provided:</p> <ol style="list-style-type: none"> a. evidence of how mitigation will be secured and implemented and by whom; b. evidence of the degree of confidence in likely success of proposed mitigation; c. timescale, relative to the plan or project, for implementation of mitigation or completion; d. evidence as to how the measures will be monitored and, should mitigation failure be identified, how that failure will be rectified.

¹ Fossitt, J.A. (2000) *A Guide to Habitats in Ireland*. Heritage Council, Kilkenny.

² Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (as amended)

³ <http://www.npws.ie/en/PublicationsLiterature/RedLists/>

⁴ Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (as amended)

⁵ <http://www.birdwatchireland.ie/>

6.3.3 Peat Management and Disposal Plan

Any development proposal that requires peat or vegetation removal shall be accompanied by a project specific Peat Management and Disposal Plan as part of the EMR. This shall be in accordance with the Guidance Peat Management and Disposal Plan outlined in Appendix 2 and the brief description set out below.

Peat Management and Disposal Plan

The plan should identify arrangements to be made for:

- the management of construction works to minimise the potential for peat slides
- means and locations for temporary storage of peat pending use in reinstatement works
- measures for the disposal of surplus peat
- measures for the restoration of any disused peat cuttings; and
- whenever necessary, confirmation that the required consents exist from owners, tenants and any relevant regulatory body for the proposed works.

The plan should also include measures for the removal of subsoil and bedrock

(Full Details of the Peat Management and Disposal Plan guidance is in Appendix 2)

6.3.4 Geotechnical Assessment

Where development proposals involve the excavation of peat and soft soils on slopes, a geotechnical assessment of the potential risk of landslides should be included as part of the EMR.

Geotechnical Assessment

- the first stage of the assessment should consist of a desk top study and site visit undertaken by a suitably qualified person
- pending the findings, further ground investigation may be required to determine factors such as the steepness of slopes, moisture content of peat, depth of peat and the nature of the layer under the peat layer.
- where necessary, measures shall be incorporated into the development proposal by a geotechnical specialist to prevent landslides.

6.3.5 Surface Water Management Plan

A surface water management plan should be prepared for any proposed development within the LAP area, as part of the EMR. This should include measures to ensure that the development proposed alone or cumulatively with other proposals will not adversely affect the water quality of the area. The Surface Water Management Plan should focus on all stages of the development process, i.e. planning phase, the construction phase and the operational phase.

Surface Water Management Plan

The Surface Water Management Plan should include:

- details of Surface Water Systems which shall be designed in accordance with SUDS (Sustainable Urban Drainage Systems) and Surface Water Attenuation provided in order to restrict flows from development to Greenfield run off rates. Waste oils should not be disposed of in public or private sewer systems or discharged to watercourses. All surface water drainage systems should be fitted with petrol/oil interceptor traps.
- details relating to capacity predictions to ensure that the capacity of existing surface and ground waters are sufficient to accept new/increased discharges with no deterioration in current water body status
- details of drainage systems which should be designed to limit any potential of contamination from surface water runoff from reaching underlying soil and groundwater.
- other best practice techniques could incorporate the following measures:
 - to reduce runoff and sediment control
 - contamination prevention

6.3.6 Air, Climate and Energy Factors

The following factors should be considered in the design of all development proposals and should be included as part of the EMR.

Climate and Air Quality

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:

- combine energy efficiency measures with renewable energy technologies and resource consumption plans and examine features such as:
 - building fabric
 - heating
 - hot water controls
 - combined heat and power
 - ventilation and air conditioning
 - powering pumps and fans
 - lighting controls
 - office/catering equipment
 - transport requirements

6.3.7 Operational Waste Management Plan

The EMR should highlight any measures for the control and management of waste during the operational phase of any development proposal

Operational Waste Management Plan

Details should include measures to minimise waste production and maximise recycling and recovery through the introduction of sustainable waste management practices in all development proposals. Estimates should be indicated for each of the following categories of waste reduction:

• % of waste recycled	Target	48% recycled
• % of energy recovery	Target	33% energy recovery
• % to landfill	Target	19% to landfill

and outline on-going measures/monitoring procedures to ascertain if the targets above can be achieved and/or improved.

6.3.8 Archaeological Assessment

Development proposals have the potential to impact on the archaeological heritage of sites identified in the Record of Monuments and Places, National Monuments, which are in the ownership or guardianship of the State are subject to Preservation Orders. Therefore in order to safeguard the integrity of the archaeological sites in their setting in the landscape an archaeological assessment shall be submitted as part of the EMR for:

- planning applications that fall within the zones of archaeological potential as outlined on the Record of Monuments and Places
- all significant planning applications (i.e. development of lands on 0.5ha or more than 1km or more in length)

All archaeological assessments should be undertaken by a suitably qualified archaeologist and set out in accordance with the requirements of Mayo County Council and shall also have regard to natural heritage legislation.

Archaeological Assessment

The first part of the assessment should consist of a site visit and a desk top study undertaken by a suitably qualified archaeologist. Pending the findings of the assessment, one and/or more of the following may be required as part of any development proposal within the Plan area:

- geophysical and/or other invasive surveys (including architectural survey)
- licensed pre-development testing
- licensed archaeological excavation
- archaeological monitoring of ground works

A full underwater Archaeological Assessment (where appropriate) should also be completed.

The Archaeological Assessment should establish the extent of archaeological material associated with

the archaeological site or monument and the potential impacts (if any) on the site or monument. The assessment should also define the buffer area or area contiguous with the archaeological site or monument which will preserve the setting and visual amenity of the site or monument.

The area of the archaeological site or monument and its buffer zone should not be included as part of the open space requirement demanded of a specific development but should be additional to the required open spaces.

Should an archaeological site or monument lie adjacent to or within the open space requirement for a development, a conservation plan for that archaeological site or monument should be required as part of the landscape plan for that development.

All archaeological sites and monuments included in the Record of Monuments and Places (RMP), any sites and features of historical and archaeological interest and any subsurface archaeological features that may be discovered during the course of infrastructural/development works should be preserved *in-situ* or by record.

6.4 Site Layout and Building Design Guidelines

6.4.1 Objectives of the Design Guidelines

The guidelines are primarily for development within the Airport Development Zone which is considered the most suitable location for an enterprise/business park development. The general concepts set out below should also be considered for all development proposals within the LAP. A design statement should be included with all planning applications to demonstrate that the site layout and building design guidelines have been incorporated into the development proposal.

The design guidelines represent a preferred set of standards that contribute to achieving quality development, in particular:

- 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
- to accomplish development which is responsive to the context, in particular the landscape character
- 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.
- to encourage sustainability objectives through environmentally responsible architectural design
- 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

The overall aim of the guidelines is to establish a set of clear standards to guide future development at Ireland West Airport Knock in respect of the design of the site and the buildings.

6.4.2 Site Design

6.4.2.1 Access, Public Realm and Permeability

Infrastructure should allow for the safe and efficient movement of vehicles and pedestrians. Access points should be kept to a minimum and should provide safe ingress/egress for vehicles and pedestrians/cyclists. The permeability of the site is influenced by a number of factors including the siting of the infrastructure and buildings, building setbacks, landscaping setbacks, tree planting and landscape design.

The layout and design of any proposed development will give consideration to the needs of the aged, people with disabilities and people with children. Footpaths and public areas should be accessible and safe for people with disabilities and/or reduced mobility by ways of footpaths, location of crossings etc.

Public Realm objectives

- accessible public open space that responds to key landform features such as high points and areas of water retention
- landscaping theme that establishes identity and local character designed to create an open parkland setting
- the layout should favour the use of more sustainable forms of transport (cycle, bus) for circulation throughout the LAP area.
- vehicular parking areas should not be a dominate feature, with footpaths and cyclesways linking all buildings and public areas.

The amenity and appearance will be established and maintained by adherence to these design guidelines and the siting and design of the buildings and other structures should be such as to minimise changes to the existing topography.

6.4.2.2 Landscaping

A landscape plan shall be submitted showing details of levels, materials, plant species, spacing and size, lighting and irrigation. Irrigation of areas using recycled water is encouraged. Planting of native species is encouraged, and no alien invasive species shall be permitted. Where possible existing vegetation should be retained. Boundary treatments should act as noise buffers where necessary, the use of green walls and green roofs shall be encouraged to further screen development on the landscape and the use of retention ponds will be encouraged to enhance the public realm. All landscaping proposals shall be designed so as that it does not interfere with aircraft safety, for example the attraction of increased bird numbers may interfere with aircraft safety and operations.

6.4.2.3 Vehicle Access and Service Areas

Adequate provision for on-site parking for employees and visitors should be provided, based on the nature and scale of activities planned. Visitor parking shall be located convenient to administration and office areas. HGV parking areas shall be separate from car parking areas.

6.4.2.4 Storage and Service Areas

All service areas, storage areas and waste disposal areas must be adequately screened from public view by proper siting and screening with fences, courtyard walls or landscaping. Areas

screened from public view should be provided for refuse containers and similar equipment, and should be accessible for servicing vehicles.

6.4.2.5 Signage

Directional Signage

In order to address the existing deficiencies in airport directional signage Mayo County Council will engage with the NRA to develop an advance directional signage scheme on all National Routes appropriate for an international airport.

Airport Development

One identification only sign shall be located at each entrance to the development lands in the Airport Development Zone in order to list all business/companies at this location... The colour, form and finish of the sign shall be compatible with colours and materials used in the building forms. Building facades should incorporate an area for sign placement.

6.4.2.6 Lighting

Lighting of buildings, signs and landscaping will be incorporated into the structure or landscaping so that the lighting is discreet. Light standards and bollards shall be a contemporary style. All car parking and access ways shall be illuminated. See Section 6.5 for best practice guidance for lighting

6.4.3 Building Design

6.4.3.1 Context

The orientation of buildings should take advantage of solar gain and should respond to the context of the airport, current infrastructure and the topography.

