

Strategic Environmental Assessment
Environmental Report on the

Draft Local Area Plan for Creggan, Co. Westmeath



This environmental report was prepared by Loci in conjunction with Natura Environmental Consultants and Irish Archaeological Consultants on behalf of Westmeath County Council.



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1 Non-technical summary

1.1 Introduction

1.1.1 SEA process

Westmeath County Council has prepared a Draft Local Area Plan for Creggan (DLAPC). It has been determined by the Council that it is appropriate to carry out a Strategic Environmental Assessment of the draft plan.

The purpose of the Environmental Report is to evaluate the likely significant environmental effects of implementing the plan and to identify possible alternatives and measures to avoid or reduce significant negative effects that are identified.

1.1.2 The Draft Local Area Plan for Creggan

The plan area is located to the east of the built up area of Athlone, approximately 2 km from the town centre. The area comprises approximately 302 hectares and it is bounded to the north by the disused Mullingar-Athlone Railway and bisected by the Old Dublin Road (N62) and the M6 Dublin/Galway motorway. The Dublin-Galway railway line also bisects the southern part of the area.

The plan aims to ensure the proposed development of the area will realise, in summary, the following vision:

- An integrated and dynamic enterprise zone with an international profile.
- A centre of excellence for education, research, enterprise and innovation
- A world-class business and convention centre.
- A premium tourist destination with accommodation and cultural attractions.
- An integrated transport system.

Development of lands within the LAP has a potential employment range between 14,300 – 18,500 persons, if the plan is developed to completion.

1.2 Methodology

The methodology for carrying out the assessment is based on the requirements set out in the European Directive on Strategic Environmental Assessment of plans and programmes as transposed into Irish law by regulations, as well as Ministerial Guidelines.

1.2.1 Screening

The decision to undertake an assessment (screening) was made by Westmeath County Council following a screening process and having regard to criteria set out in the abovementioned Directive and regulations.

1.2.2 Scoping

The scope of the assessment was informed by consultation with the environmental authorities including the relevant sections of the Department of Environment, Heritage and Local Government, the Department of Energy, Communications and Natural Resources and the Environmental Protection Agency.

1.2.3 Baseline study

A study of the plan area was undertaken to establish the existing (baseline) environmental context of the plan. The contents of this study have been derived from the requirements of the SEA Directive and include a description of the existing bio-diversity, population, flora and fauna, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage and the landscape of the study area, as existing.

1.2.4 Environmental criteria

Environmental criteria for protection of the existing environment were established for the study area, against which policies and objectives of the plan were tested.

1.2.5 Consideration of alternatives

Alternatives were considered by the planning authority, as is required by the Directive.

- Alternative A - Developing the Creggan lands based on the DLAPC vision.
- Alternative B – Selecting a location closer to the town centre with direct access onto M6.
- Alternative C – Availing of existing, zoned enterprise and employment lands within statutory plans for the area, ie. Athlone Town Plan & Athlone Environs Plan.

1.2.6 Environmental assessment of the plan and measures to prevent, reduce or off-set effects

This process involves establishing the effects of the plan on the existing environment in terms of its biodiversity, population and human health, flora and fauna, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape, and the interrelationship between these factors. These assessments are presented as a series of tables that establish the compatibility of the plan with the abovementioned environmental criteria formulated for the area.

Where it is beyond the scope of the assessment to establish the full environmental impact of future developments, mitigation measures have been identified which seek to ensure the environmental criteria formulated for the area are not compromised.

1.2.7 Monitoring

The SEA Directive requires that the environmental effects of the implementation of a plan be monitored in order to identify at an early stage unforeseen adverse effects and to be able to undertake appropriate remedial action. For the purposes of the plan, structures and arrangements are identified for the monitoring of the implementation of the plan and its likely environmental effects.

1.2.8 Difficulties encountered in compiling the required information

The Environmental Report was prepared and informed by available data sources and published reports.

Areas where there was insufficient data available or where the level of detail is not sufficient for the purpose of detailed or quantifiable assessment are as follows:

- The DCLAP does not set out a specific urban and landscape structure in spatial terms. This limits the extent to which potentially significant effects on the environment arising from the plan can be quantified at this stage. Specific proposals may, therefore require more detailed environmental assessment as they are brought forward.
- Data on potential traffic impacts is not available. Detailed traffic impact assessment of specific proposals will be required to be undertaken as and when they arise having regard to the potential cumulative effects of such proposals likely to result from full build-out of the lands.
- Site-specific data on population and human health is not available.
- Completed Groundwater Protection Scheme Data was not available. Preliminary data available from the GSI has been utilised. However, further hydro-geological studies may be required to assess any potential impacts of development proposals on the integrity of the existing hydro-geological regime, particularly in so far as they may pertain to Crosswood Bog.
- The licence archive within the National Monument service was not available for public consultation due to re-location.

1.3 Planning and policy context

The DCLAP sits within a hierarchy of national, regional and local plans. These include the National Spatial Strategy, regional planning guidelines, the Westmeath County Development Plan and Athlone Town Development Plan, and other local area plans.

The DCLAP must also take into account a range of EU and National legislation and guidelines.

Athlone, together with Mullingar and Tullamore, is designated as a Linked Gateway in the National Spatial Strategy and the Regional Planning Guidelines.

The aim of the strategy and guidelines is to develop the gateway taking advantage of its strategic location and connections. In this regard Athlone has been identified as being suitable for the development of an integrated and dynamic enterprise zone with an international profile.

Creggan has also been designated by the DoEHLG as a ‘developing area’. Accordingly, the Local Area Plan aims to promote the development of the Creggan lands, in conjunction with the town, and to provide for the level of enterprise and commerce, commensurate with the status of Athlone as a ‘Linked Gateway’, in accordance with the National Spatial Strategy designation for the town.

Related goals seek to ensure that strategic development of the region works to conserve its biodiversity and habitats, and to integrate high quality built and physical environment with supporting physical and social infrastructure.

1.4 Characteristics of the existing environment at Creggan

1.4.1 Biodiversity, flora and fauna

There are no designated Natura habitats within the plan lands. However, there are non-designated habitats of ecological value, notably the River AI and Fardrum/ Cloonbonny streams, grassland and hedgerows.

Crosswood Bog, which is a protected active raised bog habitat adjoins the plan area. Active, raised bog comprises areas of high bog that are wet and actively peat-forming, where the percentage cover of bog mosses is high, and where some or all of the following features occur: hummocks, pools, wet flats, Sphagnum lawns, flushes and soaks. Degraded raised bog corresponds to those areas of high bog whose hydrology has been adversely affected by peat cutting, drainage and other land-use activities, but which are capable of regeneration.

No legally-protected aquatic plant species have been recorded in the Cloonbonny stream. Water quality was recently found to be good. There has been no recent sampling of the other waterbodies in the area.

White-Clawed Crayfish, River Lamprey and Brook Lamprey have been recorded in the area and are protected under the Habitats Directive. Parts of the River AI are also recorded as being suitable spawning habitats for salmonoids.

Reports by consulting engineers prepared on behalf of Westmeath Council also indicate that otter, freshwater crayfish, lamprey, trout and kingfishers have been identified in or adjacent to the River AI.

1.4.2 Population and human health

The population of Athlone was 14,347 persons in 2006. According to the Athlone Town Plan, population growth in the region between 2002 and 2006 was 11.5%, and population growth in County Westmeath over the same period was 10.5%, both above the State average of 8.1%. The population of Athlone is expected to reach 26,000 persons by 2022.

Human health issues in Athlone are generally concerned with the quality of drinking water and air quality and also to the quality of life of Athlone’s citizens, which can be affected by factors such as commuting patterns and the provision for recreation and amenity.

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Studies indicate a general trend that commuting to work by car is increasing, particularly from lower density suburban areas and rural areas to larger towns such as Athlone. This has a negative effect on quality of life.

1.4.3 Soil

The site predominantly comprises of agricultural land with a cutover peatland bog.

Geology

The Geological Survey of Ireland (GSI) describes the bedrock of the area as Carboniferous Walsortian Limestone.

A locally important sand and gravel aquifer was also identified in the northeastern region of the site. Groundwater flow direction (currently unknown) is likely to be affected by fracturing the bedrock and is expected to follow general topography and flow in a general direction towards the River Shannon.

Geological Heritage

There are no important geological heritage sites on or adjacent (\leq 500m) to the site.

1.4.4 Water

Surface water quality

The study area is within the Shannon catchment. The main threat to water quality in the Shannon arises from over-enrichment from point (such as waste water treatment plants) and diffuse sources such as agriculture and urban land uses.

The Athlone stretch of the Shannon River is recorded as being of moderate quality by the EPA, however the Shannon River Basin Characterisation Report states that the Athlone portion of the Shannon is considered to be ‘probably at significant risk’ from diffuse sources of pollution and ‘at significant risk’ from point sources.

Surface water quality within the plan area is good.

Groundwater

A locally important sand/gravel aquifer comprises a large component of the plan area. The lands immediately west of Crosswood Bog consist of limestone and shale and poorly productive bedrock. The area encompassed by the aquifer is characterised by high groundwater vulnerability.

Water supply

The DLAPC states that the proposed South Westmeath Regional Water Scheme will provide a new intake from Lough Ree, and thus provide a long-term supply for Creggan.

Wastewater

Existing development at Kilmacuagh, Garrycastle Industrial Estate, Athlone Institute of Technology and a number of housing estates is served by an existing sewer. A new foul sewer network is proposed to serve the entire plan area. The master sewerage plan for Creggan envisages construction of a new pumping station to the west of the Dublin-Athlone railway line in Clonbonny. This pumping station will connect to the existing wastewater treatment plant at Golden Island. The capacity of the Athlone Water Treatment Plant has recently been augmented.

Flooding

There is one recorded recurring flood event within the Creggan area, namely on lands to the north of the area within the catchment of the AI River. In order to alleviate the risk of flooding at this location, a tract of land extending to 17 ha in area has been reserved free from development by the plan.

1.4.5 Air quality

The main source of air pollution in the area is emissions from vehicles using the adjacent road network. There are some minor emissions from nearby commercial activities.

A cutover bog in the adjacent area may lead to dust generation and dispersion in the area particularly in drier weather. The majority of the remaining surrounds are Agricultural and may have dusts and odour implications.

1.4.6 Material assets

Transport infrastructure

The north-eastern portion of the lands is crossed by the M6 motorway and associated M6/N6 interchange providing access to the lands. Apart from the M6, the main roads within the plan area are the N62-58, the N62-59, the R446 and the R916. The L54102 and L54103 serve the residential enclave to the east of the M6 interchange. The Clonbonny Road (L5410) abuts the eastern boundary of the plan area and provides the principle access to the National School. The R916, which is an important link to the N55, bounds the area on its western side.

The disused Mullingar-Athlone railway line abuts the northern boundary of the lands. The southern portion of the lands is crossed by the active Dublin – Galway rail line.

Utilities

The Dublin Galway gas pipeline traverses the southern portion of the lands. This imposes restrictions on development in its vicinity.

There is a 38Kv overhead power line traversing the area.

Social infrastructure

Clonbonny National School is located along the south-eastern boundary of the plan area.

Land-uses

The predominant use of the lands within the plan is agricultural and as such the area is rural in nature.

There is a concentration of enterprise and employment related development located within Garrycastle Business Park, to the north of the plan area, and a secondary commercial area centred at the Creggan roundabout.

1.4.7 Cultural heritage

Protected structures

There are no Recorded Protected Structures within the plan area, however there are four structures listed as being of regional importance on the National Inventory of Architectural Heritage:

- Two freestanding battlemented towers on square-plan, built c.1820, formerly part of the Creggan House estate, which has since been demolished.
- Two former main entrance gates serving Creggan House (now demolished), built c.1815.
- A group of four attached single-storey former worker's houses associated with Creggan House (now demolished), built c.1900. These have been partially damaged by fire.
- Single-arched railway bridge located on the Clonbonny Road built c.1859.

There are five further structures of heritage interest:

- Former entrance to Creggan House
- Former walled garden to Creggan House
- Vernacular Farmhouse

Archaeology

There are six recorded archaeological sites located within the boundaries of the Creggan LAP. Of these, WM029-026 has now been developed as part of the IDA Business Park and WM029-034 has been partially tested prior to the construction of a gas pipeline. The remaining four sites remain preserved in-situ. Four areas of archaeological potential also lie within the LAP study area, corresponding to watercourses and bog. To date the NIAH structures have yet to be added to the Register of Protected Structures for County Westmeath.

1.4.8 Landscape

The majority of the lands are characterised by an undulating landscape of small hills and shallow valleys. There are a number of localised high points in the north-east corner within the IDA lands, and another in the central eastern area south of the N6. In general terms the lands fall from a high point in the north-east to the Shannon Flood Plains to the south west.

The IDA lands contain a managed business park type landscape through which the River AI and attendant treeline and hedgerows pass. There are a number of other significant clusters and lines of trees dispersed across the site including mature tree stands adjoining

the railway and river corridor. Various other areas have primary and secondary tree coverage.

1.4.9 Inter-relationships of the above

Inter-relationships occur between several of the above categories. The most important inter-relationships in this case arise from the interdependence of protected habitats, plants and animals, water quality including hydro-geology/ groundwater, and human health.

1.5 Environmental criteria

In order to assess the impacts of the plan, criteria have been set out against which policies and objectives are assessed. The criteria seek to protect and enhance the existing environment of Creggan and surrounding area.

1.5.1 Biodiversity, flora and fauna

- To protect existing, valuable species and habitats in the area.
- To protect the integrity of designated sites in, adjoining or near the area.
- To connect valuable areas of biodiversity in the area.

1.5.2 Population and human health

- To protect existing residential amenity.
- To provide active community and residential recreation and amenity.
- To protect important elements of community identity.
- To minimise the risk of accidents to the population from traffic or transport.
- To minimise risk of accidents from activities or development in the area.
- To protect against air or other pollution from traffic or other activities in the area.
- To protect against contamination of the local groundwater and local water supply.

- To protect against adverse effects from noise or vibration from traffic or activities in the area.
- To protect against adverse effects from construction or other development activities.
- To avoid / minimise the risk of flooding to the resident and working population.
- To protect existing residential and community infrastructure and services.
- To provide appropriate new community infrastructure and services to support new development.

1.5.3 Soil

- To protect local soil and bedrock
- To carry out remedial action where damage has already occurred to the soil or bedrock.

1.5.3 Water

- To protect against pollution of the groundwater.
- To minimise surface water run-off.
- To protect against the deterioration of water quality in the water bodies.
- To provide quality water supply.
- To minimise loss of water from infrastructure in the area.
- To protect any damage to water quality arising from flooding.

1.5.4 Air

- To protect existing air quality.
- To minimise levels of anthropogenic pollutants resulting from energy use in the area.
- To minimise use of private transport.
- To maximise use of walking cycling and public transport.
- To maximise use of energy from sustainable or "green" sources.
- To maximise use of energy efficient design, construction and management of buildings.

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1.5.5 Material assets

- To ensure efficient and sustainable development and use of strategic urban land.
- To ensure sequential and phased growth of the town fringe.
- To comply with strategic vision for lands within the context of Athlone Town.
- To avoid / minimise risk of flooding to buildings and structures.
- To minimise traffic congestion of local and surrounding roads and junctions.
- To maximise use of public transport.
- To ensure a permeable and managed urban route structure.
- To ensure appropriate provision and timing of public transport.
- To ensure appropriate provision and timing of storm water drainage.
- To ensure appropriate provision and timing of foul water drainage and treatment.
- To ensure appropriate provision and timing of water supply.

1.5.6 Cultural heritage

- To protect existing and potential archaeology and its context.
- To protect and enhance existing built heritage.
- To protect important elements of local cultural identity.
- To ensure that the archaeological and built heritage of the wider area is not adversely effected through the visual impact of new development.

1.5.7 Landscape

- To retain and enhance important elements of existing landscape quality.
- To connect important aspects of landscape as part of a green infrastructure.
- To ensure that the general landscape character of the wider area is not adversely effected through the visual impact of new development.
- To protect and enhance the quality, character and features of waterways.

