



Appendix E: Environmental Appraisal Report

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NON TECHNICAL SUMMARY

An environmental appraisal of the Loughmacask Local Area Plan (LAP) has been carried out using a systematic process of assessment against Strategic Environmental Objectives (SEOs). The purpose of this summary is to provide a clear understanding in non-technical language of the likely environmental consequences of decisions regarding the future development of lands at Loughmacask, Co. Kilkenny.

The lands at Loughmacask have been zoned for residential, industrial and open space uses. There are a number of environmental features of varying interest within the lands which could be potentially affected by the LAP such as Lough Macask pNHA, listed archaeological sites and landscape features such as the trees along the southern boundary with Kilcreen Lodge and at Ayrefield House. The groundwater within the area is a sustaining resource for the pNHA and the Breaghagh River borders the lands to the south. At the outset of the LAP development process, an approach was adopted whereby environmental matters were fully integrated and used to inform and develop the LAP. The aspirations of the LAP include the following:

- Integration of Lough Macask pNHA, existing landscape features and cultural heritage;
- Provision of a compact urban form with movement links to the city and Loughmacask centre with minimum car usage;
- Balanced provision of amenity both protecting and allowing enjoyment of existing natural heritage resources.

Biodiversity, Flora and Fauna – Potential Effects

The lands within the LAP contain Loughmacask a pNHA. The site is currently within a poor eutrophic condition and is underlain by a sand and gravel aquifer. It is almost certain that the fluctuations in the water level of the lough are due to fluctuations in the groundwater table which in turn are influenced by rainfall levels. The zoning of the lands surrounding Loughmacask could potentially impact on the pNHA and further reduce the ecological value of the site through removing its sustaining resource (i.e. groundwater) and introducing increased human contact. However, the lands have been zoned to ensure that residential development will be set back from the pNHA. Furthermore, policies have been developed which require assessment of the impact of all future development on the pNHA, to ensure its hydrological functioning is maintained, to enhance the ecological value of it and to provide links with other ecological resources both inside and outside the LAP boundary.

Groundwater – Potential Effects

In general, groundwater bodies close to locations in which development and settlement has and is likely to take place is probably at significant risk of failing to achieve the Water Framework Directive's objectives. The WFD requires that all member states implement the necessary measures to prevent deterioration of the status of all waters and protect, enhance and restore waters with the main objective of achieving good status by 2015. The sand and gravel aquifer underlying the LAP lands is classified as of high vulnerability and is regionally important. It is further underlain by a karstified bedrock aquifer also of regional importance. Therefore the policies and infrastructure guidance have been developed which take cognisance of the need to ensure that all future development avoids impact on the groundwater resources underlying the lands.

Surface Water – Potential Effects

The LAP lands are located within the Breagagh river catchment area which would be classified as at significant risk of failing to achieve the Water Framework Directive's objectives due to development pressure. Development within the lands cannot be carried out without adequate wastewater treatment which is acknowledged within the LAP but the provision of same is addressed within the higher level plans for the city and environs and the county. The LAP also provides other policies and guidance to mitigate potential impacts on surfacewater and to prevent flooding as a result of the zoning.

Cultural Heritage – Potential Effects

The Loughmacask lands, given their location close to Kilkenny City, inevitably have a rich cultural heritage; - there are a number of listed archaeological sites present. The LAP provides policies to ensure that the cultural heritage is protected.

Landscape – Potential Effects

There are no designated scenic views into or out of the LAP lands. Nevertheless, there are features present which are representative of the landscape of Co. Kilkenny and which warrant retention to ensure that the zoned land has a positive amenity value and also to ensure that interrelated ecological functioning is maintained. The LAP zoning and policies ensure that best use is made of landscape features present and that the sense of place is not lost.

Human Health – Potential Effects

The Loughmacask area contains a fertiliser manufacturing plant which is an established activity under the European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations, 2006. Consultations have taken place with the Health and Safety Authority in order to ensure that landuses and the zoning proposed are not incompatible based on current knowledge of risk scenarios likely to occur.