6.4.3.2 Massing and Form

Contemporary building design will be encouraged. There should be consistency in terms of height and scale across the development zone. A mix of building types ranging from incubator units to larger units is advised.

6.4.3.3 Architectural Appearance

Buildings should be set out to form high quality public spaces within the development zone. The buildings should allow for some transparency to the activities of the interior so as to afford more visual interest. Building materials should be of a high quality.

6.4.3.4 Sustainability

The use of green building products and sustainable energy for individual buildings or collectively will be encouraged. The design should take advantage of solar gain and the use of renewables including photovoltaics, wind and rain harvesting.

6.5 Public Lighting

Light pollution is caused by any adverse effect of artificial light, including light trespass, sky glow and glare. All can be eliminated or minimised by good practice lighting design, selecting well designed lanterns and ensuring effective maintenance. The following good practice should be considered for all development proposals to:

- adequately light the area or object without using more light than necessary
- provide safety for all users, whether motorists, services, pedestrians or cyclists
- eliminate or minimise glare and excessive lighting,
- prevent light trespass
- minimise sky glow
- flexibility in the choice of light fixtures to allow for aesthetic considerations
- use of energy efficiency.
- all lighting should not impact on the aircraft safety.
- signage should be lit in a downward direction to avoid upward direct lights

6.6 Waste Water Treatment

The waste water treatment capacity requirements of new development proposals within the Ireland West Airport Knock LAP area must not exceed existing waste water treatment capacity unless additional capacity is provided within the LAP area. The Council may require that the design capacity of such connections is in excess of that required thus ensuring that future phases of development on adjoining lands is adequately catered for. The Council may require that all new development proposals pay a financial development contribution to cover the cost of future upgrades to the sewerage facilities of the LAP area.

6.7 Drinking Water

The drinking water capacity requirements of new development proposals within the Ireland West Airport Knock LAP area must not exceed existing drinking water capacity unless additional capacity is provided within the LAP area. The Council may require that the design capacity of such connections is in excess of that required thus ensuring that future phases of development on adjoining lands is adequately catered for. The Council may require that all new development proposals pay a financial development contribution to cover the cost of future upgrades to the drinking water facilities of the LAP area.

6.8 Surface Water Drainage

Surface Water Systems shall be designed in accordance with SuDS (Sustainable Urban Drainage Systems) and Surface Water Attenuation provided in order to restrict flows from development to Greenfield run off rates. Waste oils should not be disposed of in public or private sewer systems or discharged to watercourses. All surface water drainage systems should be fitted with petrol/oil interceptor traps.

6.9 Road Access and Safety

Generally, it is the policy of the Council to discourage the proliferation of access points onto the public road, particularly in areas where the maximum speed limit applies. The Council encourages and promotes shared access points in all circumstances. To ensure that new access points do not cause a road safety problem or that the increase in traffic does not cause deterioration in environmental quality, the following requirements shall be submitted with a planning application where applicable:

- a Road Safety Audit shall be carried out in respect of all proposed significant developments and submitted as part of a planning application. A significant

development would be a development, which generates 40 Traffic Movements per day

- a Traffic Impact Assessment shall be carried out in respect of proposed significant developments whereby traffic generated by the development exceeds 10% of the existing traffic level on the road, or 5% where the road is already congested
- no development will be permitted within the public right of way that would compromise road safety i.e. memorials, concrete bollards, signs and large boulders

In order to comply with the requirements of the Environmental Noise Regulations; 2006., development proposals within the zone of influence of existing national roads or of planned new national roads must identify and implement noise mitigation measures where additional traffic generated by the development would be in breach of noise design goals on national roads for sensitive receptors exposed to traffic noise. The cost of implementing mitigation measures shall be borne by the developer.

6.10 Parking Requirements

The Mayo County Council requirements in relation to car parking and bicycle parking are set out in Section 4.3 of the Mayo County Development Plan 2008-2014.

6.10.1 Car Parking

The provision of car parking spaces should be within or convenient to the site of the development. The provision should be based on the extent to which the development is likely to generate demand for parking spaces. The Parking Standards are set out in Table 4.8 of the Mayo County Development Plan 2008-2014

The Council may require the submission of a Mobility Management Plan with planning applications where developments include substantial parking requirements. Complimentary or shared usage of parking will be encouraged, especially where hours of use are at variance with each other. In addition to car parking standards, sufficient space will be required within the curtilage of the site for all service vehicles involved with the proposed development.

6.10.2 Bicycle Parking

The provision of a minimum level of bicycle parking facilities will required for new development or change of use applications. The bicycle parking standards are set out in Table 4.9 of the Mayo County Development Plan 2008-2014. Where the provision of bicycle parking facilities are intended for use by the staff of a particular development, stands should be located within the curtilage of the development to ensure safety and security. Bicycle stands for use by visitors should be located to maximise convenience to the entrance of buildings and positioned so as to ensure safety, security and supervision. The provision of bicycle parking facilities should be provided, where possible, at existing buildings and transport nodes.

6.11 Implementing the LAP – Making it Happen

The function of this Local Area Plan is to guide development at Ireland West Airport Knock over the plan period. While Mayo County council has a key role in ensuring that policies and objectives contained in the plan area achieved, the achievement of these is also dependent on the financial and human resources of others, especially the private sector.

External factors such as the economic climate, political support, allocated local authority funding, and the availability of funding from other sources will be influential if the objectives are to be achieved within the life of the Plan. Mayo County Council will require that developers incorporate the objectives of this Plan into their development proposals. Other objectives, particularly key physical infrastructural elements may require Government funding and support. Where appropriate, Mayo County Council will seek financing from specified sources, both public and private sector. Mayo County Council intends to exercise all of its legal powers to ensure the objectives are implemented. This includes using compulsory acquisition powers where necessary to support site assembly or to secure the realisation of objectives in the LAP.

Land Use Zoning
(Land Use Zones; Land Uses Generally Permitted; Land
Use Zoning Map)

Land Use Zones

Table 6 shows the Zoning Objectives for each Land Use Zone and uses generally permitted in each zone. Other uses not listed in Table 6 may be permitted only if it demonstrated that they do not conflict with the primary land use zoning objective.

Table 6: Land Use Zones and Land Uses Generally Permitted

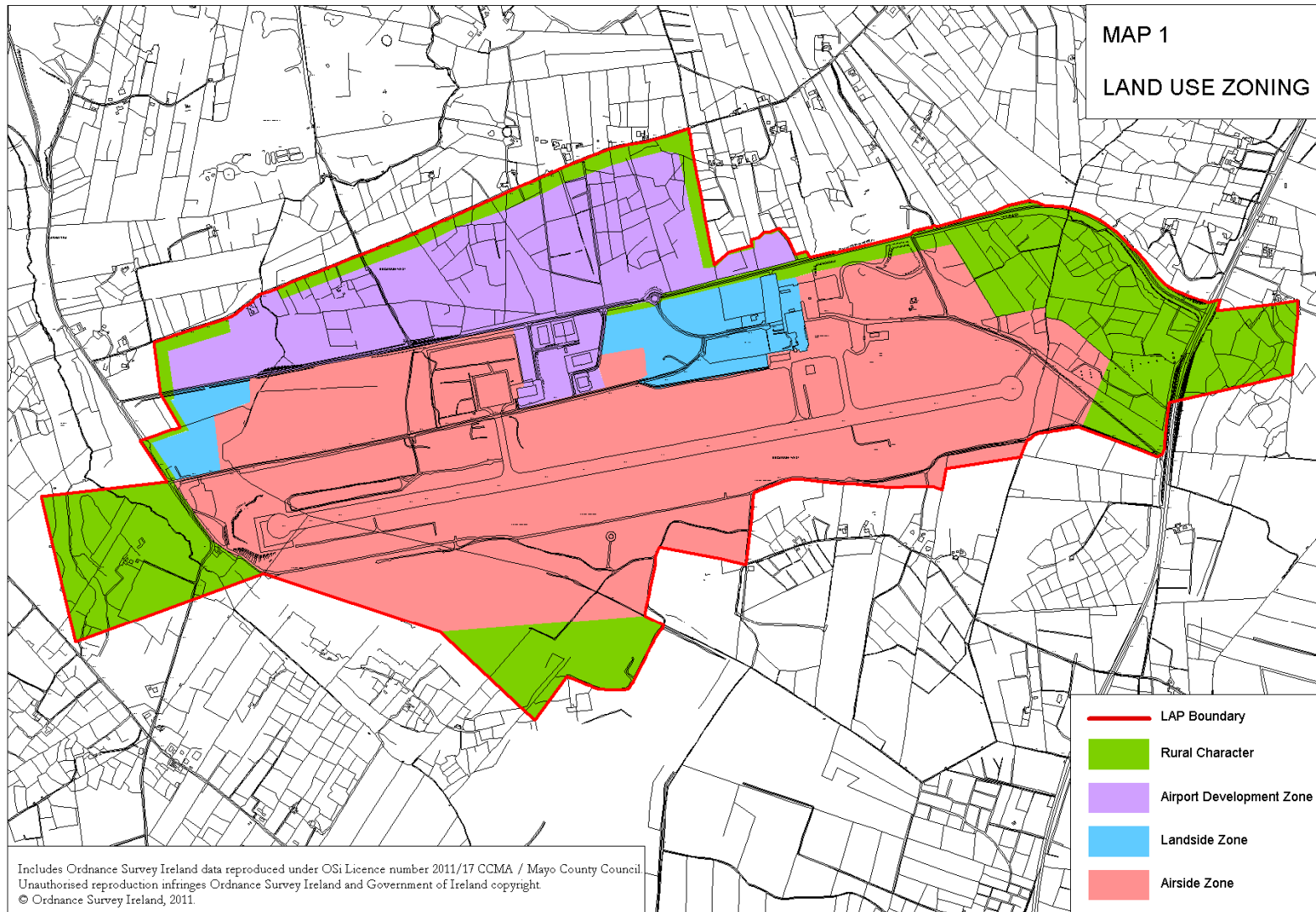
Land Use Zone Objectives	Land Uses Generally Permitted
<p>Airside Zone Objective: To protect, improve and develop the Airside Zone of Ireland West Airport Knock to its full potential and to provide for all facilities necessary, incidental or ancillary to Airport Operations</p>	<p>(uses listed are for any airside requirement of the relevant land use)</p> <ul style="list-style-type: none"> • aircraft terminal buildings, aprons and taxiways • aircraft maintenance, supply and manufacture, including modification, refurbishment and painting • airline, aircrew or pilot training centres/schools and accommodation • aviation and vehicle fuel storage facilities • avionics, engine or aircraft parts, maintenance, supply and manufacture • airport equipment and operational infrastructure, maintenance, supply and manufacture • aircraft hangerage Area • aircraft reclamation/dismantling facilities • cargo Facilities • airport operational infrastructure, terminal services and signage • flight packaging, provision services and supply units, including ramp services • in flight, hotel and terminal catering preparation and storage facilities • internal surface access and infrastructure including ancillary car parking • service vehicle maintenance • vehicle valeting operations • Retail and other enterprises within the terminal consistent with the needs of passengers • appropriate renewable energy projects (must demonstrate they do not compromise or interfere with aircraft operations and/or safety)
<p>Landside Zone Objective: To protect, improve and develop the Landside Zone of Ireland West Airport Knock to its full potential and to provide for all facilities necessary, incidental or ancillary to Airport Operations and to facilitate accessibility to the Airport Campus.</p>	<p>(uses listed are for any landside requirement of the relevant land use)</p> <ul style="list-style-type: none"> • aircraft maintenance, supply and manufacture, including modification, refurbishment and painting • airline, aircrew or pilot training centres/schools and accommodation • aviation and vehicle fuel storage facilities • avionics, engine or aircraft parts, maintenance, supply and manufacture • airport equipment and operational infrastructure, maintenance, supply and manufacture