1.6 Consideration of alternative plans

Three planning and development alternatives for development were identified by Westmeath County Council. The evolution of the area without the implementation of a plan, the “Do nothing” scenario, was also considered in order to provide comparison with the plan alternatives.

The alternatives were:

- Alternative A - Developing the Creggan lands based on the DLAPC vision.
- Alternative B – Selecting a location closer to the town centre with direct access onto M6.
- Alternative C – Availing of existing, zoned enterprise and employment lands within statutory plans for the area, ie. Athlone Town Plan & Athlone Environs Plan.

Evolution without implementation of the plan (“Do nothing”)

This scenario is based on the evolution of the area in the absence of significant development.

It was considered this could result in:

- Continuous decline in population.
- Devaluation of existing cultural heritage.
- Continued focus on suburban development.
- Fewer options for living/working in the area.
- Failure to take advantage of proximity to public transport.

Alternative A emerged as the preferred strategic alternative for the following reasons:

- Having regard to the siting of Lough Ree immediately north of the town, the River Shannon floodplain and past incidences of seasonal flooding occurring south of the town, it is considered that the future expansion of Athlone will be concentrated on lands to the east of the existing urban area.
- Creggan area represents the largest undeveloped land bank in the town regarded as being suitable to meet future enterprise and employment needs for the Gateway.

The assessment of Alternatives B and C, in the context of the Environmental Report, is summarised as follows:

Alternative B – Selecting a location closer to the town centre with direct access onto M6.

Sufficient lands to fulfil the vision of the Creggan plan are not available at the scale required closer to the town centre, owing to pre-existing commitments in adopted or proposed Local Area Plans and by reason of flood risk constraints.

Alternative C – Availing of existing zoned enterprise and employment lands within statutory plans for the area, ie Athlone Town Plan & Athlone Environs Plan

Having regard to the scale of lands required in a single land bank considered necessary to fulfil the vision of the plan, in regard to the expansion of enterprise and employment and the development of a major centre of international profile, it was considered that Alternative B would not provide suitable or sufficient lands.

1.7 Assessment of the effects of the plan

1.7.1 Categories of plan objectives

The vision, strategies and guidelines of the DLAPC were identified and grouped into six categories of plan objectives. The plan objectives were considered against the range of environmental criteria described above.

The categories are as follows:

- Land use and development
- Natural and built heritage
- Walking and cycling
- Transport and traffic
- Open space
- Community and social infrastructure

The likely effect of the plan objectives was recorded in a matrix format (see appendix I), indicating positive effect, negative effect, no effect and uncertain effect, as follows:

Type of Effect	Description
+ Potential positive effect	Likely to have a positive effect on the environment.
- Potential negative effect	Likely to have negative impact on the environment.
0 No effect	No effect or neutral effect.
◊ Uncertain effect	The likely effect on the environment is uncertain.

The assessment is also based on the existing understanding of the state of the environment, problems and vulnerability. Given the nature of the process, the significance of some effects is unknown and unlikely to be known without further elaboration of plan objectives or further detailed research. In many cases, this level of detail is more appropriate to Environmental Impact Assessment than Strategic Environmental Assessment.

The assessment provides a structure for mitigation measures necessary to address any likely negative effects.

1.7.2 Land use and development

The plan objectives for land use and development are likely to have mixed effects. There are a significant number of effects that are uncertain.

Uncertain effects are due to:

- Uncertainty regarding the urban and landscape structure and concepts for the plan.
- The need to consider certain effects when the more detailed nature and extent of projects becomes known (Development management/EIA stages).
- Gaps in our understanding of the environment.

Many of the effects of development on biodiversity, flora and fauna and designated sites are uncertain as the plan does not prescribe an overall urban and landscape structure against which proposals can

be assessed. Within the landscape framework, the plan identifies the biodiversity of the river and railway corridors and these will be key features for the landscape structure.

The matrix highlights under population and human health effects the following:

- Potential for increase in accidents arising from increased traffic levels,
- Potential for reduction in air quality deriving from increased traffic levels related to new development,
- Potential for adverse effects from construction,
- Potential risk from flooding,
- Potential for adverse effects on existing community infrastructure.

Many of the effects concerning soils and water are uncertain. This reflects uncertainty regarding the urban and landscape structure and concepts and the need to consider certain effects when the more detailed nature and extent of projects becomes known (Development management/EIA stages).

In relation to air quality, the matrix highlights potential for reduction in air quality deriving from increased traffic levels, related to new development and potential for anthropogenic pollutants deriving from design, construction and management of buildings.

Many of the effects relating to material assets are uncertain. This is partly because the plan does not set out a landscape and urban structure concept, and partly because of the need to consider certain effects when the more detailed nature and extent of projects becomes known (Development management/ Environmental Impact Assessment (EIA) stages).

1.7.3 Natural and built heritage

Overall, the plan objectives for natural and built heritage are likely to have positive effects on the environment. There are a number of

objectives that are likely to have neutral effects. The effects of the natural and built heritage objectives on undiscovered archaeology remain uncertain.

1.7.4 Walking and cycling

Overall, the plan objectives for walking and cycling are likely to have positive effects on the environment. There are a number of objectives that are likely to have neutral effects. Effects of the walking and cycling objectives on undiscovered archaeology will remain uncertain.

1.7.5 Transport and traffic

The plan objectives for transport and traffic are likely to have mixed effects. The upgrade of the roads capacity and existing junctions serving the area are intended as objectives in the plan. Notably, public transport objectives are, overall, likely to have positive effects whereas objectives for roads and infrastructure which would promote use of private transport are likely to have potential negative effects, and will require mitigation. A number of effects are considered uncertain given the level of detail of proposals in the DLAPC. These issues may be clarified during the LAP process or may be more appropriately addressed in the development management/Environmental Impact Assessment stages.

In relation to biodiversity, the matrix highlights the potential negative effects of the road infrastructure on local flora and fauna, outside of the protected sites. Under population and human health, there is potential for negative effects on residential amenity arising from potential congestion of the local road network, an increased risk of accidents from higher traffic levels, potential reduction in air quality deriving from increased traffic levels related to new development, potential impacts on water quality arising from run-off from roads, streets and transport infrastructure.

In terms of uncertain effects, it was unclear whether transport and traffic objectives would have positive effects overall for efficient,

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sustainable, sequential and phased development. The timing and delivery of rail transport is considered uncertain as responsibility for the delivery of this infrastructure will rest with the transport authorities. The rail station has not yet been included as an objective in relevant, higher-tier plans and a commitment to provide or support it has not been secured from the transport authorities.

Effects of the transport and traffic objectives on undiscovered archaeology will remain uncertain.

1.7.6 Open space

Overall, the plan objectives for open space are likely to have positive effects on the environment, particularly in relation to population and human health, air, cultural heritage and landscape. There are a number of objectives that are likely to have neutral effects. A potential, negative effect may occur where areas of significance for biodiversity, flora and fauna are disturbed or otherwise damaged by amenity and cycle and walkways.

1.7.7 Community and social infrastructure

In general, the plan objectives for community and social infrastructure are likely to have neutral or positive effects on the environment. Uncertain effects stem from uncertainties as to the broad location, nature and extent of the infrastructure. Uncertainty remains, therefore, in relation to potential effects on local biodiversity, flora and fauna, soil, and location in relation to public transport, potential congestion and decline in air quality arising from traffic generation. Effects of the community and social infrastructure on aspects of cultural heritage will remain uncertain.

1.8 Mitigation of effects

This section reviews the measures that have been adopted to address the likely significant effects or impacts of the plan. Mitigation may involve preventing impacts altogether, reducing their magnitude as much as possible and/or probability of occurrence, or putting in

place measures to remedy effects after they have occurred, or to compensate for them by providing environmental benefits elsewhere.

The assessment of the environmental effects of the plan revealed some incompatibilities between environmental criteria and the development objectives of the plan. For this reason, measures that seek to mitigate the effects of these objectives were formulated. In instances where objectives are thought to have uncertain environmental effects, additional policies may be formulated where appropriate.

It is recommended that the following objectives or measures are included or in some cases clarified in the plan:

- Preparation of a landscape and urban structure concept for the plan area to provide greater certainty as to the location, nature and extent of land uses and development.
- Objectives for the protection and restoration of Crosswood Bog and measures to ensure major development proposals in adjacent areas, particularly in Character Area B, do not impact on the existing groundwater regime of the bog habitat.
- All of the recorded archaeological sites and buildings of architectural merit (including their environs), as highlighted in this report, be avoided and protected from any impact during the proposed development of Creggan LAP.
- Detailed, development specific archaeological and architectural assessments should be undertaken in advance of any future development. These should include the results of or recommend the undertaking of non-intrusive surveys such as topographical, geophysical and architectural survey and intrusive investigations such as archaeological test trenching. Archaeological monitoring of all topsoil stripping is also recommended for all greenfield areas within the Creggan LAP study area.
- An objective to have regard to the Shannon Regional Fisheries Board Guidelines for Watercourses in Urban Environments in the preparation of an overall landscape plan.
- Objectives for assessment of the potential cumulative effects of vehicular traffic on the local and strategic road network.
- An objective to ensure design, construction and management of the road network to prioritise pedestrians, cyclists and public transport.
- An objective to require construction management plans, prepared as part of the later development management stages.
- An objective to require preparation of a detailed flood risk assessment(s) (FRA) at the later development management/EIA stages.
- An objective to provide an appropriate buffer between proposed development and established community infrastructure (National School) in Character Area C.
- An objective to prioritise a bus-based public transport service at the earliest phases of development and to seek the earliest delivery of rail services to augment this service.
- To provide for sustainable movement.
- Objectives to ensure sustainable design, construction and management of buildings including ecological foot-printing of major development proposals as part of any EIA process.
- Objectives for appropriate measures to ensure any hitherto undiscovered archaeological remains are properly recorded and resolved.
- Objectives to ensure the effects on new streets and roads on local flora and fauna are minimised.
- Objectives to augment green corridors along new roads and streets.
- An objective to require the integration of sustainable urban drainage measures in the landscape structure of the area.
- An objective to ensure that cycleways and walkways are located and designed in such a way as to protect existing biodiversity, flora and fauna, including an objective to ensure any proposed amenity route across or through Crosswood Bog will be subject to further detailed assessment in consultation with the National Parks and Wildlife Service.
- An objective to locate community and social infrastructure where walking and cycling and use of public transport can be maximised.

1.9 Monitoring

The purpose of monitoring is to ensure that measures taken to prevent, reduce or off-set potential significant adverse effects on the environment are effective, and to reveal any unforeseen effects.

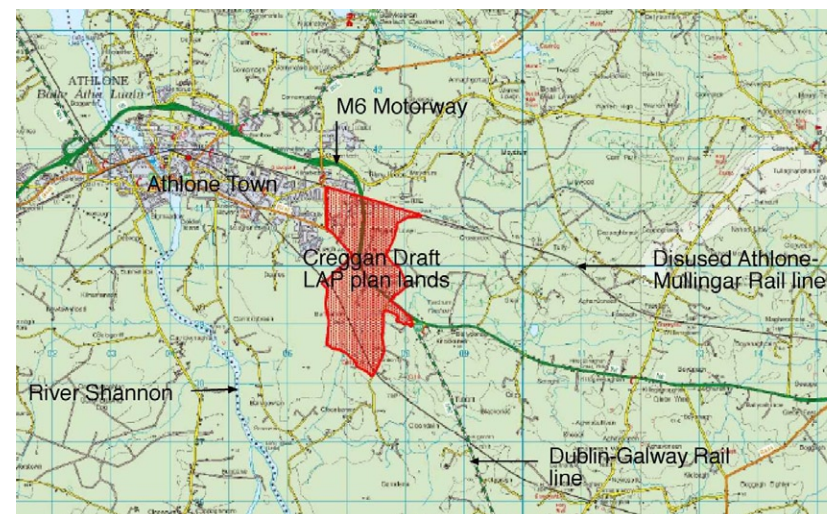
It is recommended monitoring should focus on likely significant effects, such as potential traffic impacts, visual/ landscape impacts, water quality, including groundwater, protected habitats, plants and animals and the inter-relationships between these categories.

A detailed programme for monitoring will be set-out for implementation by the Council.

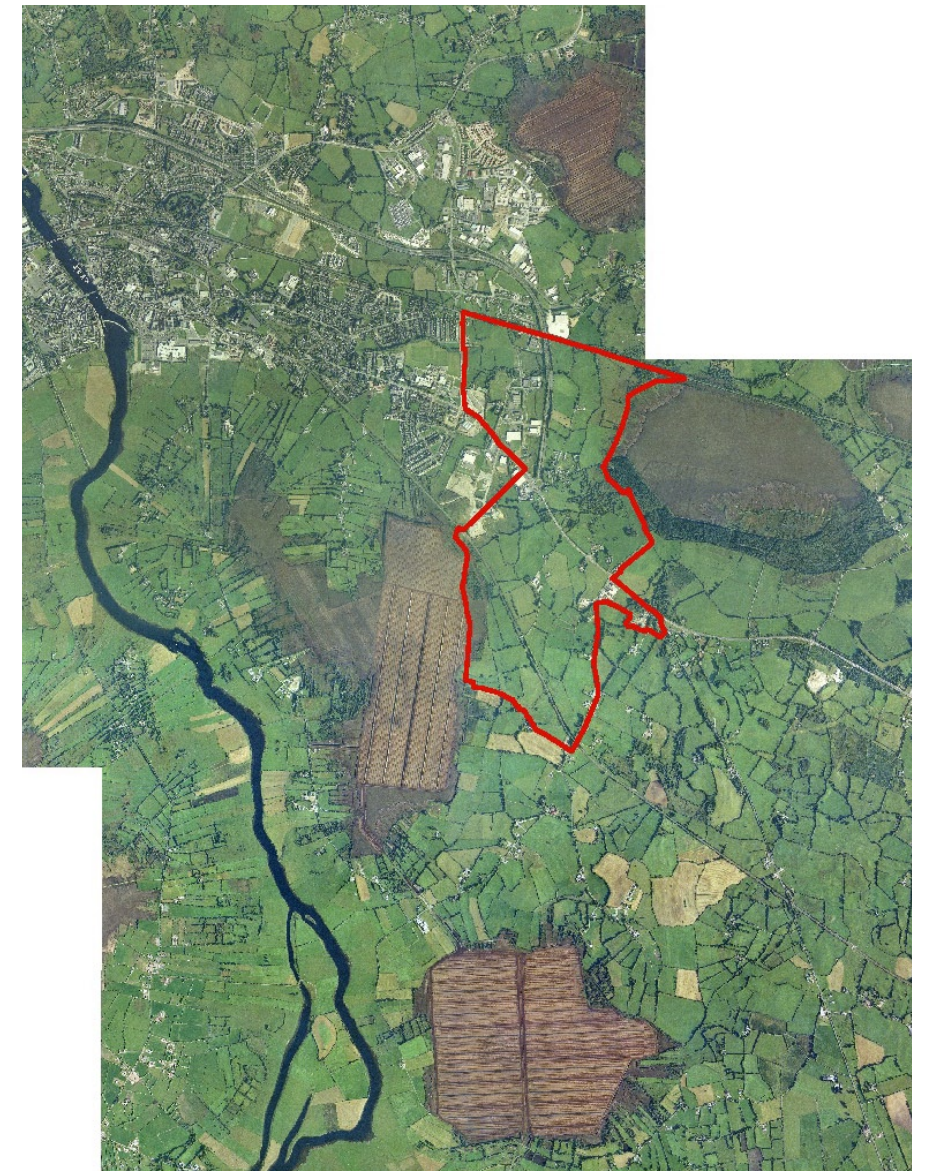
1.10 Conclusion

The strategic environmental assessment indicates that the plan may have a combination of negative, neutral and positive effects. Where negative effects are expected, mitigation measures are identified, including measures to prevent, reduce, or off-set adverse effects.

The assessment also highlights areas where effects are uncertain. Accordingly, areas where further more detailed study may be required on foot of specific development proposals are also identified.