1.0 INTRODUCTION

Kilkenny Borough and County Council (referred to hereon as the Councils) instigated the Local Area Plan (LAP) process for Loughmacask. The LAP develops detailed policies specific to the Loughmacask area. In particular with regard to environmental aspects and assessment of the LAP, a process was instigated which covered the following:

- 1) Screening and Scoping for Strategic Environmental Assessment (SEA);
- 2) Commissioning of Baseline Reports;
- 3) Policy Development
- 4) Assessment of the LAP zoning, vision, policies against Strategic Environmental Objectives (SEOs)

This report deals in detail with Item 4 above. Items 1-3 are briefly discussed below.

Screening and Scoping

Section 1.5 of the LAP details the screening for SEA that was carried out with regard to the LAP. It was concluded that the LAP will have environmental implications but these are not likely to be significant in terms of the criteria set out in Schedule 2A of S.I. No. 436/2004 and therefore an SEA was not deemed necessary.

Commissioning of Baseline Reports

Baseline reports were commissioned for local ecology and cultural heritage in 2005. These are included in Appendices C and D of the LAP respectively. These reports were used to characterise the receiving environment and to inform Sections 2.0 (Context) and 4.0 (Policies) of the LAP. Furthermore, the landscape character and views and geology, hydrogeology and hydrology of the study area for the LAP were characterised and are presented in Section 2.0 of the LAP. Emerging environmental conditions were also identified.

Policy Development

The baseline surveys commissioned were used to inform policy both directly and indirectly related to environmental aspects such as biodiversity, cultural heritage and water.

2.0 METHODOLOGY

In assessing the LAP, reference is made to the Strategic Environmental Objectives (SEOs) developed for the Draft City and Environs Development Plan (CEDP) 2008 -2014. SEOs are methodological measures which are developed from international, national and county policies which generally govern environmental protection objectives and are used as standards against which development strategies, policies and objectives of plans including the zoning provisions, can be evaluated in order to help identify areas in which significant adverse impacts are likely to occur, if unmitigated against. The methodology employed in assessing the City and Environs Plan has been employed for the LAP. Based on an understanding of the existing and emerging environmental conditions in the city and environs, the SEOs were developed to assess the likely affects of the CEDP. Table 1.0 below lists all the SEOs in the Draft Environmental Report for the CEDP.

Table 1.0 Strategic Environmental Objectives

SEO Code	SEO
B1	To avoid loss of relevant habitats, geological features, species or their sustaining resources in designated ecological sites.
B2	To avoid significant adverse impacts including direct, cumulative and indirect impacts to relevant habitats, geological features, species or their sustaining resources in designated ecological sites by development within or adjacent to these sites.
B3	To sustain, enhance or where relevant prevent the loss of ecological networks or parts thereof which provide significant connectivity between areas of local biodiversity.
HH1	To protect human health from hazards or nuisances arising from exposure to incompatible landuses.
S1	Maximise the sustainable re-use of brownfield lands and maximise the use of the existing built environment rather than developing Greenfield lands.
W1	To maintain or improve where possible the quality of rivers.
W2	To prevent pollution and contamination of groundwater.
A1	To minimise increases in travel related emissions to air.
M1	To serve new development under the CEDP with appropriate wastewater treatment
CH1	To protect the archaeological heritage of Kilkenny City and its Environs with regard to: entries to the Record of Monuments and Places; zones of archaeological, and; the context of the above within the surrounding landscape where relevant.
CH2	To preserve and protect the special interest and character of Kilkenny City and Environs architectural heritage with regard to: entries to the Record of Protected Structures; Architectural Conservation Areas; entries to the National Inventory of Architectural Heritage, and; the context of the above within the surrounding landscape where relevant.
L1	To protect Kilkenny City and Environs' sensitive landscape features and designated scenic views.

Note: S1 is not considered relevant to the LAP lands.

The compatibility criteria for appraising the effects of the CEDP provisions on SEOs are given in Table 2.0.