	<ul style="list-style-type: none"> • airport operational infrastructure, terminal services and signage • car hire operations and associated car parking requirements • flight packaging, provision services and supply units, including ramp services • internal surface access and infrastructure including car parking associated with the main activities in the Landside Zone • service vehicle maintenance • vehicle valeting operations • passenger car parking • retail and other enterprises within the terminal consistent with the needs of passengers • appropriate renewable energy projects (must demonstrate they do not compromise or interfere with aircraft operations and/or safety) • infrastructure projects
<p>Airport Development Zone Objective: To facilitate appropriate development in order to strengthen the strategic role of Ireland West Airport Knock as a key economic/enterprise hub for the Region, whilst protecting the future operations of the Airport.</p>	<ul style="list-style-type: none"> • To provide a high quality enterprise/business park development, in which the following uses are considered appropriate: <ul style="list-style-type: none"> ○ airline sale reservation and booking offices, including call / e-mail centres ○ airline, aircrew or pilot training centres / schools ○ avionics, engine or aircraft parts, maintenance, supply and manufacture ○ airport equipment and operational infrastructure, maintenance, supply and manufacture ○ car hire operations and associated car parking requirements ○ flight packaging, provision services and supply units, including ramp services ○ in flight, hotel and terminal catering preparation and storage facilities ○ internal surface access and infrastructure including car parking associated with the main activities in the Airport Development Zone ○ offices ○ warehousing (non-retail uses associated with locating beside an airport), cold stores and offices for airfreight handlers, forwarders and agents including parcels or post services ○ businesses in sectors that contribute to regional employment (e.g.) Life Sciences, ICT, renewables, clean technology, light engineering, media and the arts ○ firms that are regular users of the airport ○ firms for whom the airport is seen as a

	<p>prestigious location (e.g. Life Sciences or Information and Communications Technology)</p> <ul style="list-style-type: none"> ○ retail and other enterprises serving only the daily needs of those employed in the Airport Development Zone ● tourist related activity where the need to locate beside an airport is demonstrated ● hotel ● businesses in sectors that contribute to regional employment, excluding retail ● distribution services where it is demonstrated that suitable facilities are not available in the surrounding towns ● Utility Infrastructure projects ● appropriate renewable energy projects (must demonstrate they do not compromise or interfere with aircraft operations and/or safety)
<p>Rural Character Zone</p> <p>Objective: To protect the setting, character and environmental quality of Ireland West Airport Knock</p>	<ul style="list-style-type: none"> ● aircraft navigation aids ● appropriate recreational ● agricultural uses ● signage ● appropriate renewable energy projects (must demonstrate they do not compromise or interfere with aircraft operations and/or safety)

The Land Uses Generally Permitted are acceptable in principle, but must comply with the requirements of the Public Safety Zones ;Aerodrome Safeguarding relating to Obstacle Limitation Surfaces and Noise Contours

Other uses may be permitted, if it is demonstrated that they do not conflict with the primary land use zoning objective. Due to the nature of the land use zones proposed, some categories of land use may straddle the land uses zones, and this would be permitted where it is demonstrated necessary.



Public Safety Zones

Public Safety Zones

Public Safety Zones (PSZ)

Mayo County Council retained Airport Planning and Development Ltd, in association with DNV Technology and Bickerdike Allen Partnership to prepare public safety zone maps for Ireland West Airport Knock. The methodology used was taken from the approach recommended by the Department of Transport and prepared by ERM in 2005, for the preparation of Public Safety Zones for Dublin Airport, Cork Airport and Shannon Airport.

The report recommends a policy that relates to permissible use to the third party risk from the possibility of aircraft crashing near an airport. The extent of suitable Inner and Outer Public Safety Zones have been determined for Ireland West Airport Knock and are shown in Map 2 for the wider county and Map 3 in relation to the Land Use Zoning for Ireland West Airport Knock.

The Inner PSZ extends a maximum of 1325m from the runway thresholds and is never more than 96 metres wide. The Outer PSZ extend a maximum of 5647m from the runway thresholds and is never more than 261m wide

Both the inner and outer public safety zones extend beyond the boundary of the LAP area. The report give guidance on the uses normally permitted within the both public safety zones but not all uses are permissible within the LAP Boundary. This appendix sets out the uses that would normally be permitted within the LAP boundary.

Inner Public Safety Zones

The extent of permitted development is set below:

- 1) no further development shall be permitted and existing development can remain.
- 2) the only exceptions for permitted development in the inner PSZ are:
 - developments where persons are not expected to be present.
 - long stay car parks (i.e.) greater than 24 hours, provided that persons are normally expected to park their car and then immediately leave the car park development. Buildings associated with car parks are subject to the guidance in 1 above.
 - roads and railways where vehicles and passenger trains / trams are not expected to be stationary. For example, road vehicles can be expected to be stationary at major road intersections, junctions and traffic lights. Therefore major road intersections, junctions, traffic lights and similar should not be permitted in the inner PSZ

Outer Public Safety Zones:

The extent of permitted development within the LAP is set out below and based on the uses permitted in the ERM Report for Dublin, Cork and Shannon Airports.

- 1) Existing Development shall remain and new development shall be considered with following density provisions (including extensions or change of uses):
 - **Working Premises** factories, offices and facilities where persons are expected to congregate, such as railway stations. etc
≤110 persons per half hectare

- **Limited Use** use not exceeding (approximately) a maximum of 12 hours in one week, Sunday markets, car boot sales day fairs etc ≤ 220 persons per half hectare

2) exceptions to permitted development in the outer PSZ

In most cases, the guidance given in 1 above is sufficient to identify whether a proposed development should be permitted in the outer PSZ. However, there may be cases, in exceptional circumstances, where it is judged that developments socio-economic benefits (etc) outweigh the 'safety risk', and that it is impractical for such a development to be located elsewhere:

- **Airport Terminals**

To ensure risks to people are as low as reasonably practicable, it is desirable to locate airport terminals outside Public Safety Zones. However, this may not be practicable and there are precedents to accept a greater, but tolerable risk, where persons gain a direct benefit from the activity presenting the risk. In the case of an airport terminal, all those involved with using the terminal are receiving a direct benefit (i.e. related to employment or travel) and therefore an annual individual risk greater than 1 in one million (i.e. corresponding to the extent of the outer PSZ) but less than 1 in 100,000 (i.e. corresponding to the extent of the inner PSZ) is considered tolerable. Hence, location of an airport terminal in the outer PSZ is judged tolerable.

- **Extensions to Existing Developments**

Extensions to existing developments are permitted. This is provided the development is a permitted type and if extended does not result in the density figures listed in 1 above being exceeded.