Creggan Draft LAP lands and wider context - OS Discovery Series



Creggan Draft LAP lands and wider context - Ortho-aerial

2 Introduction

2.0 Introduction

Westmeath County Council has prepared a Draft Local Area Plan for Creggan (DLAPC). A screening exercise has established that a full SEA (Scoping and Environmental Report) is appropriate given the implications for the future planning and development of the area.

Loci and a team of sub-consultants has been commissioned by Westmeath County Council to undertake a Strategic Environmental Assessment (SEA) of the DLAPC. The report has been prepared in accordance with SEA Guidelines and the provisions of the SEA Regulations: [the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. 435 of 2004), and, the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. 436 of 2004)].

This report should be read in conjunction with the DLAPC, and with the Appropriate Assessment Report prepared in parallel to this report by ecological consultants in compliance with the requirements of the Habitats Directive.

2.1 SEA Process

Article 2 of the EU Directive defines environmental assessment as “the preparation of an environmental report, the carrying out of consultations, the taking into account of the environmental report and the results of consultations in decision making and the provision of information on the decision....”

The purpose of the Environmental Report is to evaluate the likely significant environmental effects of implementing a plan and to identify possible alternatives and mitigation measures. The information to be provided in the Environmental Report is described in Annex I of the SEA Directive and can be summarised as follows:

- An outline of the contents and objectives of the plan or programme, and its relationship with other plans and programmes;
- Existing environmental conditions of the study area, including
- existing environmental problems, and the likely evolution of this area in the absence of the programme or plan;
- Environmental characteristics of the areas to be significantly affected;

- Likely significant effects on the environment, including issues such as bio-diversity, population, human health, flora and fauna, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological, landscape, and the interrelationship between these factors;
- Mitigation measures;
- Reasons for the selection of alternatives considered, and the methods of assessment undertaken;
- Description of monitoring measures, and
- Non-technical summary.

Prior to adoption, a draft plan and associated Environmental Report must be made available to the general public, prescribed environmental authorities, and where necessary, affected Member States, and submissions invited.

A statement demonstrating how environmental considerations have been integrated into the plan, how the Environmental Report and the outcome of submissions were taken into account, and the reasons for selecting the plan as adopted in light of other reasonable alternatives must also be provided.

2.2 Local Area Plan for Creggan

The DLAPC area is located in the Athlone Environs area and comprises lands within the following townlands; Garrycastle, Creggan Lower, Creggan Upper, Bunnahinly, Clonbonny and Kilmacuagh (Castlemaine). The area is located to the east of the built up area of Athlone, approximately 2 km from the town centre. It is bounded to the north by the disused Mullingar-Athlone Railway, and it is bisected by the Old Dublin Road (N62) and the M6 Dublin/Galway motorway. The Dublin-Galway railway line also bisects the southern part of the area.

The Westmeath County Development Plan, 2008-2014, and the Athlone Town Development Plan, 2008-2014, include as an objective, the preparation of a local area plan (LAP) for lands at Creggan. The preparation of the DLAPC is to be considered in the wider regional and national framework of the Midlands Gateway, of which the Creggan lands have been identified as a ‘developing area’. The DLAPC thus aims to promote the development of the Creggan lands, in conjunction with the town, and to provide for the level of enterprise and commerce, commensurate with the status of Athlone as a ‘Linked Gateway’, in accordance with the National Spatial Strategy designation for the town.

The DLAPC determines the broad land use, movement and landscape and built form principles, strategies and guidelines for the area. This Environmental Report is based on these broader elements only.

The DLAPC aims to ensure the proposed development of the area will realise, in summary, the following vision (section 1.4 of DLAPC):

- An integrated enterprise zone with an international profile.
- A centre of excellence for education, research, enterprise and innovation.
- A world-class business and convention centre.
- A premium tourist destination with accommodation and cultural attractions.
- An integrated transport system.

The DLAPC also describes an urban design and landscape framework with the following elements:

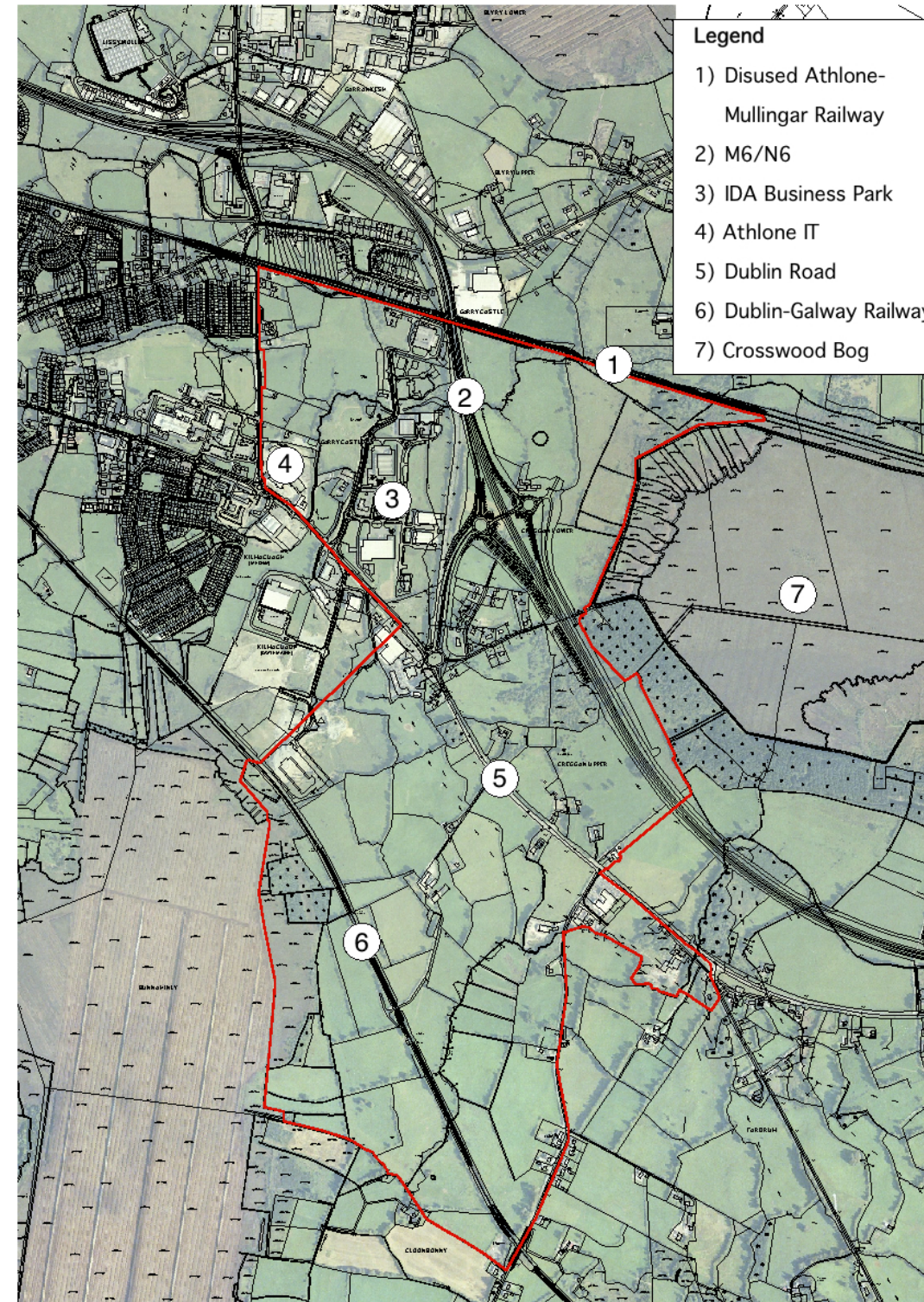
- A permeable and legible spatial structure with good accessibility and provision for sustainable transport modes.
- A hierarchy of accessible and secure public spaces.
- An open space network.
- A heritage strategy for archaeology, natural and built environment.
- Visual interest and variety through development of key focal places.
- Innovation and quality of design.
- Quality of public and private open space.
- Protection and integration of existing environmental features.
- Consideration of mix of uses to promote the vision of sustainable development.

Timescale

While the DLAPC has a lifespan of 6 years, phasing and delivery is expected to extend to fifteen years to 2025.

Development capacity

Development of lands within the LAP has a potential employment range between 14,300 – 18,500 persons, if the plan is developed to completion.



Creggan Draft LAP lands

3 Methodology

3.0 Methodology

The methodology employed for the purposes of the assessment is derived from the requirements of the SEA Directive as transposed into Irish law and the Guidelines for Regional Authorities and Planning Authorities on the implementation of the SEA Directive published by the Department of the Environment, Heritage and Local Government. This process involved scoping the environmental issues to be included in the report, undertaking a baseline study on the existing state of the environment within the study area, the consideration of alternative plans, the environmental assessment of the preferred plan, and devising measures to mitigate negative environmental effects. Finally, monitoring proposals were devised in the event that any significant environmental effects have not been anticipated.

3.1 Screening

As part of the process of preparing a proposed LAP for the Creggan lands, and having regard to the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. No. 436 of 2004), Westmeath County Council has considered whether to carry out a Strategic Environmental Assessment (SEA) of the proposed plan. The assessment was based on the criteria set down in the SEA Guidelines and Annex II of the SEA EU Directive for determining likely significance of environmental effects. The screening of the relevant legislation and guidelines determined that SEA was appropriate due to a range of potentially significant effects related to the nature, extent and scale of development envisaged by the DLAPC and, in addition, potentially significant effects on natural and built heritage within, adjoining and near the DLAPC area.

3.2 Scoping

Scoping the contents of the Environmental Report involved consulting the prescribed environmental authorities and considering their recommendations on the contents of the environmental report. In addition, the relationship between the DLAPC and relevant national, regional and local plans was established.

3.3 Baseline study

A baseline study at different levels of detail was undertaken of the DLAPC area within the context of Athlone Town and its eastern environs in order to establish the existing environmental context of the plan. The contents of this study have been derived from the requirements of the SEA Directive and include a description of the existing bio-diversity, population, flora and fauna, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage and the landscape of the study area, as existing.

For the purposes of this report a broad contextual study was conducted for Athlone eastern environs followed by more detailed analysis of the study area. The research was undertaken by Loci in conjunction with Natura Environmental Consultants and Irish Archaeological Consultants.

The information collated is primarily based on existing data available at the time of the report. Key sources include national and local statistical information, reports from environmental and archaeological agencies, local studies prepared by or on behalf of the Local Authority and data from Environmental Impact Statements prepared in respect of recent development proposals in the area.

3.4 Environmental criteria

In order to assess the impacts of the plans, environmental criteria were established for the study area, against which policies and objectives were tested. The criteria are primarily based on the findings of the baseline study and seek to protect and enhance the existing environment of the DLAPC area, Athlone town and its eastern environs.

3.5 Consideration of alternatives

At an early stage in the preparation of the DLAPC three, reasonable planning and development alternatives for development were identified by Westmeath County Council. These considered alternative locations outside the plan area, within the reasonable development

boundary of the town. The alternatives were considered at a preliminary and strategic level. The preferred alternative (Alternative A) was then chosen and developed to greater detail. The evolution of the area without the implementation of a plan, the “Do nothing” scenario was considered initially to provide comparison with the plan alternatives.

The alternatives were:

- Alternative A - Developing the Creggan lands based on the DLAPC vision.
- Alternative B – Selecting a location closer to the town centre with direct access onto M6.
- Alternative C – Availing of existing, zoned enterprise and employment lands within statutory plans for the area, ie. Athlone Town Plan & Athlone Environs Plan.

3.6 Environmental assessment of the plan

The main objective of this report is to assess the likely significant environmental impacts of the DLAPC. This process involves establishing the effects of the plan on the existing agricultural environment in terms of bio-diversity, population, human health, flora and fauna, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological, landscape, and the interrelationship between these factors. These assessments are presented as a series of tables that establish the compatibility of the DLAPC with environmental criteria formulated for the area.

3.7 Mitigation

Where the objectives of the DLAPC were found to be incompatible with environmental criteria, the objectives and policies of the draft plan were adjusted appropriately. In addition, where it is beyond the scope of this assessment to establish the full environmental impact of future developments, mitigation measures have been identified which seek to ensure the environmental criteria formulated for the area are not compromised.

3.8 Monitoring

The SEA Directive requires that the environmental effects of the implementation of a plan be monitored “in order, inter alia, to identify at an early stage unforeseen adverse effects and to be able to undertake appropriate remedial action”. For the purposes of the plan, structures and arrangements were identified for the monitoring of the implementation of the plan and its environmental effects.

3.9 Difficulties encountered in compiling the required information

The SEA Guidelines state that the SEA process “does not require major new research”. As such, the Environmental Report was prepared and informed by available data sources and published reports.

Areas where there was insufficient data available or where the level of detail is not sufficient for the purpose of detailed or quantifiable assessment are as follows:

- The DLAPC does not set out a specific urban and landscape structure in spatial terms. This limits the extent to which potentially significant effects on the environment arising from the plan can be quantified at this stage. Specific proposals may, therefore require more detailed environmental assessment as they are brought forward.
- Data on potential traffic impacts is not available. Detailed traffic impact assessment of specific proposals will be required to be undertaken as and when they arise having regard to the potential cumulative effects of such proposals likely to result from full build-out of the lands.
- Site specific data on population and human health is not available.
- Completed Groundwater Protection Scheme Data was not available. Preliminary data available from the GSI has been utilised however further hydro-geological studies may required to be undertaken to assess any potential impacts of development proposals on the integrity of the existing hydro-geological regime, particularly in so far as it may pertain to Crosswood Bog.
- The licence archive within the National Monument service was not available for public consultation due to re-location.

4 Planning and policy context

4.0 Planning and policy context

The SEA Directive requires an analysis of the DLAPC's 'relationship with other relevant plans and programmes' (Annex 1a), and of the 'environmental protection objectives....which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation' (Annex 1e). A list of the relevant policies, plans and Environmental Protection objectives was compiled and their requirements analysed in this section.

4.1 Planning hierarchy

The proposed DLAPC should be guided by a hierarchy of plans and strategies at the EU, national and local levels. These plans and strategies include:

EU Directives

- Habitats Directive (Council Directive 92/43/EEC).
- Birds Directive (Council Directive 79/409/EEC).
- SEA Directive (Council Directive 2001/42/EC).
- Water Framework Directive (Council Directive 2000/60/EC).
- The Air Quality Framework Directive (Council Directive 96/62/EC).
- European Union: 6th Environmental Action Programme (2001-2010).
- Groundwater Directive (Council Directive 2006/118/EC).
- Floods Directive (Council Directive 2007/60/EC).
- Environmental Liability Directive (Council Directive 2004/35/EC).

National legislation

- Environmental Objectives (Surface Waters) Regulations, 2009 (SI no. 272 of 2009).
- European Communities Environmental Objectives (Groundwater) Regulations, 2010 (SI no. 9 of 2010).
- Urban Wastewater Treatment Regulations, 2004.
- Wildlife Act, 1976.
- Wildlife (Amendment) Act, 2000.
- Water Services Act, 2007.
- Air Quality Standards Regulations, 2002.
- Ozone Regulations, 2004.

National Plans and Guidelines

- National Biodiversity Plan (2002).
- National Spatial Strategy (2002-2020).
- National Development Plan 2006-2012.
- Ireland's National Climate Strategy 2007-2012.
- Housing Policy Framework: Building Sustainable Communities.
- Delivering Homes, Sustaining Communities.
- Appropriate Assessment of Plans and Projects in Ireland, DoEHLG (2009).
- The Status of EU Protected Habitats and Species in Ireland, NPWS/ DoEHLG (2008).
- Telecommunications Antennae and Support Structure: Guidelines for Planning Authorities (1996).
- The Provision and Quality of Drinking Water in Ireland: A Report for the Years 2007-2008, EPA (2009).
- Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas (2009).
- The Planning System and Flood Risk Management: Guidelines for Planning Authorities (2009).
- National Heritage Plan (2002).
- Architectural Heritage Protection: Guidelines for Planning Authorities (2004).
- National Climate Change Strategy (2007-2012).
- Retail Planning Guidelines for Planning Authorities (2005).
- Urban Wastewater Discharges in Ireland for Population Equivalents
- Greater than 500 Persons, EPA (2009).
- Management of Noxious Weeds and Non-native Invasive Plant Species on National Roads, NRA.
- Department of Transport 2020 Vision: Sustainable Travel and Transport Public Consultation Document (2009).
- Recommendations on the Nature and Extent of Unauthorised Waste Activity in Ireland, EPA (2005).
- State of the Environment Report, 2008.