Table 2.0 Criteria for Appraising the Effect of the CEDP Provisions on SEOs

Likely to Improve Status of SEOs	Probable Conflict with status of SEOs; unlikely to be mitigated	Potential Conflict with status of SEOs; likely to be mitigated	Uncertain interaction with status of SEOs	Neutral Interaction with status of SEOs	No Likely Interaction with status of SEOs	Mitigation Measure

Where the appraisal identifies a likely conflict or agreement as the case may be with the status of an SEO the relevant SEO code is entered into the column. In the assessment of the LAP, mitigation measures may already be integrated into the LAP as, for example, in other policies. Where this is the case, the other policies will be referred to collectively or individually in the mitigation column using the Policy Code from the LAP where relevant.

3.0 ASSESMENT OF LAP

Tables 3.0 and 4.0 contain the assessment of the LAP policies, zoning and vision against the SEOs.

Table 3.0 Evaluation of the LAP Policies

LAP Policy Code	Likely to Improve Status of SEOs	Probable Conflict with status of SEOs; unlikely to be mitigated	Potential Conflict with status of SEOs; likely to be mitigated	Uncertain interaction with status of SEOs	Neutral Interaction with status of SEOs	No Likely Interaction with status of SEOs	Mitigation Measure
NH01	B1, B2, B3, W1, W2, L1					S1, A1, M1, CH1, CH2, HH1	
NH02	B1, B2, B3, W1, W2, L1				CH1	S1, A1, M1, HH1, CH2	
NH03	B2, B3				B1, L1, CH1	S1, A1, M1, W2, W1, HH1, CH2	
NH04	B3				B1, B2, L1, CH1	S1, A1, M1, W2, W1, CH2	
NH05	B1, B2, B3, L1					S1, A1, M1, CH1, CH2, W2, W1, HH1	
NH06	B1, B2, B3, L1				W1, W2	S1, A1, M1, CH1, CH2, HH1	
NH07	B1, B2, B3				L1, W1, W2	S1, A1, M1, HH1, CH2, CH1, W1	
NH08	B3, L1				B1, B2	S1, A1, M1, W1, W2, HH1, CH1, CH2	
NH09	B1, B2				B3, W2, L1	S1, A1, M1, W1, CH1, CH2, HH1	
NH10	B3				L1, W2	S1, A1, M1, W1, HH1, CH2, B1, B2, CH1	
NH11	B3, L1				B1, B2, CH1	S1, A1, M1, W1, HH1, W2, CH2	
NH12	B3, L1					S1, A1, M1, W1, HH1, W2, B1, B2, CH1, CH2	
NH13	A1					B1, B2, B3, HH1, S1, W1, W2, M1, CH1, CH2, L1	
AH01	CH1, L1					B1, B2, B3, HH1, S1, W1, W2, A1, CH2, M1	

LAP Policy Code	Likely to Improve Status of SEOs	Probable Conflict with status of SEOs; unlikely to be mitigated	Potential Conflict with status of SEOs; likely to be mitigated	Uncertain interaction with status of SEOs	Neutral Interaction with status of SEOs	No Likely Interaction with status of SEOs	Mitigation Measure
AH02	CH1, L1					B1, B2, B3, HH1, S1, W1, W2, A1, CH2, M1	
AH03					CH1, CH2, L1	B1, B2, B3, HH1, S1, W1, W2, A1, M1	
AH04					CH1, L1	B1, B2, B3, HH1, S1, W1, W2, A1, M1, CH2	
AH05					CH1, L1	B1, B2, B3, HH1, S1, W1, W2, A1, M1, CH2	
AH06	CH1,CH2, L1					B1, B2, B3, HH1, S1, W1, W2, A1, M1, CH2	
AH07					L1	B1, B2, B3, HH1, S1, W1, W2, A1, M1, CH1, CH2	
AH08					L1	B1, B2, B3, HH1, S1, W1, W2, A1, M1, CH1, CH2	
AH09					L1	B1, B2, B3, HH1, S1, W1W2, A1, M1, CH1, CH2	
PN01						B1, B2, B3, HH1, S1, W1, W2, A1, M1, CH1, CH2, L1	
PN02						B1, B2, B3, HH1, S1, W1, W2, A1, M1, CH1, CH2, L1	
OS01				B1, B2, B3, L1		HH1, S1, W1, W2, A1, M1, CH1, CH2	
OS02	B3				W1, W2, L1, HH1	B1,B2,S1, M1,CH1, CH2	
LV01					L1	B1,B2,B3, HH1,S1, W1,W2,A1, M1, CH1, CH2	