- **Roads and Railways**

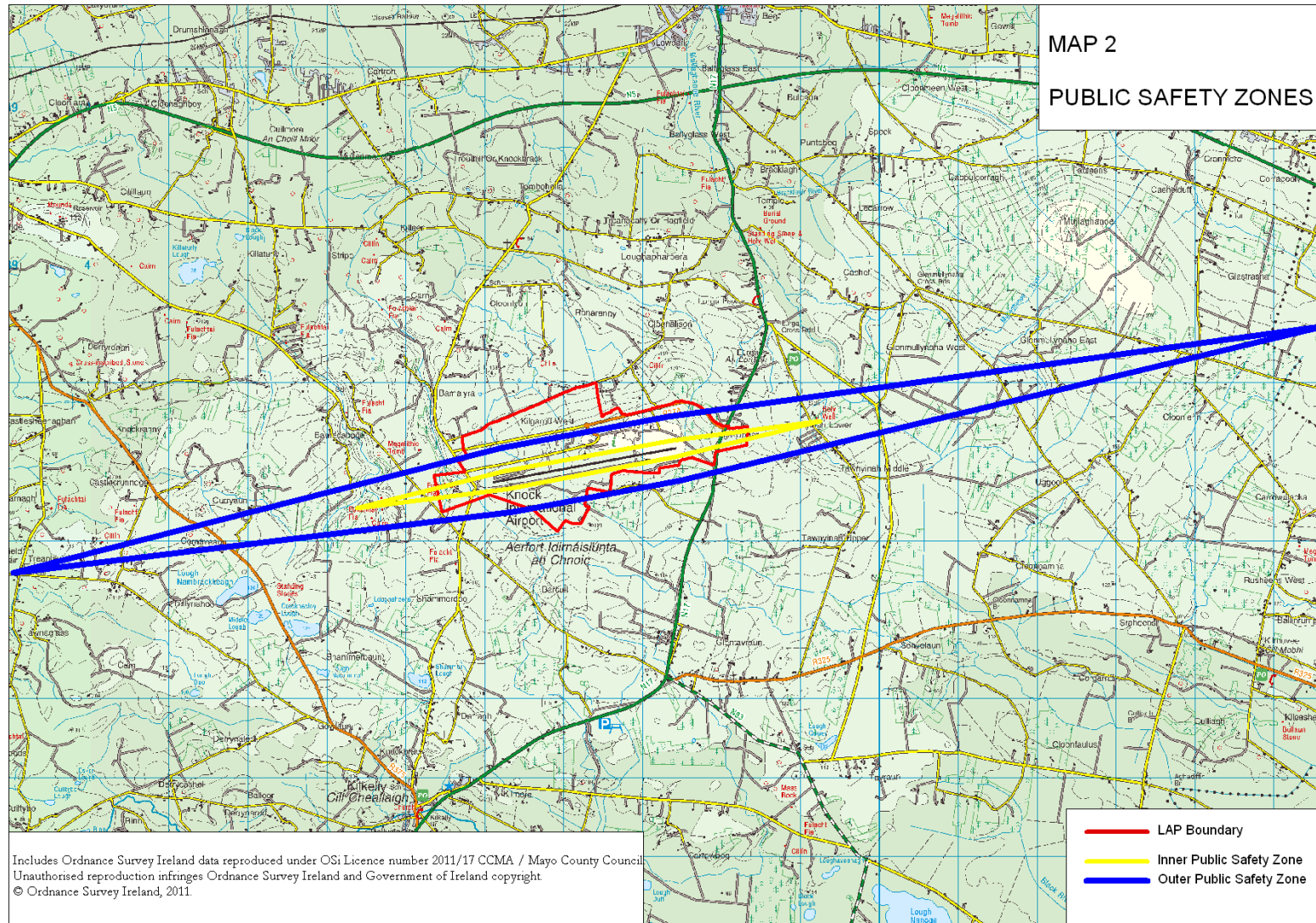
Roads and railways are permitted in the outer PSZs, including major road and rail intersections, junctions and traffic lights.

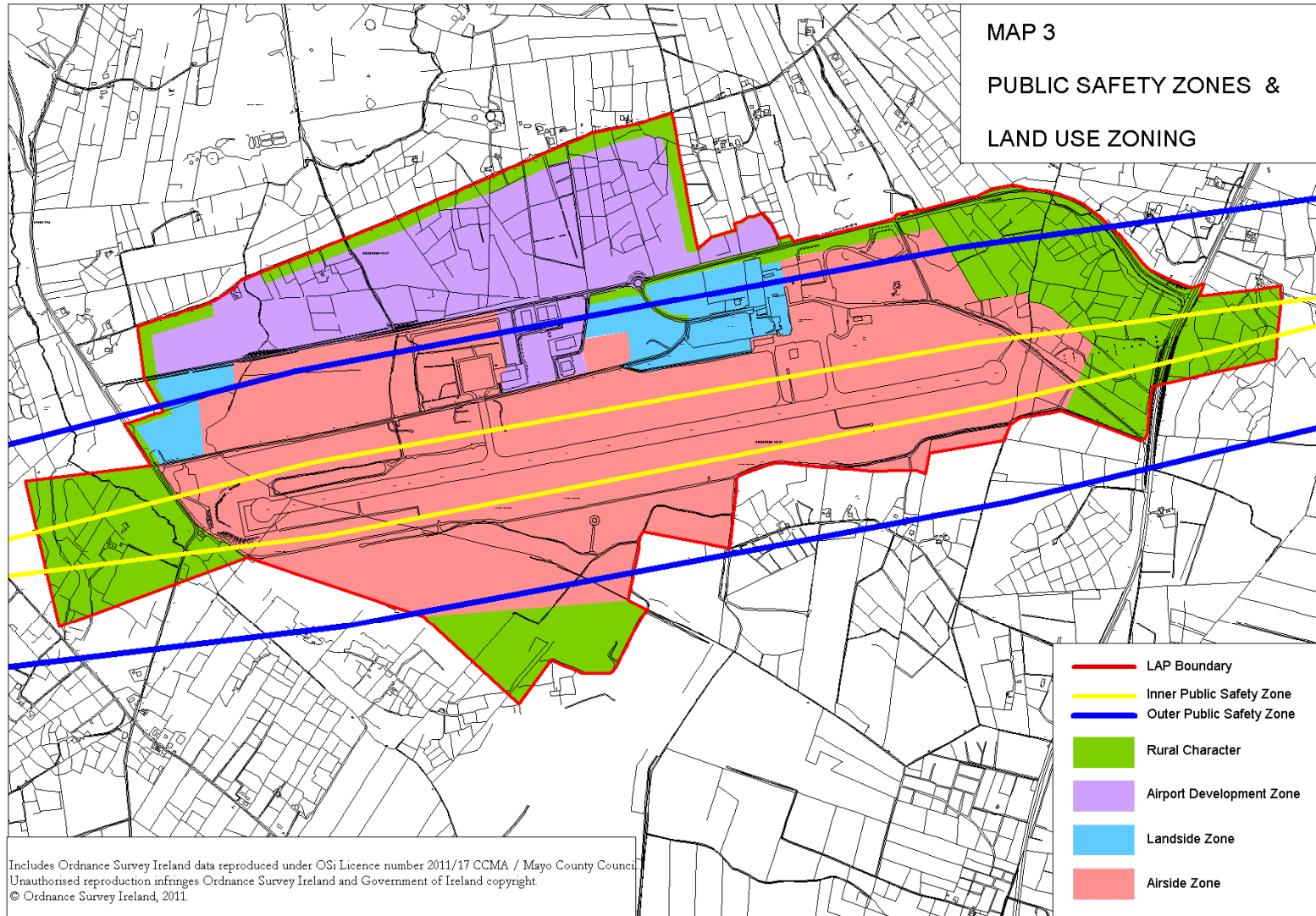
- **Bus and Rail Terminals**

Bus and rail terminals are permitted in the outer PSZs provided the density does not exceed 110 persons per half hectare

- **Car Parks**

Car parks are permitted in the outer PSZs. This is provided that persons are normally expected to park their car and then leave the car park development. Building associated with car parks are subject to the guidance given in 1 above.





Aerodrome Safeguarding relating to Obstacle Limitation Surfaces

**Aerodrome Safeguarding
relating to
Obstacle Limitation Surfaces**

Aerodrome Safeguarding






The Obstacle Limitation Surfaces for Ireland West Airport Knock in accordance with the International Civil Aviation Organisation (ICAO) Publication Annex 14, Volume 1, 'Aerodromes' is as follows and indicated on Map 4 and 4a:

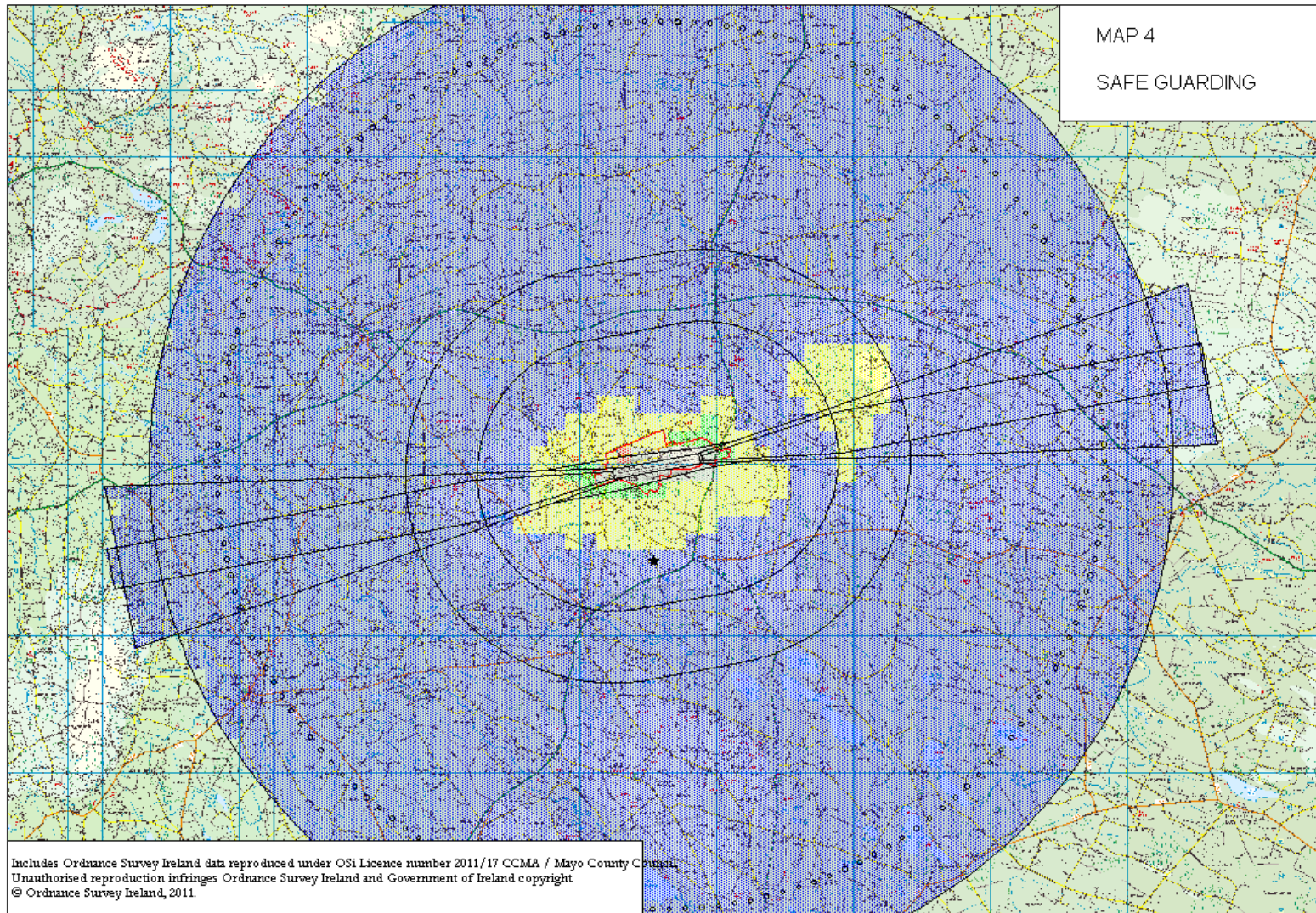
- The approach surface which commences at 60m from the runway threshold and slopes upwards at a gradient of 2%. The surface is 300m wide, centred on the runway centreline and splays at 15%. It extends to a distance of 15km and ceases to rise once it reaches a height of 150m
- The transitional surface which slopes upwards at a gradient of 14.3% away from each side of the runway and the approach surface. It commences 150m from the runway centre line or edge of the splay section of the approach surface, and extends to a maximum height of 45m
- The inner horizontal surface which has a radius of 4000m centres on the airport and extends to a height of 45m
- The conical surface which commences at the outer edge of the inner horizontal surface (at a height of 45m) and extends upwards at a gradient of 5% until it reaches a height of 100m (145m) above the aerodrome
- A 13km radius exclusion zone around the airport has been adopted in the Mayo County Development Plan 2008 – 2014. This exclusionary zone defines an area within which no new conventional or residual landfills shall be constructed. This restriction on the construction of landfills is in line with the ICAO recommendations.

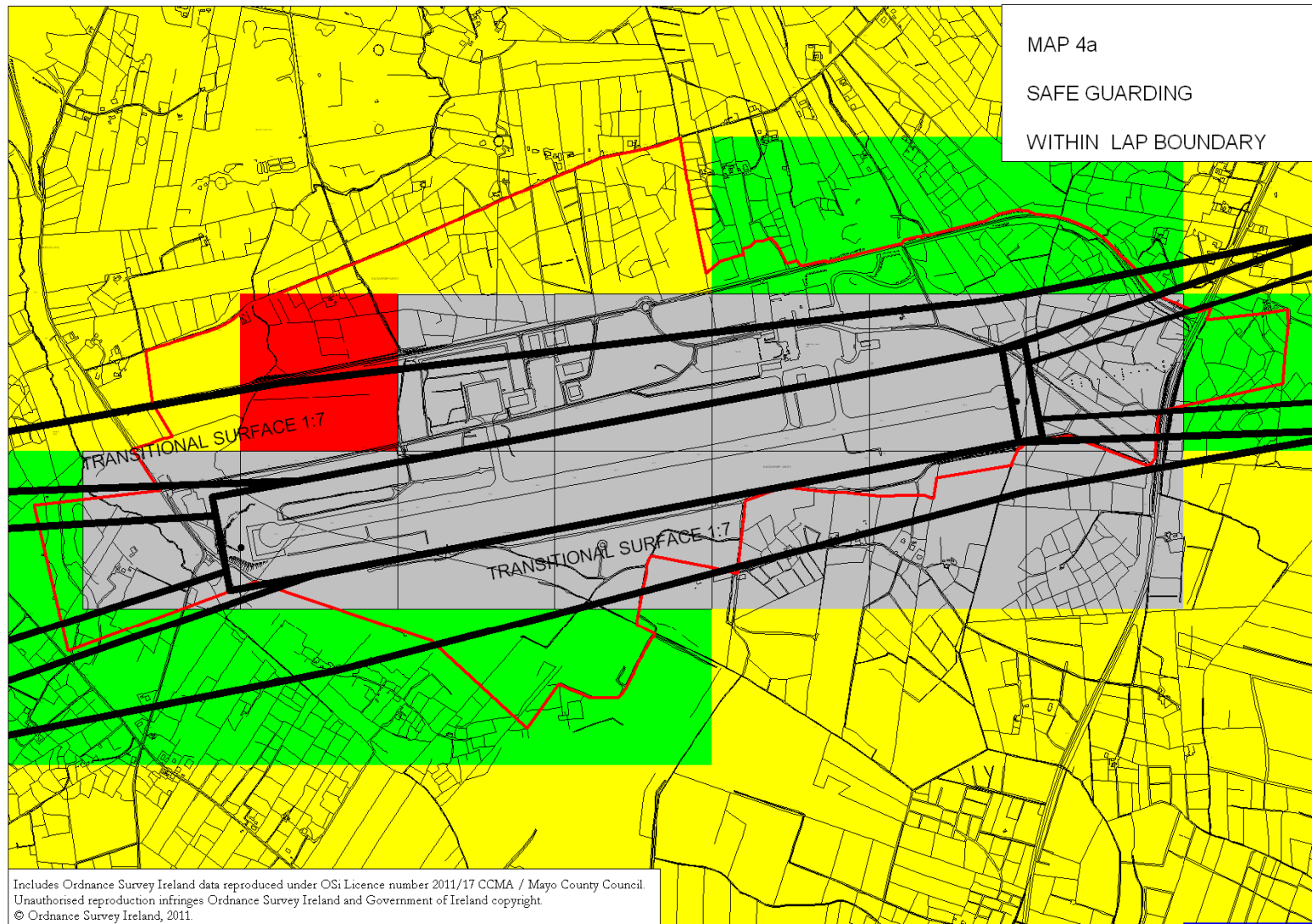
Safeguarding Maps

The following maps indicate the height restriction and development applications that apply around the Airport. Mayo County Council should consult with the airport licensee in relation to planning applications to the extent specified in the key below of any land within the outer safeguarding boundary as shown on Map 4 and within the Plan area shown on Map 4a.

Map Key

- All applications involving major tree planting schemes, mineral extraction or quarrying, refuse tips, reservoirs, sewage disposal works, a nature reserve or a bird sanctuary and all applications connected with an aviation use
- | | |
|---|--|
|  | All developments within the outer safeguarding area |
|  | All buildings, structures, erections and works exceeding 10m in height |
|  | All buildings, structures, erections and works exceeding 15m in height |
|  | All buildings, structures, erections and works exceeding 45m in height |
|  | All buildings, structures, erections and works exceeding 90m in height |





Noise Contours

Noise Contours

Noise Contour Mapping

Mayo County Council retained Airport Planning and Development Ltd, in association with DNV Technology and Bickerdike Allen Partnership to prepare noise contour maps for Ireland West Airport Knock. The report determined airborne aircraft noise contours based on existing and future aircraft traffic movements as a result of implementation of the Ireland West Airport Knock LAP. The scope of the work included prediction of noise contours for a 92 day summer period for scenarios based on existing and future movements. The noise contours are predicted based on actual and predicted aircraft movements using the federal Aviation Administration (FAA) Integrated Noise Model (INM) Version 7.0b aircraft noise prediction software. The contour methodology is recognised worldwide and is in accordance with the methodology used for strategic noise mapping under European Directive 2002/49/EC