Regional Plans

- Midlands Regional Planning Guidelines 2004/ Draft Midlands Regional Planning Guidelines 2010-2022.
- Shannon International River Basin District (RBD) Management Plan.

- Strategic Development Framework for the Midlands Gateway – Developing a World Class knowledge-based Competitive Gateway.
- Water Supply Project – Dublin Region, 2009.

Local Plans

- Athlone Town Development Plan, 2008-2014.
- Westmeath County Development Plan, 2008-2014.
- Westmeath County Noise Action Plan.
- Westmeath Retail Strategy.
- Draft Local Area Plan for Creggan, Westmeath.
- Draft Local Area Plan for Loughandonning (in preparation).
- Roscommon County Development Plan 2008-2014.

Project level

- Environmental Impact Assessment.
- IPPC Licensing.
- Planning permission.
- Building Regulations.

4.2 National planning context

4.2.1 National Spatial Strategy

The strategy designates Athlone as part of the linked Midlands Gateway. The role of the Gateway is to drive the development of the wider region, including surrounding towns, villages and rural areas to achieve sustainable and more balanced regional development. The spatial structure "must be supported by policies aimed at enhancing the attractiveness of areas for people".

The Midlands Gateway envisages the co-ordinated development of the three towns of Athlone, Tullamore and Mullingar in the Midlands Region. They are reasonably proximate to one another, strategically located on east-west road, rail, energy and communications links, contain complementary infrastructure, and individually and collectively

have substantial capacity for development in services terms. For example, Athlone contains the Institute of Technology, a range of employers and important retail functions. Mullingar and Tullamore have important healthcare and retail functions. Improved accessibility to these facilities would enable them to be shared better and would allow the region to be seen as having the type of infrastructure and critical mass comparable to a larger urban centre.

4.2.2 National Development Plan, 2007-2013

The plan identifies the strengths of the Midlands Gateway including its strategic location in the centre of the country; its relative proximity to Dublin on newly completed national roads (M/N/4/6); the prospect of excellent road connections to Cork, Limerick and Galway when the major inter-urban routes are completed by 2010; upgraded rail links to Dublin; improving social infrastructure, especially healthcare facilities; the Athlone Institute of Technology; and a good quality of life within the three towns that make up the Gateway. Development challenges include the relatively small size of the towns and implementing an agreed development strategy for the towns on a shared basis.

Key development issues and investment requirements over the period of the plan to the Midlands Gateway include:

- Strengthening the R&D capacity of Athlone Institute of Technology and its linkages to industry/employers in the Region.
- Development of enhanced road and public transport links between the three towns in the Gateway.
- Development of strategic local roads and water services capacity to facilitate and attract development to the towns in the Gateway.

4.3 Regional planning context

4.3.1 Midland Regional Planning Guidelines, 2004

The guidelines seek to implement the main aspects of the NSS and state that stronger physical and communication connections between the towns will be required. While each of the three towns have generally been planned for on a separate basis, certain specialisations are emerging, such as education and retailing in Athlone.

To implement the NSS and the linked gateway, a critical priority for the region is to improve north-south connections, with a major opportunity to establish good physical links between Athlone and Mullingar that at present do not exist in relation to either roads or public transport.

4.3.2 Draft Midland Regional Planning Guidelines 2010-2022

The key aim of the revised Guidelines is to continue to drive the implementation of the linked gateway envisaged in the NSS within a broader context of a polycentric model centred on the linked gateway and the principle towns in the region.

Related goals, inter alia, seek to ensure that strategic development of the region works to conserve its biodiversity and habitats, and to integrate high quality built and physical environment with supporting physical and social infrastructure.

The Guidelines identify key economic sectors and ways in which they can realise their potential. In this regard it is noted that Athlone, having regard its location, high levels of accessibility including motorway access to Dublin Airport, public transport connections by road and rail and broadband infrastructure availability offers potential for the establishment of international trading alongside ICT related activities, pharmaceuticals and education. The Guidelines retain the objective to establish a Strategic Development Zone focussed on the linked gateway.

Within the Gateway Creggan has been identified as a 'developing area' by the Department of Environment, Heritage and Local Government.

4.3.3 Westmeath Retail Strategy, 2007

The strategy identifies Mullingar and Athlone as the two principal town centres in the County, which form the first tier within the retail hierarchy of County Westmeath. These towns exhibit a number of higher order retail, service and specialist functions.

Additional convenience and comparison retail floor space should be provided where possible within the existing town centres. Limited convenience floor space may be appropriate in neighbourhood centres to serve existing and new housing areas.

The development of local shops should be encouraged in residential areas in the suburbs of the larger estates in Athlone as they play an important role in providing for daily top up shopping. Such developments should be easily accessible to all sections of society.

4.3.4 Strategic Development Framework for the Midlands Gateway – Developing a World Class knowledge-based Competitive Gateway

This was prepared for Westmeath and Offaly County Councils in December 2006. It develops a vision for the Midlands Gateway to 2020 based on "the development of a world-class, knowledge-based and competitive gateway, underpinned by a quality urban structure and environment, excellent infrastructure and a visionary leadership, which maximises quality of life for its citizens."

The framework recommends that sectoral clusters be developed and expanded by the IDA (Ireland) and Enterprise Ireland. Athlone should concentrate on ICT-related activities, pharmaceuticals and related activities, and education.

4.3.5 County Westmeath Hedgerow Survey Report, 2005

The need for careful planning, management and conservation of hedgerows was identified in the County Westmeath Hedgerow Survey Report, 2005. It recommends the management and conservation of certain hedges (e.g. townland boundary hedges and hedges that have high species richness), and rejuvenation of hedgerows (hedge laying, coppicing, infilling of gaps).

4 Planning and policy context

4.3.6 Westmeath County Development Plan, 2008-2014

A key aim of the plan is to facilitate the provision of sufficient employment opportunities to cater for the needs of the population of the town and its hinterland, and to realise the opportunities which the county's location opens up as a regional and national centre of trade, business and tourism.

The plan identifies the development of public transport linkages between the Gateway towns and their hinterlands as an important infrastructure goal. This includes the re-opening of the Mullingar-Athlone railway line.

The plan recognises the need to consider the link between the N6 and Mullingar/Tullamore, the link between Mullingar and Athlone (Ballymahon Road); and the link between Athlone and Tullamore. These links are crucial for development of the Gateways.

The development plan identifies neighbourhood functions in Athlone for Curragh/Lissywollen, Cornamaddy, Garrycastle and Creggan, recommending the preparation of a local area plan.

Athlone Environs Plan (Section 3.2, County Development Plan, 2008-2014)

This plan indicates a line for a local distributor road for the residential land and a location for a regional sports centre, between the Ballymahon Interchange and the Garrycastle Interchange south of the Athlone Relief road. While there are no sites of environmental importance designated within the Environs Area, the existing Dublin – Galway/Westport rail line and the disused Mullingar – Athlone rail line are mentioned as providing important wildlife corridors.

4.4 Local planning context

4.4.1 Athlone Town Development Plan, 2008-2014

The plan sets out Athlone Town Council's policies and objectives for the proper planning and sustainable development of the area from 2008 to 2014. The plan seeks to develop and improve the social, economic, cultural and environmental assets of the town in a sustainable manner.

Some of the relevant spatial policy objectives are:

- To actively promote the re-opening of the Mullingar to Athlone rail line and Moate rail station for commuting and leisure purposes and to safeguard the existing line from development encroachment in the interim.
- To facilitate the development of public transport throughout the town, that can facilitate links with transport initiatives in the rural hinterland, particularly where services can benefit the maximum number of people.
- To promote and facilitate the development of cycling and walking facilities in the town and ensure that all developments facilitate access by foot and bicycle to public transport and services.
- To improve the streetscape environment for pedestrians and cyclists, by providing facilities to enhance safety and convenience and by ensuring they are adequately provided for in new development and introduced into existing development where possible.
- To ensure that major recreational and amenity open space is provided.
- To protect hedgerows in all new developments, particularly species rich roadside and townland boundary hedgerows.
- To seek to maintain and strengthen the existing local centres within neighbourhoods and to designate and facilitate the development of new centres where appropriate, primarily through the implementation of Local Area Plans.
- To use phasing arrangements in Local Area Plans for new development areas so that community facilities are provided in line with the pace of development.
- To provide for existing and future educational needs within the town through land use zoning and local area planning.

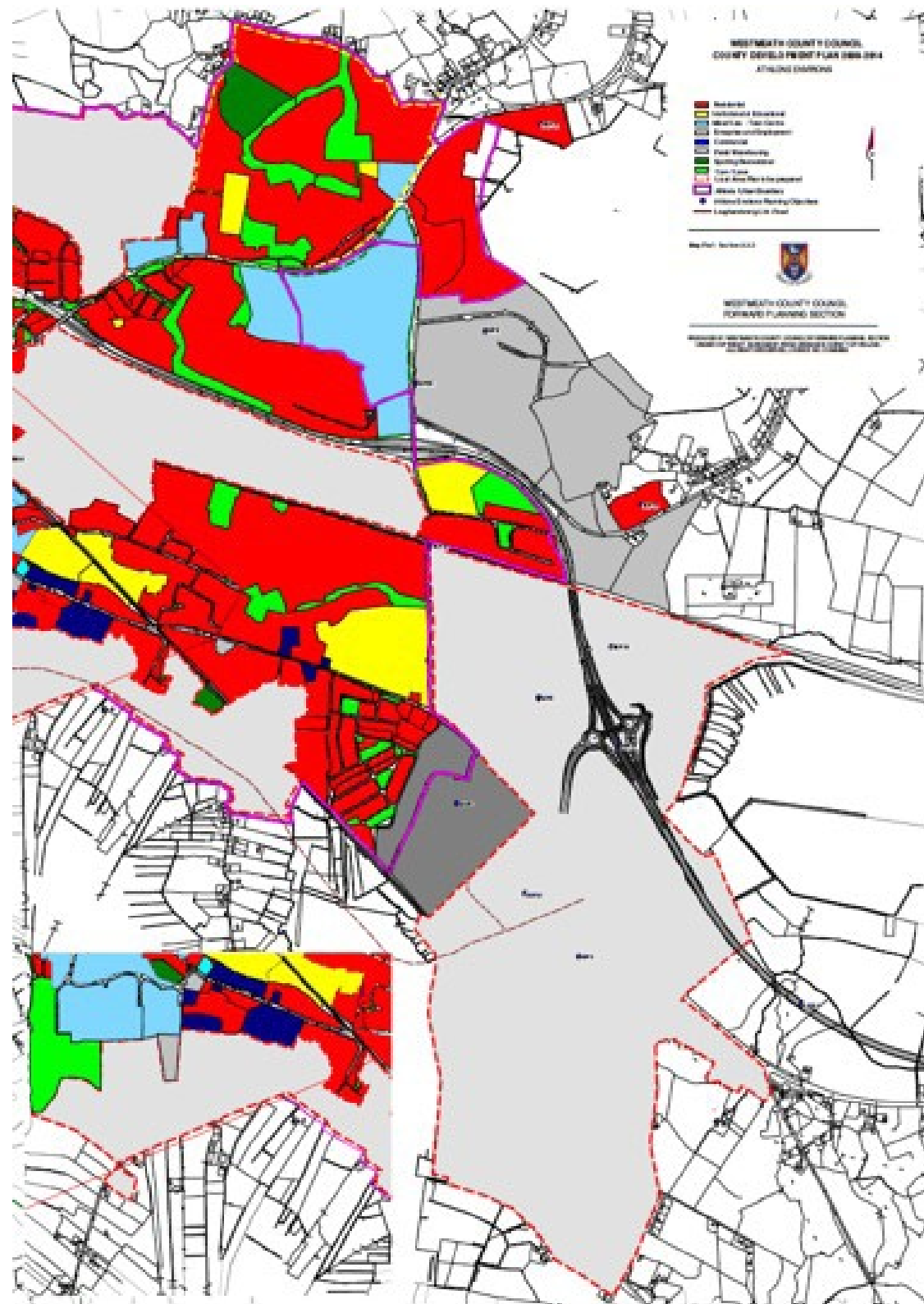
4.4.2 Draft Loughandonning Local Area Plan (in preparation)

It is an objective of the Athlone Town Plan to prepare a Local Area Plan for Loughandonning (LLAP). This plan is currently being prepared. Loughandonning is located to the south/ south east of Athlone Town Centre, within the administrative boundary of Athlone Town Council. The area is situated between the urban fringe of the town south of the Old Dublin Road and the town's southern administrative boundary with Westmeath County Council, including lands within the townlands of the Derries, Kilmacuagh (Cooke), Bunnavally, Cartrontroty, Loughandonning, Ankers Bower, Golden Island (St. George), Golden Island (Kilmaine) and Golden Island.

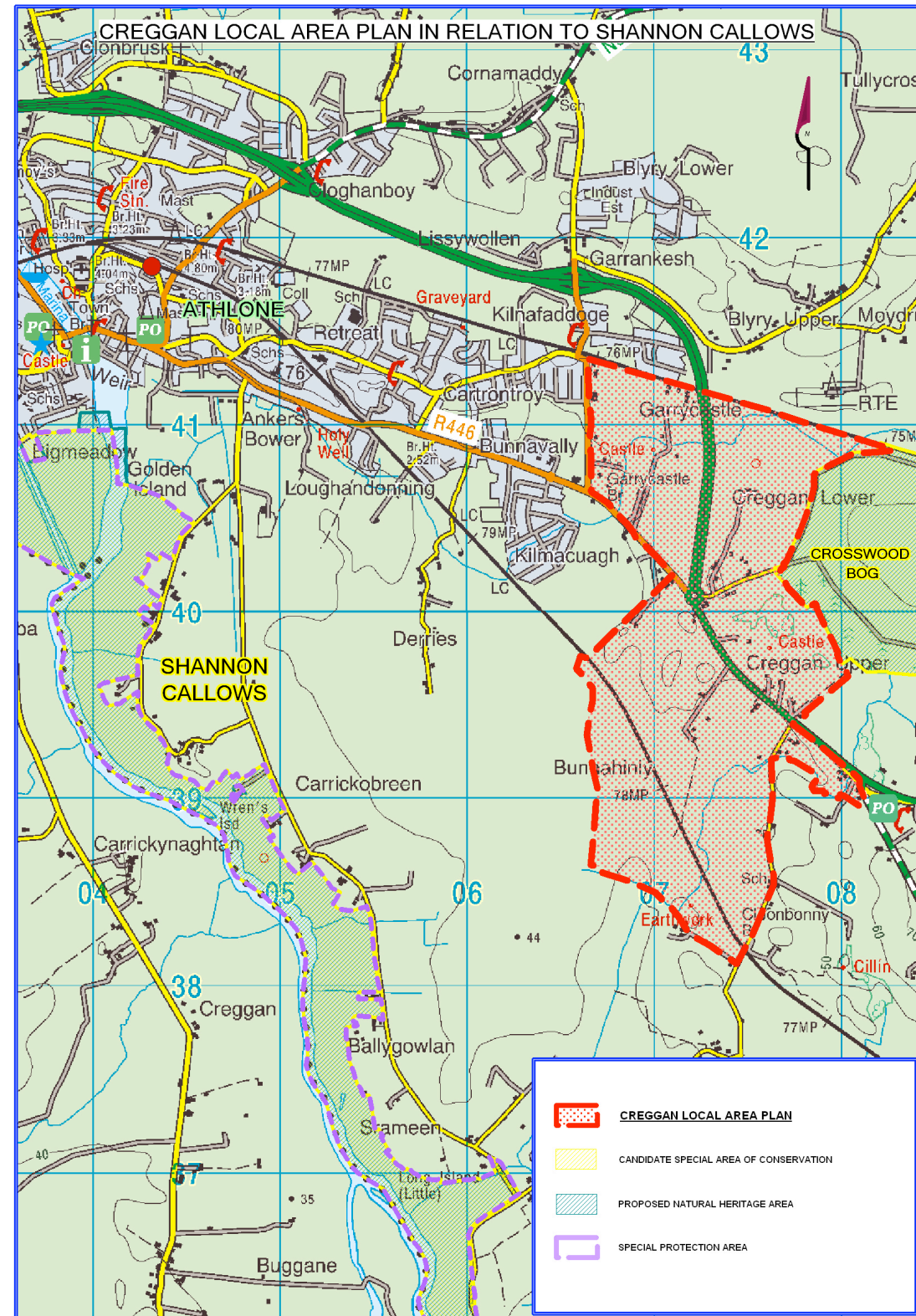
The draft LLAP area encompasses approximately 66.5 ha (164 acres) extending in a rough arc eastwards from the Shannon Callows to Willow Park FC playing pitches. The northern boundary with the town follows the rear of the Golden Island shopping centre and the rear of development fronting the Old Dublin Road.