LAP Policy Code	Likely to Improve Status of SEOs	Probable Conflict with status of SEOs; unlikely to be mitigated	Potential Conflict with status of SEOs; likely to be mitigated	Uncertain interaction with status of SEOs	Neutral Interaction with status of SEOs	No Likely Interaction with status of SEOs	Mitigation Measure
LV02					L1	B1,B2,B3, HH1, S1, W1,W2, A1, M1, CH1, CH2	
IP01				A1		B1,B2,B3, HH1, S1, W1,W2, M1, CH1, CH2, L1	
IP02	A1					B1,B2,B3, HH1, S1, W1,W2,M1, CH1, CH2, L1	
IP03	A1			B1, B2		B3, HH1, S1, W1, W2, M1, CH1, CH2, L1	
PT01	A1			B1, B2		B3, HH1, S1, W1, W2, M1, CH1, CH2, L1	
PT02	A1					B1, B2, B3, HH1, S1, W1, W2, M1, CH1, CH2, L1	
PT03	A1					B1, B2, B3, HH1, S1, W1, W2, M1, CH1, CH2, L1	
WS01	M1					B1, B2, B3, HH1, S1, W1, W2, CH1, CH2, L1, A1	
VVW01	M1					B1, B2, B3, HH1, S1, W1, W2, CH1, CH2, L1, A1	
SW01	B1, B2, W1, W2					B3, HH1, S1, CH1, CH2, L1, A1, M1	
SW02	M1, B1, B2, W1, W2					B3, HH1, S1, CH1, CH2, L1,A1	
SW03	HH1					B1, B2, B3, S1, W1, W2, CH1, CH2, L1, A1,M1	
SW04	B1, B2					B3, S1, W1, W2, CH1, CH2, L1, A1, M1, HH1	
SW05	B1, B2, W1, W2					B3, S1, CH1, CH2, L1, A1, M1, HH1	

LAP Policy Code	Likely to Improve Status of SEOs	Probable Conflict with status of SEOs; unlikely to be mitigated	Potential Conflict with status of SEOs; likely to be mitigated	Uncertain interaction with status of SEOs	Neutral Interaction with status of SEOs	No Likely Interaction with status of SEOs	Mitigation Measure
SW06	HH1					B1, B2, B3, S1, W1, W2, CH1, CH2, L1, A1, M1	
SW07	HH1					B1, B2, B3, S1, W1, W2, CH1, CH2, L1, A1, M1	
EP01						B1, B2, B3, S1, W1, W2, CH1, CH2, L1, A1, M1, HH1	
IT01	A1					B1, B2, B3, S1, W1, W2, CH1, CH2, L1, M1, HH1	
WM01	HH1, B2, L1					B1, B3, S1, W1, W2, CH1, CH2, A1, M1	
WM02	HH1, B2, L1					B1, B3, S1, W1, W2, CH1, CH2, A1, M1	
SS01						B1, B2, B3, HH1, S1, W1, W2, CH1, CH2, A1, M1, L1	
SS02						B1, B2, B3, HH1, S1, W1, W2, CH1, CH2, A1, M1, L1	
CF01	A1					B1, B2, B3, HH1, S1, W1, W2, CH1, CH2, M1, L1	
CF02	A1					B1, B2, B3, HH1, S1, W1, W2, CH1, CH2, M1, L1	
CF03	A1					B1, B2, B3, HH1, S1, W1, W2, CH1, CH2, M1, L1	
LE01	A1					B1, B2, B3, HH1, S1, W1, W2, CH1, CH2, M1, L1	