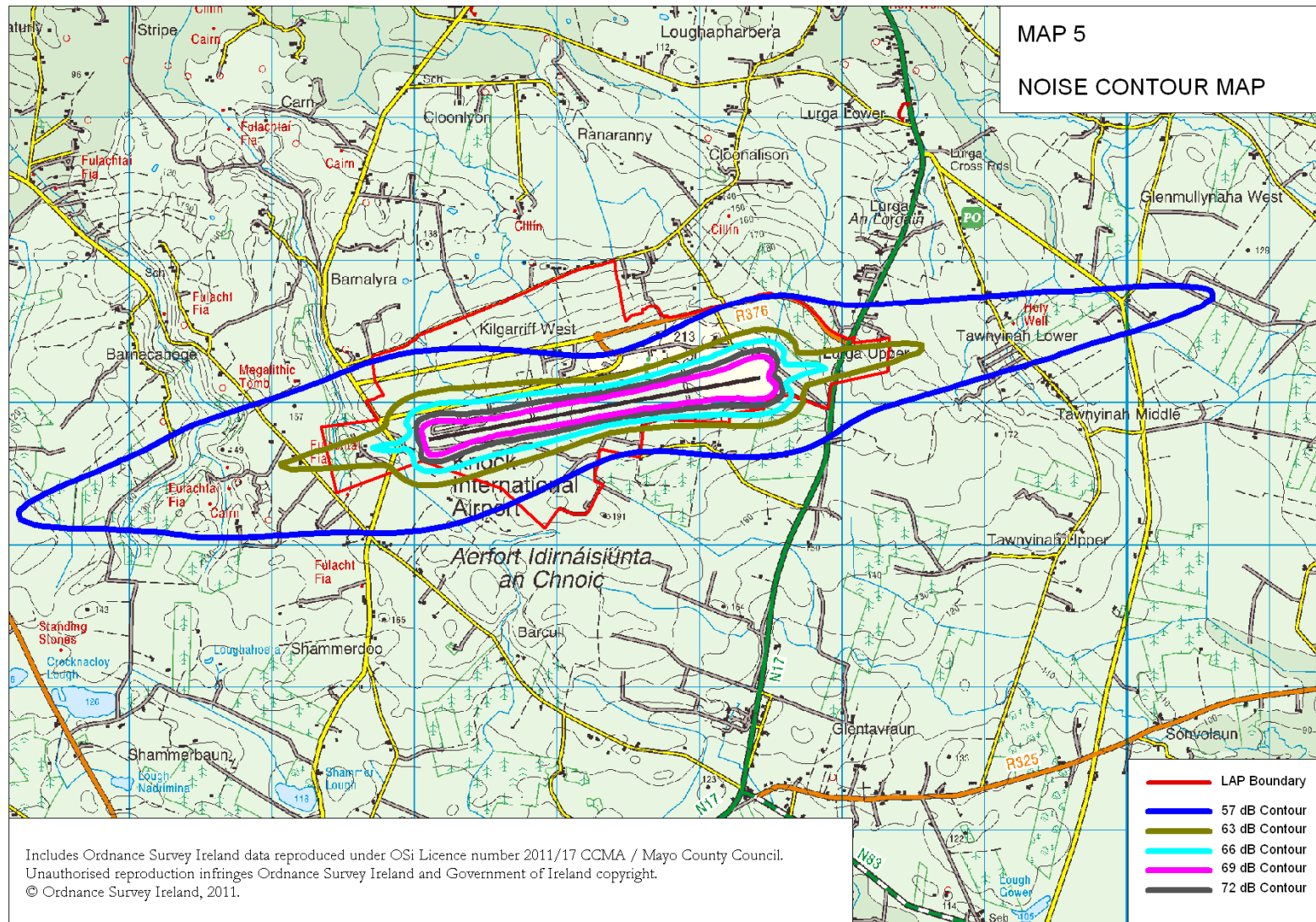
Guidance on airborne noise levels is taken from the UK Planning Policy Guidance (PPG) 24 Planning and Noise (Department of Environment, 1994) as there is no equivalent noise guidance in Ireland. This guidance mainly deals with residential development but it has been clarified at recent UK public enquiries for airport development that the PPG24 levels are also useful in considering new airport developments.

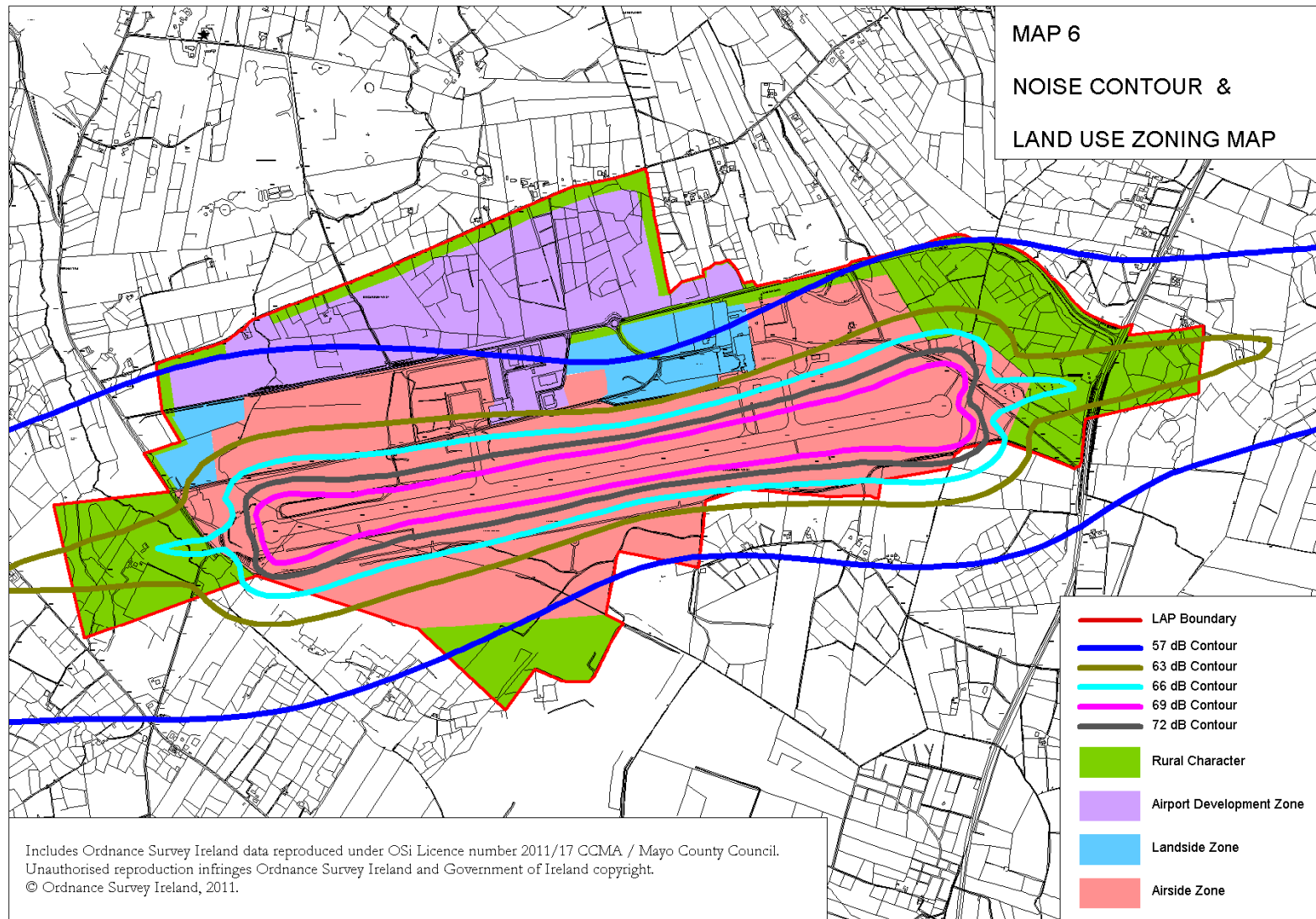
The Noise Contour Maps shown include forecast movements for predicted aircraft movements up to the year 2025 using data supplied by the airport. The noise levels contours indicate the impact of daytime aircraft noise in terms of daytime $L_{Aeq,16h}$ noise contours determined from the average summer day aircraft movements. There is no night time noise impact from flights as the airport does not operate through the night except in the case of emergencies, therefore noise disturbance at night is considered minimal.

The following table outlines the development control standard that should be implemented depending where the location fits within the Noise Contours.

Guidance with regard to airborne noise

Noise Contour $L_{Aeq,16h}$, dB	Guidance for development of building where persons are present.
< 57	Noise need not be considered as a determining factor in determining a planning application, although the noise level at the high end should not be regarded as a desirable level and advice may be given to ensure adequate protection against noise.
57 - 66	Noise should be taken into consideration when determining a planning application and , where appropriate, conditions should be imposed to ensure an adequate level of protection against noise.
66 – 72	Permission should not normally be granted. Where it is considered that permission should be given conditions should be imposed to ensure a commensurate level of protection against noise.
> 72	Planning permissions should not be permitted





Appendix 1 Phasing Methodology

Phasing Methodology

Methodology

The methodology, on which the phasing is based, relates floor areas to population equivalents. Then using the existing capacities of services available, a phasing plan and appropriate density for the development within the LAP area is established. The following sources were used to formulate this methodology.

- “Building Regulations 2006 – Technical Guidance Document B Fire Safety”
Department of Environment Heritage and Local Government
- “Treatment Systems for Small Communities, Business, Leisure Centres and Hotels”
Environmental Protection Agency 1999
- “Design of Extensions to Water Distribution Systems” An Foras
Forbartha Teoranta 1982.

An occupancy load factor is an area of space attributed to a person for various categories of building. Table 1.1 of the Building Regulations Technical Guidance Document B (fire safety) recommends the following figures for maximum occupancy:

Accommodation	Occupancy Load Factor
Factory / Offices	5m ² per person
Storage Building	30m ² per person

The rates shown in the building regulations are maximum rates for the different classes of uses. It would be more practical to establish a combined occupancy load factor that could cater for all developments that may occur (except hotel accommodation) within the LAP Boundary. It is considered that an Occupancy Load Factor of 15m² (standard recommended by Water Services Section) would be suitable for all commercial types of development.

Wastewater loading rates are used to design water supplies and wastewater treatment facilities, and give an estimated usage expressed in l/d/p (litres/day/person). Capacities of such facilities can be calculated for any given population equivalent. Conversely, knowing the capacity of a facility can also give an estimate population equivalent. Design flow rates from the Wastewater Treatment Manual recommend the following wastewater loading rate:

Situation:	Source:	Flow
Industrial (most uses involved with business parks)	Office / Factory	60 (l/d/p)

Another possible development type for the Local Area Plan would be the provision of a hotel development. The Population Equivalent is calculated in relation to the number of bedrooms in the development. It is also assumed that hotels are rarely occupied to capacity for the whole year; therefore a reasonable approach is to allow for a 50% occupancy rate. For example a hotel development of 100 bedrooms would give a population equivalent of 50 PE.

Using the occupancy load factors and population equivalents, it is possible to estimate the gross floor area that the current infrastructure can accommodate within the Plan area. Examining business park developments for similar sized airports, together with the topography and setting of the Plan area, it is possible to determine an appropriate density based on 1000m² per hectare.