The draft LLAP proposes four new neighbourhoods generating an overall new residential population of between approximately 3,020 and 4,650 persons. Specific objectives are set out for each of the proposed character areas or neighbourhoods.

The new development area will be linked to that of Creggan via the proposed Loughandonning link road. The current proposed route will traverse the full extent of the draft LLAP lands to join the town centre in the vicinity of Golden Island.



Map of Athlone Environs showing zoned land and LAP designations (extract from Westmeath County Development Plan 2008-2014).



Map of Athlone Environs showing DLAPC lands as existing and surrounding environmental designations

5 Characteristics of the existing environment at Creggan

5.0 Characteristics of the existing environment at Creggan

This section of the report describes the existing state of the environment within the DLAPC area and its immediate environs.

There are currently no significant known environmental problems in the plan area. Parts of the plan area are characterised by incremental development, which it is an objective of the plan-led approach to avoid. Parts of the plan area have also been subject to local flooding, as described below.

The purpose of this description is to establish the broad environmental context from which environmental criteria can be assessed. The headings used are based on the heads of consideration indicated in Annex II of the SEA Directive.

5.1 Biodiversity, flora and fauna

5.1.1 Introduction

Biodiversity can be defined as the variability among living organisms including terrestrial, marine and other aquatic ecosystems. It includes the genetic, organism, community, and ecosystem level; and loss of biodiversity reduces an ecosystem's ability to recover from natural or human impacts.

Areas of value in proximity to the DLAPC have been afforded protection under the Habitats and Birds Directives. The Crosswood Bog is designated as a candidate Special Area of Conservation (c) SAC, selected for active raised bog and degraded raised bog, habitats that are listed on Annex I of the E.U. Habitats Directive. The Shannon Callows is also a (c)SAC and Special Protection Area (SPA). In addition to the protected sites referred to, biodiversity also includes species, habitats and ecosystems, which are not designated, such as aquatic species in the Shannon and grasslands, eskers, trees and hedges habitats.

5.1.2 Protected habitats / Natura 2000 sites

There are no SACs, NHAa or SPAs on or directly adjacent to the site. Crosswood Bog (SAC and pNHA) adjoins the LAP boundary to the northeast.

Crosswood Bog (c)SAC

Crosswood Bog is a (c)SAC selected for active raised bog and degraded raised bog, habitats that are listed on Annex I of the E.U. Habitats Directive. Active raised bog comprises areas of high bog that are wet and actively peat-forming, where the percentage cover of bog mosses (*Sphagnum* spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, *Sphagnum* lawns, flushes and soaks. Degraded raised bog corresponds to those areas of high bog whose hydrology has been adversely affected by peat cutting, drainage and other land use activities, but which are capable of regeneration. The site consists of a quaking bog, with a well-developed sequence of pools, hollows and hummocks, and a flush supporting woodland. Cutover occurs on all margins of the bog.

Current land use on the site consists of peat-cutting around the edge of the high bog; it is more intensively cut on the western and southern margins. While the northern margin has drains that extend into the intact bog it is relatively protected from development due to the proximity to the Dublin – Galway railway line along the northern boundary. Forestry is found to the south of the site on areas of cutover bog. Some fields on old cutover are used for pasture and are presently undergoing further reclamation. Damaging activities associated with these land uses include drainage throughout the site (both old and recent) and extensive burning of the high bog. These are activities that have resulted in loss of habitat and damage to the hydrological status of the site, and pose a continuing threat to its viability.

River Shannon Callows (c)SAC

The River Shannon Callows which are located approximately 1.2Km from the DLAPC area, are designated for the presence of lowland hay meadows, *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils, alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* and limestone pavements. It is also designated for the presence of otter (*Lutra lutra*). The Shannon Callows has by far the largest area

of lowland semi-natural grassland and associated aquatic habitats in Ireland and one in which there is least disturbance of natural wetland processes. Botanically, it is extremely diverse with two legally protected species of plants and many scarce species. The site is seasonally flooded, along and beside the river between the towns of Athlone and Portumna. The callows begin immediately south of Athlone. Important areas of callows within the immediate vicinity of Athlone occur at Big Meadow, Golden Island, Carrickynachtan, Creggan and Long island.

Potential threats to the site arise through alterations in the hydrology of the system, such as drainage, flood relief works, engineering works, or from diffuse or point sources pollution from agriculture and municipal discharge. The River Shannon is used extensively for recreation, which can result in disturbance to wildlife or habitat degradation. Alterations to existing habitat management can result in habitat loss, degradation or fragmentation. Changes in management can include fertilizing botanically-rich fields, the use of herbicides, reversion of hay meadow to pasture, neglect of pasture and hay meadow. The maintenance of generally high water levels in winter and spring benefits all aspects of the flora and fauna, but in this regard, summer flooding is a threat to breeding birds, and may cause neglect of farming.

To maintain the diversity of waterfowl and wetland plants in the Callows, it is essential that annual winter and spring flooding is maintained. Apart from damage posed by over fertilising and over stocking, the biggest threat to the wet meadows is drainage. It is generally accepted, however, that draining the Shannon on a regional scale is not a viable project. The floodplain is under pressure from development where it is directly adjacent to urban areas such as Athlone.

5.1.3 Non-protected habitats

Grassland

Overall there are no major habitats of interest within the Creggan LAP boundary, however one interesting dry grassland habitat was found at the North-west end where a group of dry soil plants were found, which may potentially hold more interesting plants in spring. There is potential for bat roosts at the site particularly at the southern end where a (new) bridge is located. The site may also be an important ground for breeding and wintering bird species.

Watercourses

Two water courses of significance, the AI River and the Fardrum/ Cloonbonny Stream, cross the DLAPC area.

The AI River rises east of Athlone in the townland of Upper Moydrum in raised bog to the northeast of the plan lands. The channel is approximately 6km long. The source is fed by the bog. The river flows south eastward through the lands of Creggan Lower and Garrycastle and then eastward, prior to discharging into the Shannon downstream of Athlone in the townland of Golden Island.

The river is culverted under the Athlone bypass, within an invert level several metres lower than the surface level of the road. There is a culvert of 1050mm approximately 200m downstream of the Athlone bypass under a service road in the IDA Industrial Estate at Garrycastle. The flow through this culvert is controlled by a sluice gate arrangement.

Downstream of the IDA estate, the river passes under the R446. The river is relatively steep in its channel profile through the DLAPC lands and is not directly affected by River Shannon flooding.

No legally protected aquatic plant species were recorded at the site and each of the sampling sites were recorded to be in good water quality condition. White-Clawed Crayfish which is protected under the Habitats Directive Annex II & V was found at two of the three sampling sites. In addition three sites were recorded as having suitable habitat conditions for the White-Clawed Crayfish, and juvenile lamprey. River Lamprey and Brook Lamprey are protected under the Habitats

Directive Annex II. Two of the three sites were also recorded as suitable spawning habitats for salmonids.

Reports by consulting engineers prepared on behalf of Westmeath Council also indicate that otter, freshwater crayfish, Lamprey, trout and kingfishers have been identified in or adjacent to the AI.

The other significant watercourse, the Fardrum Stream (also referred to as the Cloonbonny Stream), traverses the Clonbonny area of the DLAPC area, south of the N62. The Fardrum/ Cloonbonny Stream flows through the southeastern corner of the local area plan lands and drains the lands of Creggan Upper and lands south of the N62 along with a network of drainage ditches.

The stream flows beneath the Dublin to Galway railway line. Downstream of the local area plan lands the stream flows through the Bunnahinly Bog and discharges to the Shannon. There are no historical records of flooding of the Clonbonny Stream within the plan area.

Hedgerows

A high proportion of hedgerows in the Athlone area are classed as ‘species rich hedges’ with some ‘species poor hawthorn hedges’. A serious side affect of development, especially of a scale to allow urban expansion, is the removal of hedgerows and hence, the removal of valuable wildlife habitats. Hedgerows are under threat both qualitatively and quantitatively. Townland boundary hedges and species rich hedges are particularly at risk. The National Biodiversity Plan states, “for the future, the overall goal should be no net loss of the hedgerow resource”.



Dublin-Galway rail line at Area C



Landscape character as existing in Area C

5.2 Population

The population of Athlone was 14,347 persons in 2006 (CSO, 2007). According to the Athlone Town Plan, population growth in the region between 2002 and 2006 was 11.5%, and population growth in County Westmeath over the same period was 10.5%, both above the State average of 8.1%. The population of Athlone is expected to reach 26,000 persons by 2022. The DLAPC notes the siting of Lough Ree immediately north of the town, the River Shannon floodplain and past incidences of seasonal flooding occurring south of the town, as reasonable justification for the future expansion of Athlone to be concentrated on lands to the east of the existing urban area.

Population growth in the entire midlands region between 2002 and 2006 was 11.5%, compared to population growth in County Westmeath over the same period of 10.5%, both above the State average of 8.1%. A portion of the population increase can be attributable to natural increase and a significant proportion results from inward migration.

Since population growth both county wide and regionally was concentrated in the areas proximate and accessible to the Greater Dublin Area, Athlone experienced a slight decline in population, -0.1%, with the most pronounced decline experienced in the Athlone Urban area to the west of the Shannon; -12%.

The population decline was attributed by the Environmental Report on the Athlone Town Development Plan 2008-2014 to the limited extent of lands within a constrained urban boundary and the availability of lands in the environs of the Town within the Roscommon and Westmeath County Council administrative areas. It envisaged that this trend of decline will be reversed over the current plan period with a number of developments being granted permission within the Urban West Area and some under construction.

The Regional Planning Guidelines for the Midlands, 2004, envisaged a population growth for the Midlands Region from a level of 225,600 based on the 2002 Census statistics to an overall population of 325,000 by 2020, a substantial proportion of this growth, 55,000-60,000, was directed to the central area containing the Linked Gateway of Athlone, Mullingar and Tullamore. The current draft RPGs identify the Linked Gateway as exhibiting the second fastest growth of all Gateways between 2002 and 2006.

Human Health issues in Athlone are generally concerned with the quality of drinking water and air quality and also to the quality of life of Athlone's citizens, which can be affected by factors such as commuting patterns and the provision for recreation and amenity. Water quality issues are described separately.

Census data indicates a general trend that commuting to work by car is increasing, particularly from lower density suburban areas and rural areas to larger towns such as Athlone. This has a negative effect on quality of life.

5.3 Soil

The site predominantly comprises of agricultural land with a cutover peatland bog.

Geology

The Geological Survey of Ireland (GSI) describes the bedrock of the area as Carboniferous Walsortian Limestone comprising of massive unbedded limestones that are sometimes dolomitised. A number of fault lines have been identified in the site. Ground conditions during site inspection recorded peat deposits at depths up to 3.5 mbgl (meters below ground level). Alluvial Deposits comprising peat deposits underlain by soft grey sandy silts and soft grey gravelly clays were recorded and Glacial Deposits predominantly underlying the alluvial deposits comprising grey sandy gravel, cobbles and boulders of limestone were also recorded within a localised clayey matrix.

Hydro-geology

The National Bedrock Map produced by GSI classifies the underlying bedrock as moderately productive only in localised zones. A locally important sand and gravel aquifer (Lg) was also identified in the northeastern region of the site. According to the GSI Well Database 1 no. groundwater well was identified within 2km of the site. Groundwater was recorded in trial pits within the glacial deposits at depths ranging from 1.8 and 2.0 mbgl. Ground water was also encountered at the interface between the peat and



Clonbonny National School



Cycleway and footway at IDA business park

soft alluvial deposits between 2.3 and 3.5 mbgl. Groundwater flow direction (currently unknown) is likely to be affected by fracturing the bedrock and is expected to follow general topography and flow in a general direction towards the River Shannon. GSI has classified the vulnerability of the aquifers in this region as ranging from High to Low.

Geological Heritage

There are no important geological heritage sites on or adjacent (\leq 500m) to the site.

5.4 Water

5.4.1 Surface water quality

The study area is within the Shannon catchment. The main threat to water quality in the Shannon arises from eutrophication or over-enrichment from point (such as waste water treatment plants) and diffuse sources such as agriculture and urban land uses.

The Athlone stretch of the Shannon River is recorded as being of moderate quality by the EPA, however the Shannon River Basin Characterisation Report states that the Athlone portion of the Shannon is considered to be ‘probably at significant risk’ from diffuse sources of pollution and ‘at significant risk’ from point sources.

The Watermaps WFD Ireland website identifies two catchment areas within the DCLAP area, the Shannon and Tubrit, both Tributaries of Shannon Upper. The former is expected to achieve Good Status and the latter strongly expected to achieve Good Status, in accordance with the Water Framework Directive.

Surface water quality within the plan area is good.

5.4.2 Groundwater

Groundwater is water that is held underground in the soil and in pores or crevices in rock. Groundwater is often an important source of potable water for private wells, group schemes and local authority supplies and for use in a range of commercial activities from agriculture to bottling water for sale. In many rivers, more than 50% of the annual flow is derived from groundwater and more significantly, in low flow periods in summer, more than 90% is groundwater. In this regard, the quality of groundwater is significant in terms of surface water quality.

In addition, groundwater directly and indirectly contributes to, and sustains a variety of important ecosystems; such as the Shannon Callows to the south of Athlone.

Aquifers are geological formations that contain or conduct groundwater from which water supplies for wells, springs, etc. are often abstracted. A regionally important karstified aquifer exists to the north of the town boundary and a small portion of this traverses the Town boundary, at the river bank within the Lough Ree High Amenity Area. The remainder of the development plan area is underlain by bedrock aquifer that is moderately important only in local zones and a locally important gravel aquifer covers most of the north-eastern half of the development plan area. Since the importance of these aquifers will vary with their productivity, it is essential that aquifers do not suffer from over abstraction, where pumping rates exceed the recharge rate of the aquifer.

The sensitivity of an aquifer to contamination is based on the physical characteristics of the aquifer, the overlying geologic materials, and, for a specific contaminant, its chemical characteristics. “Sensitivity” is a relative term used to describe how well an aquifer is protected from infiltrating contamination. A highly sensitive aquifer would have little or no defence, whereas an aquifer with low sensitivity would be very well protected.

A shallow, unconsolidated sand-and-gravel aquifer is highly sensitive to contamination. This is because the physical characteristics of the aquifer permit rapid infiltration of recharge. Rapid recharge leaves little time for contaminants to degrade naturally or be adsorbed before

reaching the aquifer. Conversely, a deep, confined, layered basalt aquifer has a very low sensitivity. Infiltrating recharge could take years to reach the aquifer, allowing time for contaminants to abate or degrade.