LAP Policy Code	Likely to Improve Status of SEOs	Probable Conflict with status of SEOs; unlikely to be mitigated	Potential Conflict with status of SEOs; likely to be mitigated	Uncertain interaction with status of SEOs	Neutral Interaction with status of SEOs	No Likely Interaction with status of SEOs	Mitigation Measure
LE02	A1					B1, B2, B3, HH1, S1, W1, W2, CH1, CH2, M1, L1	
LE03	A1				HH1	B1, B2, B3, S1, W1, W2, CH1, CH2, M1, L1	
RP01	A1					B1, B2, B3, S1, W1, W2, CH1, CH2, M1, L1, HH1	
RP02						B1, B2, B3, S1, W1, W2, CH1, CH2, M1, L1, HH1, A1	
RP03						B1, B2, B3, S1, W1, W2, CH1, CH2, M1, L1, HH1, A1	
RP04				HH1, B2, L1		B1B3, S1, W1, W2, CH1, CH2, M1, L1, A1	
UD01	B1, B2, B3, HH1, W1, W2, A1, M1, CH1, L1					S1, CH2	

Table 4.0 Evaluation of the LAP Vision and Zoning

LAP Policy Code	Vision/Zoning	Likely to Improve Status of SEOs	Probable Conflict with status of SEOs; unlikely to be mitigated
Section 2.0 - Context of LAP	Land Use Zoning and SEVESO Risk Zones Map		
Section 3.0 - Vision	<p>Located on the edge of Kilkenny City, Loughmacask will have strong physical and cultural linkages to the city centre and to the surrounding countryside, including the Nore and Breagagh River Valleys. Loughmacask will be connected to the city centre by a network of pedestrian and cycle ways, improved transport corridors and visually connected with views of landmarks such as St. Mary's and St. Canice's Cathedrals. The Loughmacask lake will be set into a parkland area and will be accessible along a pedestrianised Lousybush lane. The Loughmacask LAP is also being utilized as an opportunity to open connections to the Breagagh River Valley.</p>	B1, B2, B3, A1, L1	
Section 3.0 - Vision	<p>The vision for Loughmacask is responsive to the distinct landscape of the area, creating an environment that locals and visitors will be able to relate to and identify with. The integration of existing landscape features such as the rolling landform, Lousybush Lane and hedgerows to the west and south-west of Lough Macask will assist in providing a structure for future development that commemorates historic land - uses.</p> <p>Particular outstanding features, such as Lough Macask and a variety of archaeological and architectural heritage features unique to the Loughmacask area will be integrated where appropriate and their accessibility enhanced for enjoyment of the local residents and visitors to the area.</p>	B1, B2, B3, W2, CH1, L1	
Section 3.0 - Vision	<p>Enabling people to move freely within and around their community, while undertaking their day to day activities, is integral to building a community that responds to the basic needs and desires of its people. The provision of excellent infrastructure at all levels – sports and recreation grounds, open space, pedestrian and cycle routes, safe roads, enhanced education facilities, and quality childcare – will assist Loughmacask in becoming a great place to live.</p>		

Potential Conflict with status of SEOs; likely to be mitigated	Uncertain interaction with status of SEOs	Neutral Interaction with status of SEOs	No Likely Interaction with status of SEOs	Mitigation Measure
B1, B2, B3, W1, W2, A1, CH1, L1, S1*		HH1	M1,CH2	NH01 – NH13, AH01-AH05; LV01-LV02; SW01, SW02, PT01-PT03, IP02, IP03, WS01, WW01.
B1, B2, B3, W1, W2, A1, CH1, L1			HH1, S1, M1, CH2	NH01 – NH13, AH01-AH05; LV01-LV02; SW01, SW02, PT01-PT03, IP02, IP03, WS01, WW01.
B1, B2, B3, W2, A1, CH1, L1			HH1, S1, W1, M1, CH2	NH01 – NH13, AH01-AH05; LV01-LV02; SW01, SW02, PT01-PT03, IP02, IP03, WS01, WW01
B1, B2, B3, A1CH1, L1			HH1, S1, W1, M1, CH2, W2	NH01 – NH13, AH01-AH05; LV01-LV02; SW01, SW02, PT01-PT03, IP02, IP03, WS01, WW01

* This SEO is more relevant to the city and also county level. Nevertheless brownfield sites should be considered prior to lands in the Loughmacask area. Within the Loughmacask lands, there are two main types of existing landuse patterns;- Greenfield/agricultural and industrial.