Sewerage Infrastructure

The current treatment plant has a population equivalent of 700. The current loading on the plant is 58m³ per day which equates to a population equivalent of 322. Therefore there is spare capacity which can allow for a population equivalent of 370. Using the above methodology and with the current capacity of the sewerage treatment plant, an additional gross floor area of 5550m² of development could be accommodated within the LAP Boundary

If a hotel complex was included in any such plans, using the above methodology would reduce the allowable floor area accordingly. For example: (100 bedroom hotel) 100 bed roomed hotel would have a population equivalent of 100 x 50% =50

The spare capacity would therefore be 370 – 50 = 320 and an additional gross floor area of 4800m² of development could be accommodated within the LAP Boundary plus the hotel development.

The existing waste water treatment plan is designed so that it can be easily expanded to double its capacity. Any further development beyond that capacity would require a new treatment system for the area. Therefore as development progresses, financial contributions would be required to expand the existing scheme

Water Infrastructure

The water supply to the Area is sourced from a local well which is in the control of Mayo County Council. Tests on the supply indicate that the safe yield from the supply is 350m³/day. It is standard practise to design a water supply network to deliver peak flows at 2.5 times the average daily supply. Therefore to safeguard the supply using the peak flow rate, the water available from the supply is 140m³/day. The current usage from the supply is 64m³/day (airport 50m³/d and Cloonlyan GWS 14m³/day) Therefore the current water capacity for any future additional development is 80m³/day which equates to 80,000 litres per day. Using the above methodology the existing water supply can cater for a further population equivalent of 1330, with 20,000m² of gross floor space. Linking the Area to the Kilkelly Water Supply Scheme would provide sufficient water to the area as a short term solution. A more permanent and sufficient proposal would be to link the Area to the East Mayo Regional Water Supply Scheme.

Business Parks

Business parks adjoining airports vary in size depending on the location and the airport. The table below shows the airports of similar size to Ireland West Airport Knock and highlights the density, 1000m² per hectare for the business park associated with each of the airports.

Airport	Area of Business Park	Floor area	Density (1000m²/Ha)
Newquay	32 Ha	92,000m ²	1000m ² /0.35 Ha
Robin Hood	25 Ha	186,000m ²	1000m ² /0.13 Ha
Inverness	250 Ha	350,000m ²	1000m ² /0.7 Ha
East Midlands	18 Ha	42,270m ²	1000m ² /0.4 Ha
Cork (phase 2)	9.3 Ha	31,194m ²	1000m ² /0.3 Ha

The densities of the business parks vary from between 0.2 ha per 1000m² of floor space to 0.7 ha per 1000m² of floor space. Taking the location, topography and setting into

consideration, an area of 0.5ha per 1000m² of gross floor space would be appropriate for the development within the Local Area Plan Boundary.

Proposed Phasing

The existing water supply and waste water treatment plant capacity indicates that there is insufficient capacity available to cater for the predicted 50,000m² of enterprise/business park development. Therefore development within the Airport Development Zone shall be phased in accordance with the table below.

Phasing of Development

Phase	Ha	Floor Space	Workforce (estimated)	Water Supply	Sewerage Treatment
Phase 1	3Ha	5550m ²	370 persons	Existing Capacity	Existing Capacity
Phase 2	7Ha	14450m ²	1330 persons	Existing Capacity	Upgrade Treatment Plant
Additional Phases	15Ha	30000m ²	3300 persons	New Water Supply	New Treatment Plan
Total	25Ha	50,000m²	5000 persons		

There is sufficient capacity in both water supply and waste water treatment to carry out Phase 1. Phase 2 will require an upgrade of the existing waste water treatment plant. The design/construction for upgrading the existing plant should be carried in tandem with the development of Phase 1. It is envisioned that Phase 1 and 2 development of the Enterprise/Business Park could be complete over the lifespan of the LAP.

The further development of the LAP area would require the sources of a new water supply to the area and the construction of a new waste water treatment plant to cater for the increased demand. Whilst this may not occur during the life span of the LAP it would occur over the life span of any SDZ designation.

**Appendix 2 Peat Management and Disposal Plan
Guidance Document**

**Peat Management and Disposal Plan
Guidance Document**

Peat Management and Disposal Plan Guidance Document

Introduction

During the construction phase of a project, an unavoidable impact will be the disturbance of underlying soils. In addition to the physical disturbance, fragmentation and fracturing of the soil by machinery employed for development, other impacts can be incurred such as the loss or destruction of the ecological and hydrological function of the soil and its inhabitants; both floral and faunal.

While some impacts on the soils of a potential construction site simply cannot be avoided, the main objective of this plan is to provide a framework for the restoration and management of the soils disturbed during the proposed construction stage (and decommissioning, whenever applicable) of the developments proposed under the Ireland West Airport Knock Local Area Plan with specific regard to the ecological and hydrological elements of the soil in addition to the best practises for disposal of soil under all waste management legislation; local, national and European.

Along with the Strategic Environmental Assessment and Habitats Directive Assessment, this peat management and disposal plan guidance document has been prepared with advice by the National Parks and Wildlife Service from the viewpoint of the ecological and environmental consequences of peat disturbance and / or removal during any development of any areas within the plan area. Lands developed in a peat-dominated catchment may be liable to flooding / pooling and landslides are also considered a potential concern.

The local area plan (LAP) for the Ireland West Airport Knock, a large proportion of the land within the LAP area boundary has been identified as peat; specifically upland blanket bog (PB2) and cutover bog (PB4). This peat, of varying depths, has already witnessed intervention with a proportion of it previously drained and reclaimed for agricultural purposes. An additional habitat of wet grassland within the confines of the airport site has been observed; present as a successive habitat following the removal of excavated peat in the past.

Characteristics of peat

Peat is defined as a soil derived from the partial organic decomposition of organic material; animal and plant remains. It is generally light to dark brown in colour and is high in water content; generally a waterlogged and anaerobic medium. Peat-producing ecosystems include bog and fen, with bog differing from fen in that water is not supplied from groundwater but rather from atmospheric precipitation. In addition, conditions tend to be acidic (< 5.5).

In Ireland, peatland is categorised as raised or blanket bog, with fen as the supporting medium for raised bog once the mineral-rich water supply has been cut off. Blanket and raised bog vary in their general characteristics; formation, peat depth, location and floral and faunal inhabitants. Generally, raised bog is formed on lake basins, has a general depth of up to 12m, is located mainly in the midlands with fragmented outcrops throughout the country and is generally more acidic than blanket bog. With shallower depths, slightly more basic conditions and formed on mineral soils, blanket bog is more common in smaller outcrops and classified as mountain and lowland. *Sphagnum* species and mosses, bog cotton (*Eriophorum vaginatum*) and sundews (*Drosera* spp.) are common to both raised and blanket bogs, while marsh saxifrage (*Saxifraga hirculus* L.) and slender cotton grass (*Eriophorum gracile* Koch ex Roth) are associated with blanket bog. Common

invertebrates inhabiting both bog types include odonatids (damselflies and dragonflies) and tipulids; other animals include *Rana temporaria* and *Lepus timidus hibernicus*.

Peat soil is classified into two separate layers known as acrotelm layer and the catotelm layer; the former being the upper and the latter the lower or deeper layer. The acrotelm layer is characterised by its fibrous nature as it contains plant roots. It is somewhat tensile and is dry in contrast to the catotelm layer. Generally very wet with a tendency to break apart upon disturbance, peat in the catotelm layer has little use due to its structure and low tensile strength.

Ireland West Airport Knock Plan Area – impacts of peat excavation

In considering the disturbance and removal of soil from within the area of the plan, three issues should be considered; ecological function of the peat land, potential release of peat-bound carbon and the proper restoration and recovery (or disposal) of the peat.

Ecological consequences

While the blanket bog within the plan area has not been afforded protection by a designation under the Habitats Directive, some individual plots examined have been identified as priority habitats, specifically active raised bog [7110]. Disturbance to these habitats should be minimal but when disturbance is unavoidable, restoration of the habitat and its ecological function is an important factor.

Carbon release

Peat lands are recognised carbon sinks and a significant proportion of all soil carbon is bound to peat soils. In fact, peat soils can store, on average, 10 times more carbon dioxide (CO₂), the leading greenhouse gas, than other ecosystems. Hence, excavation of peat soils will give rise to the release of carbon to the atmosphere, a very important consideration in terms of the climate change monitoring. The volume of peat soil-stored carbon within the area of the plan may be quantified using three parameters; bulk density of peat, organic carbon concentration and peat depth.

Peat restoration and waste peat disposal

With the marked increases in wastes arising from construction and demolition projects in Ireland during the early to middle part of the last decade, regional and national waste management plans illustrated unprecedented volumes of construction and demolition (C&D) wastes to be reused, recycled or recovered (disposal of C&D waste is generally not a preferred option and contaminated C&D waste can be de-contaminated and recovered for fill material). Improper management of C&D waste leads to further problems; cost considerations and environmental consequences.

Peat management and restoration

The primary aim of restoring the original peatland is to avoid the loss of soil carbon and to create the conditions for peat accumulation and restoration, mainly by the re-colonisation of *Sphagnum* mosses. Since avoidance of peat may not be an option within the area of the plan it is vital, whenever appropriate, to maintain local hydrological conditions necessary for peat formation, maintenance and regeneration. Prevention of peat compression by heavy machinery will ensure that water movement is not prevented; if not, pooling may occur, leading to desiccation of other portions of the peat land. When traversing peatland, its stability is very important from a health and safety viewpoint in addition to peat displacement issues and consequent release of carbon.

Any excavated peat and its vegetation removed during or pre- construction phase should be stored in contained bunds. Following the construction period, any exposed soil should be covered with the excavated peat (and vegetation) to encourage re-colonisation of vegetation. This return process should be 'first-removed-in-first in reverse order to its removal' in order for roots to re-establish in as natural a progression as possible. In some construction projects, excavation and replacement can be conducted simultaneously.