As noted above, a locally important sand/gravel aquifer comprises a large component of the plan area (see section 2.7 of the DLAPC). The lands immediately west of Crosswood Bog consist of limestone and shale and poorly productive bedrock. The area encompassed by the aquifer is characterised by high groundwater vulnerability.

5.4.3 Water supply

The DLAPC states that the proposed South Westmeath Regional Water Scheme will provide a new intake from Lough Ree, and thus provide a long-term supply for Creggan.

5.4.4 Wastewater

Existing development at Kilmacuagh, Garrycastle Industrial Estate, Athlone Institute of Technology and a number of housing estates is served by an existing sewer. A new foul sewer network is proposed to serve the entire plan area. The master sewerage plan for Creggan is currently being finalised. This envisages construction of a new pumping station on low-lying ground to the west of the Dublin-Athlone railway line in Clonbonny. This pumping station will collect flows by gravity and will connect to the existing wastewater treatment plant at Golden Island, via a 3.07km rising main. The capacity of the Athlone Water Treatment Plant has recently been augmented.

5.4.5 Flooding

According to OPW records, there is one recorded recurring flood event within the Creggan area, namely on lands to the north of Character Area B. These lands are located within the catchment of the AI River. In order to mitigate against the risk of flooding at this location, a tract of land extending to 17 ha in area has been reserved free from development in the DLAPC.

5 Characteristics of the existing environment at Creggan

5.5 Air

Emissions to air can arise from waste management and this can be either due to direct emissions (landfill, thermal treatment, composting, anaerobic digestion) or indirect emissions (transports associated with waste collection or disposal). Types of emissions include landfill gas (methane, carbon dioxide), dust (including bioaerosols from composting), odour and noise.

Emissions from road traffic are now the primary threat to air quality in Ireland (EPA, 2000). Nitrogen Oxides (NO_x) arise from traffic emissions or any combustion process (e.g. incineration). Oxides of nitrogen contribute to the formation of acid rain and the formation of ozone. Particulate Matter (dust) from heavy goods vehicles (HGVs) may have localised effects on air quality. Carbon Monoxide (CO) and Benzene mainly arise due to petrol combustion. Sulphur Dioxide (SO₂) also arises from diesel engines including HGVs.

Overall air quality in the Midlands Region is within EU limits for Sulphur dioxide, Nitrogen Oxides and particulate matter. This is based on periodic monitoring carried out by the EPA. However Nitrogen dioxide and Particulate Matter are of concern due to occasionally exceeding EU limits, in particular in urban areas.

Of Ireland's four air quality zones, Athlone Town is predominantly situated within zone C. Lands to the east and south of Athlone Town are best represented by Zone D (rural). EPA air quality monitoring in Athlone in 2003 indicates that Athlone experienced good air quality and recent trends indicate that air pollution levels in Ireland are decreasing each year.

Rural air quality records were taken from a representative site at the EPA monitoring station for a rural Zone D area in Kilkitt in Monaghan:

- Based on rural Kilkitt data and Athlone town data, it is assumed that background Nitrogen Oxide (NO₂) levels at 5-10 µg/m³ are above the typical NO₂ levels found in rural locations.
- Based on rural Kilkitt data and Athlone town data, it is assumed that background Sulphur Dioxide (SO₂) levels at 4-8 µg/m³ are above the typical SO₂ levels found in rural locations.
- Based on rural Kilkitt data and Athlone town data, it is assumed that Particulate Matter (PM₁₀) levels are above the typical PM₁₀ levels at 10-20 µg/m³ found in rural locations.

The main source of air pollution in the area is emissions from vehicles using adjacent road network. There are some minor emissions from nearby commercial activities.

A cutover bog in the adjacent area may lead to dust generation and dispersion in the area particularly in drier weather. The majority of the remaining surrounds are agricultural and may have dusts and odour implications.

5.6 Material assets

Material assets within the DLAPC boundary include the road and rail network, utilities, social infrastructure and land uses (including urban land and the agricultural resource). Although peat cutting has traditionally been regarded as a local fuel resource, Crosswood Bog has recently been afforded protected from further cutting and is also a protected habitat (cSAC).

Transport infrastructure

The north-eastern portion of the lands is traversed by the M6 motorway and associated M6/N6 interchange providing access to the lands. Apart from the M6, the main roads within the plan area are the N62-58, the N62-59, the R446 and the R916. The L54102 and L54103 serve the residential enclave to the east of the M6 interchange. The Clonbonny Road (L5410) abuts the eastern boundary of the plan area and provides the principle access to the National School. The R916, which is an important link to the N55, bounds the area on its western side.

The disused Mullingar-Athlone railway line abuts the northern boundary of the lands. The southern portion of the lands is traversed by the active Dublin – Galway rail line.

Utilities

The Dublin Galway gas pipeline traverses the southern portion of the lands. This imposes restrictions on development in its vicinity.

There is a 38Kv overhead power line traversing the area. The DLAPC envisages that this line will need to be grounded.

Land-uses

The predominant use of the lands within the plan is agricultural and as such the area is rural in nature.

There is a concentration of economic development located within Garrycastle Business Park, to the north of the plan area, which is of distinctive urban character. There is also a secondary commercial area centred at the Creggan roundabout.

Any material assets that are not described in detail in this section are described in more detail in other sections of this report.

Social infrastructure

Clonbonny National School is located along the south-eastern boundary of the plan area and has an enrolment of 71 pupils. There are no recreational facilities or areas of formal open space within the plan area.

Athlone Institute of Technology campus straddles the western border of the DLAPC lands at the junction of the Old Dublin Road and Cartontroy. Several faculties are located within the DLAPC boundary.

5.7 Cultural heritage

5.7.1 Archaeological and historical background

Prehistoric

Mesolithic Period (c. 7000–4000BC)

The Mesolithic Period is the earliest time for which there is clear evidence of prehistoric activity in Ireland. During this period people hunted, foraged and gathered food and appear to have had a mobile lifestyle. The most common evidence indicative of Mesolithic activity at a site comprises of scatters of worked flint material; a by-product from the production of flint implements (Stout & Stout 1997). It is possible that the local water ways and areas of bog land within the vicinity of Creggan provided a focus point for Mesolithic populations, as means of a food resource. However, there is no recorded evidence for Mesolithic populations within the vicinity of the proposed local area plan.

Neolithic Period (c. 4000–2500BC)

During the Neolithic period communities became less mobile and their economy became based on the rearing of stock and cereal cultivation. This transition was accompanied by major social change. Agriculture demanded an altering of the physical landscape, forests were rapidly cleared and field boundaries constructed. There was a greater concern for territory, which saw the construction of large communal ritual monuments called megalithic tombs, which are characteristic of the period.

This phase of prehistory in the Athlone area is indicated by the presence of four stone axes in Athlone town (1940:118; 1943:185; 1942:230; 1989:31) as well as three polished stone axe heads (Record 1A/40/67) found in the vicinity of Athlone. These artefact types are generally assigned a Neolithic date. Within the wider landscape of the Creggan local area plan, a possible megalithic tomb is situated on a natural pointed hillock c. 1.2km to the WNW of the local area plan boundary (WM029-002).

Bronze Age Period (c. 2500–600BC)

The Bronze Age was characterised by the introduction of metalworking technology to Ireland and coincides with many changes in the archaeological record, both in terms of material culture as well as the nature of the sites and monuments themselves. Though this activity has markedly different characteristics to that of the preceding Neolithic period including new structural forms and new artefacts (such as Beaker pottery), it also reflects a degree of continuity. Megalithic tombs were no longer constructed and the burial of the individual became more typical. Cremated or inhumed bodies were often placed in a cist, a small stone box set into the ground, or a stone lined grave. Burials were often made within cemeteries and marked within the landscape with the construction of an earthen barrow.

The most common Bronze Age site within the archaeological record is the burnt mound or fulacht fiadh. Over 4500 fulachta fiadh have been recorded in the country making them the most common prehistoric monument in Ireland (Waddell, 1998, 174). Although burnt mounds of shattered stone occur as a result of various activities that have been practiced from the Mesolithic to the present day, those noted in close proximity to a trough are generally interpreted as Bronze Age cooking/industrial sites. Fulacht fiadh generally consist of a low

mound of burnt stone, commonly in horseshoe shape, and are found in low lying marshy areas or close to streams. Often these sites have been ploughed out and survive as a spread of heat shattered stones in charcoal rich soil with no surface expression in close proximity to a trough.

The term fulacht or fulacht fiadh is found in early Irish literature from at least the 9th century AD and refers to open air cooking places often associated with the young warrior hunters of the fianna and the legendary fionn mac cumhail (Waddell, 1998, 174). Even though they may have functioned as cooking sites, dates in the mid-late Bronze Age (1500–600BC) show that they significantly predate the cooking sites referred to in early Irish literature (Brindley & Lanting, 1990). One burnt mound was partially excavated within the townland of Creggan Lower prior to the construction of the western section of the N6 Kilbeggan to Athlone Road Scheme (Creggan Lower 2, Ref.: E2659). The remaining portion of this site was identified during testing in 2006 in lands to the immediate west of the road land take (Licence Ref.: 06E0129). This section was preserved in-situ. One further Bronze Age site (Ref.: 2658) was also identified in Creggan Lower c. 250m WNW of Creggan Lower 2. This consisted of a structure and associated pits, which were excavated prior to the construction of the N6. Both sites were found to date to the late Bronze Age and although now covered by the road, were both located within the boundaries of the proposed local area plan.

Bronze Age activity within the vicinity of Athlone is also evidenced by a large amount of stray finds that have been recorded in and around the town. These include an early Bronze Age copper alloy spearhead (W.191), a bronze flat axehead (1991:82), two bronze palstaves (1985:45; 1968:319), two bronze looped spearheads (1988:3; 1988:4), a bronze flanged arrowhead (1968:313), a bronze socketed arrowhead (1968:353) and a bronze rapier blade (1988:5). An unusually large number of high status gold objects dating to the Bronze Age have also been found near Athlone including a lunula (W.5), bar torcs, penanular bracelets, a 'dress-fastener', a 'tress-ring' and a 'sleeve fastener' (Bradley 1987, 20).

Iron Age Period (c. 500BC – c. AD500)

Compared to the rest of Irish prehistory there is very little evidence in Ireland, as a whole, representing the Iron Age. As in Europe, there are two phases of the Iron Age in Ireland; the Hallstatt and the La Tène. The Hallstatt period generally dates from 700BC onwards and spread rapidly from Austria, across Europe, and then into Ireland. The later Iron Age or La Tène culture also originated in Europe during the middle of the 5th Century BC. For several centuries the La Tène Celts were the dominant people in Europe, until they were finally overcome by the Roman Empire. There are no recorded Iron Age sites within the vicinity of the proposed local area plan, although finds within the wider area do include a Hallstatt type iron sword, a bronze ring-headed pin, a bronze bowl and two bronze mounts (Bradley 1987, 20).

Early Medieval Period (AD500-1100)

One of the most common indicators of settlement during this period is the ringfort. Ringforts were often constructed to protect rural farmsteads and are usually defined as a broadly circular enclosure delimited by a bank and ditch. Ringforts can be divided into three broad categories – univallate sites, with one bank or ditch; multivallate sites with as many as four levels of enclosing features, though bivallate sites are the most numerous; and platform or raised ringforts, where the interior of the ringfort has been built up. When the radiocarbon and dendro-chronological dates from ringfort excavations are compared (Stout 1997, 22-31), not only is the ringfort clearly an early medieval phenomenon, but a strong case emerges for dating the phase of ringfort construction to a period between the 7th and 9th centuries AD. The most common structures found within ringforts, usually through excavation, are the remains of buildings, generally houses, either circular or rectangular. There is one recorded ringfort located c. 500m southeast of the local area plan boundaries (WM029-035). However, it is likely that site WM029-027, which is located within the local area plan and recorded as an earthwork, may have originally been a ringfort.

The earliest evidence for settlement at Athlone Town is found at a church site on eastern bank of the River Shannon, where there are five grave-slabs, dating from the mid 8th century to the 11th century. It is also possible that there was a church site on the western bank of the river. The earliest documentary records for Athlone point to the continued use of the ford within the town and its strategic importance

as the main gateway between Leinster and Connacht. The crossing point was formalised in 1001 when ‘the causeway of Athlone’ was built jointly by the kings of Mide and Connacht. In 1120 Toirdealbhach, king of Connacht, built a bridge across the Shannon at Ath Luain and in 1129 he constructed a castle there to defend it (Bradley 1987, 21).

Although there is no definitive archaeological evidence for Viking settlement at Athlone, their presence within the landscape is confirmed by the discovery of large Viking hoards within the environs of Athlone. The annals record that by 836 Meath had been overrun and Connacht devastated and in 838 Viking fleets were moving up the River Shannon to Lough Erne (Edwards 1996, 172). There is a high incidence of Viking objects from near Athlone. In 1802 the largest Viking period gold hoard known from Europe was found in the vicinity of Athlone. The hoard was dated to the late 9th / early 10th century, as was a second hoard of silver ingots and arm-rings, also found near Athlone (Bradley 1987, 21). Other Viking and Hiberno-Norse finds have been recovered from the River Shannon (ibid.).

Medieval Period (AD1100–1600)

After the arrival of the Anglo-Normans in 1169, Athlone was granted to Geoffrey de Constantine by Hugh de Lacey in the late 12th century. It was an important medieval town both strategically and commercially. In 1210 it became the joint seat with Dublin of English administration in Ireland. It achieved borough status by at least the early 13th century and received a grant to hold an annual 8-day fair at the castle in 1221. The early 13th century castle was possibly built on the site of the late 12th century motte, which may in turn have occupied the site of Ua Conchobhar’s wooden castle (1129). The castle was heavily reconstructed in the late 18th century but originally consisted of a pentangular curtain wall enclosing a keep (WM029-042). The town appears to have developed initially around the castle but a reference in 1305 to ‘the bridge between the castle and the town’ indicate the presence of a main settlement on the eastern bank by this time.

The bridge across the River Shannon formed an essential element of the medieval town and was originally located c. 50m downstream of the modern bridge, linking Bridge St and Main St. A bridge or causeway was located there from as early as 1001 and a stone bridge

was constructed in 1210, at the same time as the castle. The bank on either side of the bridge also served as the site of the town’s two markets. The right to hold a fair at the castle was granted in 1221 and market place is mentioned in a grant of 1623. The original location was probably adjacent to the castle in Main St, near the old bridge. The location of the market in recent times was immediately outside the castle to the northwest, which may date to construction of a new bridge in the 1840’s. The area of the junction of Bridge St, Church St and Northgate St was used as a market place in the town on the east bank since at least the late 16th century.

Evidence for medieval settlement in the hinterlands of Athlone is found in the form of three recorded castle sites located within the boundaries of the proposed local area plan (WM029-025, 028, 034). The northern most castle site is located within the townland of Garrycastle (WM029-025). It is possible that the ruins at the site represent the remains of a later 16th or 17th century tower house or fortified structure, although very little remains at the site and nothing is known of the history of the castle. Archaeological testing was carried out to the southwest of the castle, and revealed the remains of an 18th or 19th century house, which is also marked on the historic OS map editions. No earlier features were identified during this investigation (Licence Ref.: 01E0130). Castle site WM029-028, located within the townland of Creggan Upper, is similar to the remains at Garrycastle, as little is known about the site. It is marked on the OS maps as Castle O’Brien and the remains are also thought to represent a later medieval tower house. The southern most castle site (WM029-034) is located within the townland of Clonbonny. No indication of this site is shown on the OS maps and as such it is not possible to define the castle type. The site is now truncated by a railway track and was subject to archaeological testing in 2001 prior to the construction of a gas pipeline through the area. Nothing of archaeological significance was discovered during this investigation (Licence Ref.: 01E0678). However, the nearby site WM029-033 (to the west), which is recorded as an earthwork, appears to represent the remains of a castle. Stone walls survive on top of a circular mound, with a possible associated platform located to the immediate north.