LAP Policy Code	Vision/Zoning	Likely to Improve Status of SEOs	Probable Conflict with status of SEOs; unlikely to be mitigated
Section 3.0 - Vision	<p>The Loughmacask LAP will establish a well-balanced community, integrating and accommodating a diverse array of social and cultural backgrounds. Loughmacask will open up further choice for living in Kilkenny and, within itself, will offer a range of living options for young people, families and the elderly.</p> <p>A defined village centre arranged around a public square offering local shops and services, will provide a strong sense of place and identity for the local community. Sports and recreation grounds, along with other community facilities will also facilitate opportunities for community groups to establish and grow. Employment opportunities will continue to be provided locally through existing industry and new business opportunities in and around the village centre.</p>	A1	
Section 3.0 - Vision	<p>The Loughmacask LAP envisages a sustainable environment developed with the assistance of design guidelines relating to such matters as open space, building design, local infrastructure (including roads, pedestrian and cycle ways, and the management of drainage patterns and flooding), and waste minimisation and recycling. In particular, design guidance will seek to ensure that key public amenities, such as recreation grounds and childcare, are located within close proximity to key nodes (such as the village centre), with pedestrian and cycle routes linking them to adjoining neighbourhoods; energy efficient design and energy saving building technology will be promoted as an integral aspect of all future development; and particular attention will be given to implementing sustainable methods of water runoff management to protect the quality of natural water systems and habitats in the area.</p> <p>With regard to public transport, the LAP envisages and provides for the future introduction of a city wide public bus service. The principles of waste minimisation and recycling will be key considerations in the design and construction of new developments.</p>	B1, B2, B3, HH1, S1, W1W2, A1, M1, CH1, L1	

Potential Conflict with status of SEOs; likely to be mitigated	Uncertain interaction with status of SEOs	Neutral Interaction with status of SEOs	No Likely Interaction with status of SEOs	Mitigation Measure
B1, B2, B3, A1CH1, W2, L1			HH1, S1, W1, M1, CH2	NH01 – NH13, AH01-AH05; LV01-LV02; SW01, SW02, PT01-PT03, IP02, IP03, WS01, WW01
			CH2	

4.0 Mitigation

No specific further mitigation is required as measures have been implemented into the LAP policies as indicated in Table 3.0.

5.0 Monitoring

Monitoring using indicators specified in the CEDP will be carried out for the City and Environs as a whole. However, the following specific monitoring is proposed:

Table 4.0 Monitoring Measures and Suggested Indicators

Environmental Component	Selected Indicator(s)	Monitoring or Monitoring Source Proposed
Biodiversity, Flora and Fauna	B1: Percentage of relevant species lost in pNHA. B2: Loss of biodiversity within LAP lands.	Ecological survey including a botanical survey of pNHA. Study of hydrological functioning of the lough.
Water	W1: Decrease in biotic Quality Rating of Breagagh W2: Faecal coliform, nitrates and ammonia levels above EPA Interim Groundwater Values	EPA records on Breagagh or specific biological water quality monitoring. EPA records or groundwater quality monitoring.
Cultural Heritage	CH1: Number of recorded sites and monuments full or partially lost.	Tracking during planning permission applications. Monitoring during development.
Landscape	L1: Percentage of trees, hedgerows and stone walls lost/created.	Tree surveying as part of planning processes. Tracking trends in planning permission applications.

6.0 Conclusions

At the outset of the LAP development process, an approach was adopted whereby environmental matters were fully integrated and used to inform and develop the LAP. The aspirations for the area were to ensure the following:

- Integration of Lough Macask pNHA, existing landscape and cultural heritage;
- Provision of a compact urban form with movement links to the city and Loughmacask centre with minimum car usage;
- Balanced provision of amenity while both protecting and allowing enjoyment of natural heritage resources.

In order to achieve this, baseline surveys were completed to ensure a sufficient understanding of existing environmental conditions including potential threats and opportunities which could be avoided or realised within the Plan respectively. The policies for development of the LAP lands are tempered by the need to ensure sustainable development practises with environmental protection as a key criterion. Many of the policies act as mitigation measures to guard against deterioration in prevailing environmental conditions. As a result, the LAP has been found to be not incompatible with the SEOs set out in this report and taken from the draft Environmental Report for the CEDP 2008 – 2014.