Storage of excavated peat with its vegetation should be for as short a time as possible and the peat-contained bunds should never be located on areas of intact vegetation; this would result in further unnecessary deterioration of additional peat and the loss or disturbance of the ecological and hydrological function of the soil. Further, during cut operations, perched interstitial surface water within the peat deposits will probably be encountered. The shallow groundwater that seeps out at the peat cuttings should be properly contained, channelled and directed to the down gradient side of the cutting.

Water and run-off control and interceptor drainage works, including silt traps and/or retention ponds should be installed prior to diverting existing drainage channels to inhibit the mobilisation of contaminants into the bedrock or surface water systems. This is vital to prevent increases in soil-laden runoff which may introduce unwanted suspended solids and peat-bound nutrients to waters; phosphorus is the principal element associated with the eutrophication of surface waters while increased suspended solids have proven detrimental to salmon (*Salmo salar*) smolts, *Austropotamobius pallipes* and *Margaritifera*.

Finally, it should be noted that restoration of a peatland can take from five to thirty years depending on the initial condition and primarily the effectiveness of raising the water table to or near to the surface. Long-term monitoring is essential to develop cost-effective techniques and methods that work to ensure successful restoration, including surveys to identify *Sphagnum* spp. re-colonisation. Land uses such as grazing may need examination and if deemed necessary may be prevented to allow the successful re-colonisation of the peat flora.

Peat Disposal

Since acceptable uses of excavated peat are finite, there will be, inevitably, surplus peat material which will require disposal. Disposal of this waste peat should occur off-site at an authorised waste facility; whether an EPA-licensed or a local authority-permitted facility will be dependant on the volume of waste. (Should chemical analyses of soil indicate the presence of contaminants, the waste facility chosen should be authorised to accept hazardous waste soil – European Waste Catalogue (EWC) code 17 05 03*.)

Generally, contaminated soils are treated off-site to make them non-hazardous and are subsequently disposed of as a non-hazardous substance. All procedures followed in the disposal of peat soils, contaminated or otherwise, should follow best practice guidelines and meet the requirements of the Waste Management Acts, 1996 to 2011 in addition to the objectives of the most current Waste Management Plan for the Connaught Region (and other relevant waste management plans which may apply). Such objectives will be detailed in the waste management plan for all relevant phases of construction, including, in addition to an authorised waste facility, the person / company hauling the waste peat must be in possession of a current waste collection permit, which authorises the movement of waste from site to an authorised facility in an approved vehicle; all details should be in Appendices A, B and C of the current permit.

Peat Management and Disposal Plan - conclusion

The Peat Management and Disposal Plan guidance document has been prepared and designed to minimise any actual loss of peat, to ensure rapid restoration of the vegetation post-construction and to ensure the proper recovery of water peat. It has set objectives and introduced guidelines for the prevention of the unnecessary loss of the peat habitat and the disturbance of inhabiting species. In addition, loss of peat-bound carbon to the atmosphere will be minimised by the meticulous pre-construction planning of peat recovery and restoration. The management of waste peat will be conducted using best practice guidelines and in conjunction with the most recent and updated waste management legislation, both national and regional.

The Peat Management Plan will underpin the LAP for the Ireland West Airport Knock, to ensure that best practice measures are implemented at the outset. It will also be used as a guidance document during the application for the designation of the LAP area as a Strategic Development Zone.

The plan should identify arrangements to be made for;

1. the management of construction works to minimise the potential for peat slides;
2. means and locations for temporary storage of peat pending use in reinstatement works;
3. measures for the disposal of surplus peat;
4. measures for the restoration of any disused peat cuttings; and
5. whenever necessary, confirmation that the required consents exist from owners, tenants and any relevant regulatory body for the proposed works.

Peat Management and Disposal Plan – a summary

Requirement	Check	Action
Avoid areas of peat whenever necessary	Ensure that other environmental constraints are not encountered when avoiding peat	Identify all areas of peat Investigate peatslide / landslide / bogburst risk areas
Maintain local hydrological conditions necessary for peat formation, maintenance and regeneration	Identify sensitivities of adjacent habitats Identify peat type (raised and blanket bog are maintained by different hydrological regime) Check for variation in peat character	Be familiar with cSAC location and habitat and species sensitivities Include mitigation measures for maintenance of peatland hydrology Site restoration should be considered at early stage of development
Ensure vehicles do not compress peat, creating barriers to water movement (leads to pooling and desiccation)	Check vulnerability of peat habitat to changes in water content	Design site to avoid interruption of water flow Design site to spread load over as wide an area as possible in land made available Be familiar with cSAC location and habitat and species sensitivities Consider the potential for peat slump
Consider stability issues	Check gradients in field	Avoid steep slopes Avoid saturated peatlands

		whenever possible Use reinforcement techniques whenever necessary
Store excavated peat carefully	Ensure that bunds for this purpose are suitable and adequate for volume of peat	Storage of peat should be for as short a period as possible Storage should not occur on located on areas of intact vegetation
Prevent the release of runoff and drainage waters to the aquatic and terrestrial environment	Identify the risks for pollution from seepage from groundwater and runoff	Ensure that water and runoff control and interceptor drainage works, including silt traps and/or retention ponds are installed prior to diverting existing drainage channels to inhibit the mobilisation of contaminants into the bedrock or surface water system
Restore borrow areas strategically	Ensure that the aim of re-colonisation of <i>Sphagnum</i> spp. and other peat-inhabiting flora is encouraged insofar as possible	Peat (and its flora) should be returned in a 'first-removed-in-first' in reverse order to its removal in order for roots to re-establish in as natural a progression as possible
Recover waste peat using best practice guidelines	Identify risks for pollution of both terrestrial and aquatic environments by removal and movement of waste peat	If deemed necessary, peat samples should be chemically analysed to determine contamination Ensure recovery of waste is to an authorised facility (EPA-licensed or local authority-permitted) and hauled by an authorised waste collection permit holder (movement of EWC 17 05 04 or 17 05 03*)

References

- Defra, 2008. *A compendium of UK peat restoration and management projects*
- Department of Environment, Heritage and Local Government. *Best Practise Guidelines on the preparation of Waste Management Plans for Construction and Demolition Projects*
- Irish Peatland Conservation Council, 2002. Factsheet – Raised Bogs
[<http://www.ipcc.ie/inforaisedbogfs.html>]
- RPS Planning and Environment, 2010. *Ireland West Airport Knock Cumulative Environmental Impact Statement*. Prepared on behalf of Connaught Airport Development Company Limited
- SEPA, 2010. *National Waste Policy Unit Publication; Peat Position Statement*
- Wetzel, R. G., 2001. *Limnology; Lake and River Ecosystems*. Elsevier Academic Press.

Appendix 3 Guidance Documents

Guidance Documents

The Following Guidance Documents/Reports or similar up-to-date Guidance Documents/Reports as appropriate should be considered in the preparation of the Environmental Management Report.

Construction

- Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects: DEHLG 2006
- Connacht Waste Plan 2006-2011 and any subsequent plans
- Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors; CIRIA 2001

Surface Water

- Planning for SUDS-Making it happen; CIRIA 2010

Noise and Vibration

- BS 5228-1:2009 – Code of practice for noise and vibration control on construction and open sites – Part 1: Noise
- BS 5228-2:2009 – Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration
- <http://www.epa.ie/downloads/advice/noise/Env%20Noise%20Survey.pdf>
Noise survey
- Practitioner handbook for Local Noise Action Plans – Recommendations from the EU Silence Project

Natural Heritage

- Fossitt, J.A. (2000) A Guide to Habitats in Ireland. Heritage Council, Kilkenny.
- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (as amended)
- <http://www.npws.ie/en/PublicationsLiterature/RedLists/>
- Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (as amended)
- <http://www.birdwatchireland.ie/>
- Defra, 2008. *A compendium of UK peat restoration and management projects*
- Department of Environment, Heritage and Local Government. *Best Practise Guidelines on the preparation of Waste Management Plans for Construction and Demolition Projects*
- Irish Peatland Conservation Council, 2002. Factsheet – Raised Bogs [<http://www.ipcc.ie/inforaisedbogfs.html>]
- SEPA, 2010. *National Waste Policy Unit Publication; Peat Position Statement*
- Wetzel, R. G., 2001. *Limnology; Lake and River Ecosystems*. Elsevier Academic Press.

Energy

- <http://www.seai.ie/uploadedfiles/publications/Building%20Energy%20Managers%20Resource%20Guide1.pdf>
- Building Regulations 2008 Technical Guidance Document: Conservation of energy and Fuel – Building other than Dwellings

- EU BREF Guidance notes <http://eippcb.jrc.es/reference/>
- The energy-management standard EN 16001, based on the Irish standard IS 393, published in 2009.
- http://www.seai.ie/Your_Business/Large_Energy_Users/Resources/EnergyMAP/
- <http://www.seai.ie/uploadedfiles/InfoCentre/SEIManagingEnergy.pdf>
- http://www.seai.ie/Publications/Your_Business_Publications/Exterior_Spaces_Lighting_Guide.pdf
- <http://www.epa.ie/downloads/advice/bat/> Best Available Technologies
- Building Energy Managers Resource Guide:
- http://www.seai.ie/Your_Building/BER/Your_Guide_to_Building_Energy_Rating.pdf
- http://www.seai.ie/Renewables/Renewable_Energy_Library/Non-Domestic_Passive_House_Guidelines.pdf
- http://www.seai.ie/Publications/Low_Carbon_Opportunity_Study/Irelands_Low-Carbon_Opportunity.pdf
- http://www.seai.ie/Publications/Your_Business_Publications/Exterior_Spaces_Lighting_Guide.pdf

Flood Risk

- The Planning System and Flood Risk Management, Guidelines for Planning Authorities, DoEHLG, 2009
- The Planning System and Flood Risk Management Guidelines for Planning Authorities; Technical Appendices; DoEHLG, 2009