Post Medieval Period (AD1600–1900)

During this period the landscape defined by the boundaries of the proposed local area plan was rural in nature, characterised by scattered settlement, the demesnes of the local landed gentry and small scale rural industry. The first edition OS map shows two demesnes within the proposed local area plan boundaries, consisting of Creggan House and Bunnahinly House. The proposed area also abuts along part of its NE boundary, a much larger demesne landscape associated with Moydrum Castle. Much of this particular landscape has now been lost and the house is in ruins. Moydrum Castle is a protected structure, is listed within the NIAH survey (Ref.: 15402917) and is noted as an important Gothic Revival essay, built to designs by Sir Richard Morrison (1767-1849), who was commissioned by William Handcock to rebuild an existing house befitting of his new status as Lord Castlemaine, c.1812 (NIAH survey report). The house was burnt down in 1921. Creggan House and Bunnahinly House have also been removed from the landscape, along with many of their demesne features. Creggan House was burnt down during 1921. However, two stone towers, which once formed part of the house still survive and are listed within the NIAH survey for Westmeath (NIAH Ref.: 15402901). The former entrance to Creggan House is also listed (NIAH Ref.: 15402902) along with a row of workers cottages (NIAH Ref.: 15402903).

From the mid to late 19th century, the Anglo-Irish landowning classes began to slowly lose their grip on the thousands of acres of Irish landscape that formed a large part of their estates. The large country house and demesne were often only a small part of the visible wealth possessed by such families and their demise was brought about by a number of factors including The Famine; the loss of a younger generation to the first world war and the fight for independence by the Republicans. The lower classes resented the amount of land that was owned by the Anglo-Irish gentry and in 1922 the Land Commission was established. The purpose of the Commission was to purchase these estates (often for a greatly reduced price) so they could be re-distributed amongst the lower classes. As a result of this, many families became little more than upper class farmers and as a result many left Ireland to return to England. As with the landscape surrounding the proposed local area plan the large houses and demesnes were often left to decay with the houses often demolished for building materials and the demesnes subsumed back into the landscape.

Although the larger houses that were once located within the local area plan have since been lost, a number of vernacular properties do survive. Vernacular Architecture is defined in James Steven Curl's Encyclopaedia of Architectural Terms as 'a term used to describe the local regional traditional building forms and types using indigenous materials, and without grand architectural pretensions', i.e. the homes and workplaces of the ordinary people built by local people using local materials. This is in contrast to formal architecture, such as the grand estate houses of the gentry, churches and public buildings, which were often designed by architects or engineers. The majority of vernacular buildings are domestic dwellings. Examples of other structures that may fall into this category include shops, outbuildings, mills, limekilns, farmsteads, forges, gates and gate piers. Typically the single storied thatched cottage would be considered to represent the real vernacular style in Ireland. Local material is used to construct the house; stone or mud for the walls, cereal straw or rushes for thatch. A derelict thatched farmhouse is located just outside of the boundaries of the LAP, over 500m to the south within the townland of Clonbonny (NIAH Ref.: 15403502). A further vernacular farmhouse was noted during the field inspection of the LAP. This structure is located within the townland of Creggan Upper to the southwest of the Athlone to Birr road.

Summary of Previous Archaeological Fieldwork

A review of the Excavations Bulletin (1970–2006) and the database of archaeological licences held by the Department of Environment, Heritage and Local Government (2007–2010) has revealed that a number of archaeological investigations have been carried out within the DLAPC area. These are summarised below:

2006 Creggan Lower 1

Late Bronze Age Structure and pits
Ministerial Direction Ref.: E2658

The site was located in a dry elevated position on the eastern edge of a gently sloping hilltop in the townland of Creggan Lower, c. 1km east of Athlone town. Creggan Lower 1 appeared to represent a late Bronze Age habitation area, consisting principally of a sub-rectangular post-built structure and a series of pits in close proximity.

Pottery analysis, lithic analysis and radiocarbon dating all point to a Bronze Age date, with a date range of c. 1200-800 BC likely. While the presence of a structure on site at Creggan Lower 1 suggests habitation, the pits on site seemed to fall into two distinct categories; those with typical domestic waste such as pottery sherds, burnt bone fragments and charred cereal grains, and those that produced waste indicative of industry. It was clear that both bone and chert were being worked on site. This suggests that the site at Creggan Lower was the residence of skilled craftspeople around the turn of the first millennium BC (Lyne 2009).

2006 Creggan Lower 2

Late Bronze Age Burnt Mound
Ministerial Direction Ref.: E2659

Creggan Lower 2 comprised two areas of excavation, A and B. Area A consisted of the western extremities of a burnt mound or burnt spread situated on a slight rise in an area of undulating ground. It is thought that the majority of the site remains in-situ outside of the limits of the CPO to the east. Area B, some 200m south of Area A, consisted of some patches of burning and charcoal, and may represent nothing more than an episode of modern field clearance. Area A consisted of a number of relatively shallow spreads of burnt stone and charcoal-rich soil which sealed a number of negative features; namely two pits and two probable stakeholes. Taken in conjunction, the spreads measured c. 15m x 4m, with a maximum depth of 0.21m. A single possibly worked chert flake was recovered from the mound material. A circular pit was located at the eastern edge of site crossing the CPO line and was only partially exposed. It was filled by heat-affected stones and charcoal and is likely to have been used for the heating of water using hot stones. Elm charcoal from this pit returned a 2 Sigma calibrated date of Cal 1018–908 BC (2816 +/- 21 BP, UBA 9162). An almost square pit was also excavated. The basal fill contained sufficient quantities of burnt stone to suggest it may be contemporary with the main period of activity on site. A layer of twigs found in this pit seemed to be a deliberate deposit. This was waterlogged, ensuring the organic material survived. Analysis of the organic material identified hawthorn, bramble, elder and buttercup. It is possible that this represents the gathering of fruit/seeds for eating or dyeing. It is likely given the similar dating (1190–940 BC - UBA 8584 / 1000–850 BC - UBA 8583 2 Sigma calibrations) of the nearby habitation site at Creggan Lower 1 (c. 250m to the northwest) that these sites were related (Lyne 2009).

2006:2039 Creggan Lower

Burnt Mound
Licence Ref.: 06E0129

Archaeological testing was undertaken on a site of ten acres, located to the immediate east of the proposed N6 road. It was deemed to be possible that the burnt mound that was partially excavated by E. Lyne earlier in the year may extend into the ten acre development area. Therefore, this area was tested and the remains of the burnt mound were found to extend into the development area from inside of the CPO of the proposed road. It was decided to preserve this area in-situ by the establishment of a 10m buffer around the archaeological remains. Therefore no further archaeological works were carried out (Byrne 2007).

2001:1267 Garrycastle

Late 18th century house remains
WM029-025
Licence Ref.: 01E0130

Testing was undertaken within the IDA Industrial Estate in the eastern suburbs of Athlone. The proposed development area was to the southwest of a castle (WM029-025). This castle was attacked in 1442 and apparently levelled, although one source (Stokes and Burgess 1897, 40) indicates that a part of the ruins was still extant in the late 19th century. However, this source has been generally recognised as dubious. The documentary evidence indicates that a fortified house was constructed at the site in the mid to late 17th century.

The extant remains consist of a long stone building, measuring c. 9m by 15m. The southwest gable of this building stands to a height of c. 4–5m and incorporates a ruined fireplace with brick chimney flue. Much of the site and its immediate environs are overgrown and it was not possible to determine whether any further remains might exist. To the southwest of the monument is an area of rough ground in which some wall footings could be traced. Initial testing within this area indicated that it was the location of a late 18th or early 19th century farm building (as shown on the historic OS maps), which was demolished in the first half of the 20th century. The area was subsequently used for the storage of silage in more recent years. A number of linear features in the immediate environs of the farmhouse were tested; the results indicated that these features were the remains of drive/laneways which were subsequently disturbed by ploughing.

Additional testing undertaken in the area of the farmhouse indicated that the basal courses of the external walls, which were 0.6m wide, were of stone, with the remainder of the structure constructed in brick. All internal walls were 0.4m wide and were of brick. All walls stood to a height of 0.4–0.6m over foundation level. The house had a maximum length of 17.7m and a maximum width of 15m. There was evidence of an internal chimney along the western wall, and doorways on the southern, eastern and northern walls. In addition, there was evidence for brick, stone-cobbled and possibly timber floors on the inside of the house, with some external stone cobbling.

2001:1266 Clonbonny

Nothing of archaeological significance

WM029-034

Licence Ref.: 01E0678

The site is in an area of low-lying land at the base of a natural hillock. It was tested in advance of the construction of the gas pipeline from Ballough, Co. Dublin, to Goat Island, Co. Limerick. The gas pipeline ran east–west through the constraint area of the site of a castle. The way-leave for the gas pipeline in this area was 60m in width to allow for tunnelling under the railway, which runs perpendicular to the pipeline and through the constraint area of the monument.

Six test-trenches were excavated by machine across the way-leave in the constraint area of the monument to the east and west of the railway line. The two trenches to the west of the railway line revealed nothing of archaeological significance. The four to the east of the railway revealed a series of curving linear features and charcoal spreads. Further excavation was recommended. This took place under an extension to the original licence. The features were found not to be of archaeological significance (Molloy 2001).

It should be noted that the Database of licence numbers from 2007-2010, held by the National Monuments Service of the DoEHLG could not be reviewed as part of this assessment, as the archive is currently closed due to relocation.

Cartographic analysis of archaeology

The first edition OS map (1837) shows a corn mill to the west of the LAP boundary, which is serviced by a mill race running from a small stream that travels through Garrycastle townland. The stream passes under a roadway via ‘Garrycastle Bridge’. Garrycastle (WM029-025) is marked to the NE along with Garrycastle Old House. The remains of the later were identified during testing in 2001. Recorded monument WM029-027 is also shown further to the east within the townland of Creggan Lower. It is depicted as an overgrown circular feature. No features are marked at the site of WM029-026, which is recorded as an earthwork. By the time of the second edition map (1876), little has changed within this area, although the corn mill is now marked as being in ruins and Garrycastle Old House is no longer named although the structures are still present. The third edition map shows that the mill has been removed, along with Garrycastle Old House.

Further south, within the townland of Creggan Upper, both the first and second edition maps show Creggan House, although it has gone by the time of the third edition. A large walled garden is marked in all the maps c. 120m north of the house, which is still present on the third edition OS map. The earlier maps also show this area as being characterised by a large amount of trees, which were planted within the demesne. Very few of these survive by the time of the third edition OS map. The castle WM029-028 is not marked on the first or second edition maps, but is present by the time of the third edition.

To the southwest of Creggan House, Bunnahinly House is shown on all three OS map editions. The first and second edition maps show trees planted around the house, in a typical demesne type landscape, although it is now shaded to indicate the full extents. The land to the west of the house is characterised by bogland, some of which is included within the boundaries of the LAP. The later maps show efforts to drain parts of the bog and reclaim it as agricultural land.

The southern section of the proposed LAP also contains a stream that runs in a rough northeast-southwest direction. This forms the townland boundary between Bunnahinly and Clonbonny. It passes to the immediate west of WM029-033, which is recorded as an earthwork. This is shown as a probable ringfort on the first and second edition

OS map and as a hachured circular feature on the third edition. No features are marked at the site of the castle (WM029-034).

A number of smaller structures are marked within the maps, such as school houses, a police barracks and a post office as well as numerous scattered structures that are likely to represent small cottages and farmsteads. Very little architectural heritage survives within the Creggan LAP lands. This is for the most part due to the development within the landscape and the widening of the primary roads. This has led to the removal of vernacular structures that once flanked the narrower main routes.

The two streams that are marked within the historical map resource, which run through the Creggan LAP should be considered as Areas of Archaeological Potential, as waterways are often a focus for human habitation and sites such as Bronze Age fulachta fiadh are often discovered in proximity to streams and rivers. The area of improved bog land located within the west of the Creggan LAP study area should also be considered as an Area of Archaeological Potential. Bog land has the potential to contain prehistoric deposits such as wooden track ways, which are preserved by the acidic conditions within the bog.

National Inventory of Architectural Heritage

A review of both the architectural survey and garden survey was undertaken as part of this assessment. The results of this survey are summarised below.

Building Survey

There are a total of four structures listed within the NIAH survey for County Westmeath that are located within the boundaries of the proposed LAP.

NIAH Ref. No.:	Townland:	Classification:	Categories of Special Interest:	Significance:
15402901	Creggan Upper	Two stone towers, part of Creggan House	Architectural, artistic, historical	Regional
15402902	Creggan Upper	Entrance	Architectural, artistic	Regional
15402903	Creggan Upper	Four workers cottages	Architectural, artistic, historical, social	Regional
15402906	Clonbonny	Railway Bridge	Architectural, technical	Regional

It should be noted that the three sites listed within Creggan Upper are in close proximity to one another, whilst Clonbonny Bridge is located on the southern most boundary of the proposed LAP.

Garden Survey

Neither Creggan House nor Bunnahinly House are included within the NIAH garden survey. This is due to the fact that the demesne landscapes were not shaded in on the first edition OS map. The closest demesne to be included is the landscape associated with Moydrum Castle. The former demesne lands abut the proposed LAP boundary to the northeast.

Aerial Photographic Analysis

Inspection of the aerial photographic coverage of the proposed development area held by the Ordnance Survey (1995, 2000, 2005) and Google Earth revealed no previously unrecorded features of archaeological potential in or within the immediate vicinity of the proposed LAP.

Field Inspection

A field inspection was carried out on 23rd June 2010. This was carried out in order to determine the extent and nature of the recorded archaeological and architectural remains within the local area plan and any previously unrecorded archaeological or architectural constraints. The field inspection sought to assess the Creggan LAP lands by means of a windscreen survey and detailed inspection of any recorded sites or structures. The results are as follows:

Archaeological

WM029-025 Castle, Garrycastle

The remains of this castle are located to the immediate west of the Garrycastle IDA Industrial Estate on the edge of overgrown pasture. The site has been preserved as a green space skirted by a footpath. The remains survive very much as described within the SMR file (see Appendix II). However, they are very overgrown and the upstanding wall is barely visible with the associated wall footing almost completely covered by undergrowth.

WM029-026 Earthwork, Garrycastle

This site is now covered by structures associated with the Garrycastle IDA Industrial Estate. No record for archaeological investigations at the site could be located, although testing may have taken place between 2007 and 2010, but the licence archive within the National Monuments Service is not currently available for public consultation.

WM029-027 Earthwork, Creggan Lower

No upstanding remains survive at this site, which is likely to consist of a levelled ringfort. The faint traces of a bank are discernable at ground level, with a diameter of c. 38m. The historic OS mapping shows the site as a hachured circle, which is a typical representation of a ringfort within this resource. The site is located within undulating, good quality pasture, which had just been cut for hay at the time of the inspection.

WM029-028 Castle, Creggan Upper

The remains of this castle are located within rough pasture on top of a small circular mound to the immediate southeast of a walled garden, formerly associated with Creggan House. The remains survive very much as described within the SMR file (see Appendix II), with some upstanding walls present on top of the mound and a large amount of collapse present. The site is reasonably overgrown with small mature hawthorn trees.



The mound of the possible castle at WM029-33, facing north

WM029-033 Earthwork, Clonbonny

This site is listed as an earthwork. However, the remains on site appear to represent those of a small castle, similar in form to WM029-028. The remains of rough stone walls were identified on top of the overgrown mound, suggesting the presence of a building. Furthermore, the remains of a substantial bank very apparent around the southern side of the mound. A large oval platform (70m northeast-southwest by 40m west northwest-east southeast) was located to the immediate north of the mound. It is possible that this is the site of the castle, which has been incorrectly placed at WM029-034.

WM029-034 Castle (site of), Clonbonny

No upstanding remains very present at this site, which is truncated by the path of the railway line. However, archaeological testing at the site in 2001 revealed nothing of significance. It is possible that WM029-033 is the actual castle site.

Areas of Archaeological Potential (Riverine Environments)

Two streams are located within the Creggan LAP lands. The first travels though the townlands of Garrycastle and Creggan Lower within the northern section of the LAP lands. Sections of this stream have been directly impacted on by the construction of the N6, the Garrycastle Industrial Estate and development within the western part of Garrycastle. However, parts of the stream and its immediate environs remain undisturbed. Here the small waterway is surrounded by a dense overgrowth of trees such as hawthorn and runs through a pasture landscape.

The southern stream forms the townland boundary between Bunnahinly and Clonbonny. Here the stream has not been subject to disturbance by modern development. However, the historic OS mapping indicates that during the end of the 19th century, substantial portions were straightened. This is a common practice where attempts were made by landowners to drain lands that were susceptible to water logging. For the most part the stream is flanked by dense overgrowth and runs through a mainly pastoral landscape before discharging into the bog lands located to the west.

Reclaimed bogland, Bunnahinly

This particular area is currently characterised by areas of improved pasture interspersed with rough water logged pasture. The area is traversed by numerous drainage ditches, some of which are marked

5 Characteristics of the existing environment at Creggan

on the later OS map editions. The first edition OS map shows this area as rough bog, which is gradually subject to reclamation over the next two map editions. Bogland possesses archaeological potential as the acidic peat conditions have the potential to preserve wooden trackway and artefacts that can date back to the early prehistoric period.

Site of Creggan House & Gardens, Creggan Upper

Creggan House was destroyed in 1921, although a number of built features associated with the house still survive within the landscape. The site of the house is now characterised by grazed pasture, but remains relatively undisturbed by modern development. The sunken remains of gardens are located to the immediate northeast of the house, which occupied a low ridge overlooking the landscape to the southwest. The house is present on the first edition OS map of 1837 and is likely to date to the beginning of the 19th century. As many of the large houses surrounding Athlone were lost during the 20th century, this site represents an important and relatively undisturbed post medieval archaeological resource.



Creggan House towers (NIAH 15402901), facing northwest

Architecture

NIAH 15402901 Pair of Towers, associated with Creggan House

This pair of unusual structures are located within grazed pasture and once formed part of the Creggan House complex. The remains survive very much as described within the NIAH survey (see Appendix II), although are becoming derelict in condition. The historic OS mapping indicates that the eastern most tower was a stand alone building, whereas the western tower formed part of the main house structure. These structures are listed within the NIAH as being of regional significance, but have not been added to the Register of Protected Structures to date.

NIAH 15402902 Creggan House Entrance

This structure is located on the edge of the main Athlone to Birr road. Since the NIAH survey was carried out in 2004 the ornamental iron gate has also been removed and replaced with a modern counterpart. The gate pillars themselves survive as described within the NIAH survey although are becoming increasingly weathered. This structure is listed within the NIAH as being of regional significance, but has not been added to the Register of Protected Structures to date.

NIAH 15402903 Terrace of Workers Cottages, associated with Creggan House

This small terrace of buildings is located on the northern edge of an agricultural yard and has unfortunately been subject to fire damage since the NIAH survey in 2004. As a result, the eastern part of the terrace has been badly damaged and no apparent attempt has been made to repair the building, which is falling rapidly into dereliction. This terrace is listed within the NIAH as being of regional significance, but has not been added to the Register of Protected Structures to date.

NIAH 15402906 Clonbonny Railway Bridge

This bridge has been maintained in excellent condition and still provides vehicular access over the extant railway lines. The bridge survives very much as described within the NIAH survey (see Appendix II). This structure is listed within the NIAH as being of regional significance, but has not been added to the Register of Protected Structures to date.

Built Heritage site 1 Vernacular farmhouse, Creggan Upper

This building is located on the southwest side of the main Athlone to Birr road. It consists of a modest two storey farmhouse, with a width of three bays and a hipped, slate roof. There are two central chimney stacks and the large square headed window opes contain replacement upvc fittings. The main central entrance is characterised by a modern porch and it is possible that the doorway itself has been altered. However, overall the building survives in excellent condition with the exterior rendered and the stone wall boundary to the front garden still present. The gated entrance to the garden is characterised by the original iron gate and the mature garden is very well maintained. In an area where much of the vernacular architecture has been removed, this structure represents an important survival of local significance. It is not listed within the NIAH survey or the Register of Protected Structures.

Built Heritage site 2, Former western entrance to Creggan House

This entrance is marked initially on the first edition OS map, where there were originally two entrances to Creggan House. The main entrance to the east is listed within the NIAH. However, this entrance, which has been subject to some modification, is located further to the west and by the third edition OS map was being used to service a different structure. The stone mouldings on top of the gate piers are similar, although not as elaborate to those at the main eastern entrance. The structure is not mentioned in the NIAH survey and is not included within the Register of Protected Structures.

Built Heritage site 3, Creggan House Walled Garden

This site consists of a substantial walled garden, which is likely to date to the early 19th century and was associated with Creggan House. The circuit of the garden walls remains intact, although sections of the upper part of the wall have been subject to some collapse. This is likely due to a large amount of ivy growth. The ruined remains of an associated building adjoining the walls is located along the western wall. The walls are characterised by random rubble masonry and enclose a substantial area that measures 90m east-west by 60m north-south. The first edition OS map shows a garden laid out in quarters although the interior of the garden is now characterised by rough pasture that slopes gently to the east. In an area where much of the built heritage resource has been removed, this feature represents an important survival of local significance, especially as part of the Creggan House complex. It is not listed within the NIAH survey or the Register of Protected Structures.

Conclusions

The Creggan LAP lands are formed by sections of the townlands of Garrycastle, Creggan Upper, Creggan Lower, Bunnahinly and Clonbonny. This area is located to the southeast of Athlone town and is characterised by a number of land uses. These include modern industrial and infrastructural development, scattered residential development and pastoral agriculture. There are six recorded archaeological sites located within the LAP lands. These consist of one likely ringfort (WM029-027), four possible castle sites (WM029-025, 028, 033 and 034) and one earthwork site (WM029-026). Of these, WM029-026 is now covered by industrial development (IDA estate) and WM029-034 has been subject to archaeological testing, although nothing of significance was discovered.

A review of the Excavations Bulletin (1970-2006) revealed that two archaeological sites were identified and excavated prior to the construction of the N6 road development in the townland of Creggan Lower. Both of these sites were found to date to the Bronze Age period. Other excavations within the LAP lands revealed no significant archaeological deposits.

A review of the aerial photographic resource and historic OS maps failed to identify any further sites of archaeological potential in or within the immediate environs of the Creggan LAP lands. However, these resources, along with a windscreen field survey, did reveal four areas of archaeological potential. Two of these consist of small streams that pass through the LAP lands, whilst a third is formed by a large area of reclaimed bogland located within the townland of Bunnahinly. A fourth area is formed by the site of the early 19th century Creggan House, which was destroyed in 1921. The house site, along with garden features remains relatively undisturbed and due to the removal of many similar houses within the Athlone area, represents an important post medieval archaeological resource. It should be noted that none of the areas of archaeological potential are subject to statutory protection.

A review of the National Inventory of Architectural Heritage for County Westmeath revealed that there are four buildings identified within the survey as possessing regional architectural significance, which are located within the Creggan LAP lands. These consist of two towers, an entrance and a row of workers cottages formerly associated with Creggan House (NIAH 15402901-03) and the Clonbonny Railway Bridge (NIAH 15402906), which is located on the southeast edge of the LAP lands. Since the NIAH survey has been carried out, the terrace of workers cottages have been significantly damaged by fire. None of the NIAH structure are included within the Register of Protected Structures. In addition there are no protected structures located within the Creggan LAP lands.

A further three sites of local architectural significance were identified during the course of a windscreen field survey. These structures are not subject to statutory protection. The first is located in the townland of Creggan Upper and consists of a well maintained vernacular farmhouse of modest proportions. The second consists of the western

most entrance to Creggan House, which is first shown on the 1837 OS map edition. The eastern most entrance is listed within the NIAH. The third consists of the well preserved remains of the large walled garden formerly associated with Creggan House. The survey also confirmed that a large amount of vernacular heritage within the Creggan LAP lands have been removed due to the widening of main roads and industrial and residential development.

5.8 Landscape

The landscape of the existing environment contains 6 areas of primary ridgelines and 2 areas of secondary ridgelines with the proposed site boundary. There is a watercourse corridor located in a substantial section of the southern and central part of the site.

The majority of the lands are characterised by an undulating landscape of small hills and shallow valleys. There are a number of localised high points in the north-east corner within the IDA lands and another in the central eastern area south of the N6. A significant level change occurs in the area around the active railway to the south. Otherwise the lands may be said to generally fall from a high point in the north-east to the Shannon Flood Plains to the south west.

The IDA lands contain a managed business park type landscape through which the significant water course of the River AI and attendant treeline and hedgerows pass. There are a number of other significant clusters and lines of trees dispersed across the site including mature tree stands adjoining the railway and river corridor. Various other areas have primary and secondary tree coverage.



Site of Creggan House facing northeast

5.9 Inter-relationships between environmental categories

Inter-relationships between the environmental categories are summarised in the following table. As can be seen in the table many of the categories are inter-related. For the purposed of the environmental assessment it is considered that the most important inter-relationships arise from the inter-dependence of protected habitats, flora and fauna, water quality including the hydro-geological regime and human health. It is recommended that these aspects may warrant further study on foot of any specific development proposals, and should also be the focus of future monitoring.

Interrelationships	BIODIVERSITY, FLORA AND FAUNA	POPULATION AND HUMAN HEALTH	SOILS	WATER	AIR AND CLIMATIC FACTORS	MATERIAL ASSETS	CULTURAL HERITAGE	LANDSCAPE
BIODIVERSITY, FLORA AND FAUNA		+	+	+	+	+	o	+
POPULATION AND HUMAN HEALTH	+		+	+	+	+	+	+
SOILS	+	+		+	o	+	+	+
WATER	+	+	+		+	+	+	+
AIR AND CLIMATIC FACTORS	+	+	o	+		+	o	+
MATERIAL ASSETS	+	+	+	+	+		+	+
CULTURAL HERITAGE	o	+	+	+	o	+		+
LANDSCAPE	+	+	+	+	+	+	+	

o No interrelationship anticipated

+ Interrelationship anticipated

6 Environmental Criteria

6.0 Environmental criteria

In order to assess the impacts of the plan a set of environmental criteria for the area are set out against which policies and objectives could be assessed. The criteria are primarily based on the findings of the baseline study and seek to protect and enhance the existing environment of Creggan and surrounding area. The main objectives of the criteria are to:

- Protect the existing environment;
- Address the environmental problems identified within the baseline study; and
- Satisfy the objectives of national environmental policy identified during the scoping process.

6.1 Biodiversity, flora and fauna

Potential effects to biodiversity, flora and fauna arising from new development on the DLAPC plan lands include changes to existing habitats, biodiversity, flora or fauna. As such the following environmental criteria are used to assess plan policies and objectives in this category:

- B1. To protect existing, valuable species and habitats in the area.
B2. To protect the integrity of designated sites in, adjoining or near the area.
B3. To connect valuable areas of biodiversity in the area.

6.2 Population and human health

Potential effects to population and human health arising from new development on the DLAPC plan lands include:

- Loss of residential and community amenity.
- Risk of traffic or transport accidents.
- Risk of accidents from activities or development.
- Air pollution from traffic, activities or development.
- Water contamination.
- Noise from traffic or activities.
- Vibration from construction or activities.
- Flooding.
- Overburdening of existing local community and social services.

As such the following environmental criteria are used to assess plan policies and objectives in this category:

- PH1: To protect existing residential amenity.
PH2: To provide active community and residential recreation and amenity.
PH3: To protect important elements of community identity.
PH4: To minimise the risk of accidents to the population from traffic or transport.
PH5: To minimise risk of accidents from activities or development in the area.
PH6: To protect against air or other pollution from traffic or other activities in the area.
PH7: To protect against contamination of the local groundwater and local water supply.
PH8: To protect against adverse effects from noise or vibration from traffic or activities in the area.
PH9: To protect against adverse effects from construction or other development activities.
PH10: To avoid / minimise the risk of flooding to the resident and working population.
PH11: To protect existing residential and community infrastructure and services.
PH12: To provide appropriate new community infrastructure and services to support new development.

6.3 Soil

Potential effects to soil arising from new development on the DLAPC plan lands include:

- Contamination of soil.

As such the following environmental criteria are used to assess plan policies and objectives in this category:

- S1: To protect local soil and bedrock
S2: To carry out remedial action where damage has already occurred to the soil or bedrock.

6.4 Water

Potential effects to water resources arising from new development on the DLAPC plan lands include:

- Contamination of groundwater.
- Constriction or loss of water supply.
- Flooding and damage to water quality.

As such the following environmental criteria are used to assess plan policies and objectives in this category:

- W1: To protect against pollution of the groundwater.
W2: To minimise surface water run-off.
W3: To protect against the deterioration of water quality in the waterbodies.
W4: To provide quality water supply.
W5: To minimise loss of water from infrastructure in the area.
W6: To protect any damage to water quality arising from flooding.

6.5 Air

Potential effects to air and climate arising from new development on the DLAPC plan lands include:

- Local air pollution from traffic or activities.
- Anthropogenic gases from activities – energy consumption of major activities.

As such the following environmental criteria are used to assess plan policies and objectives in this category:

- A1: To protect existing air quality.
A2: To minimise levels of anthropogenic pollutants resulting from energy use in the area.
A3: To minimise use of private transport.
A4: To maximise use of walking cycling and public transport.
A5: To maximise use of energy from sustainable or “green” sources.
A6: To maximise use of energy efficient design, construction and management of buildings.

6.6 Material assets

Potential effects to material assets arising from new development on the DLAPC plan lands include:

- Piecemeal and unsustainable urban development.
- Flooding.
- Traffic congestion of road network.
- Overburdening of public transport.
- Surcharging of local infrastructure and services.

As such the following environmental criteria are used to assess plan policies and objectives in this category:

- MA1: To ensure efficient and sustainable development and use of strategic urban land.
- MA2: To ensure sequential and phased growth of the town fringe.
- MA3: To comply with strategic vision for lands within the context of Athlone Town.
- MA4: To avoid / minimise risk of flooding to buildings and structures.
- MA5: To minimise traffic congestion of local and surrounding roads and junctions.
- MA6: To maximise use of pubic transport.
- MA7: To ensure a permeable and managed urban route structure.
- MA8: To ensure appropriate provision and timing of public transport.
- MA9: To ensure appropriate provision and timing of surface water drainage.
- MA10: To ensure appropriate provision and timing of foul water drainage and treatment.
- MA11: To ensure appropriate provision and timing of water supply.

6.7 Cultural heritage

Potential effects to cultural heritage arising from new development on the DLAPC plan lands include:

- :: Damage to built heritage and character including protected structures and archaeology.

As such the following environmental criteria are used to assess plan policies and objectives in this category:

- CH1: To protect existing and potential archaeology and its context.
- CH2: To protect and enhance existing built heritage.
- CH3: To protect important elements of local cultural identity.
- CH4: To ensure that the archaeology and built heritage of the wider area is not adversely effected through the visual impact of new development.

6.8 Landscape

Potential effects to the character of the local landscape arising from new development on the DLAPC plan lands include:

- Damage to, or loss of, landscape character.

As such the following environmental criteria are used to assess plan policies and objectives in this category:

- L1: To retain and enhance important elements of existing landscape quality.
- L2: To connect important aspects of landscape as part of a green infrastructure.
- L3: To ensure that the general landscape character of the wider area is not adversely effected through the visual impact of new development.
- L4: To protect and enhance the quality, character and features of waterways.

7 Consideration of alternative plans

7.0 Consideration of alternative plans

At an early stage in the preparation of the DLAPC three reasonable planning and development alternatives for development were identified by Westmeath County Council. These considered alternative locations outside the plan area, within the reasonable development boundary of the town. The alternatives were considered at a preliminary and strategic level. The preferred alternative (Alternative A) was then chosen and developed to greater detail. The evolution of the area without the implementation of a plan, the “Do nothing” scenario was considered initially to provide comparison with the plan alternatives.

The alternatives were:

- Alternative A - Developing the Creggan lands based on the DLAPC vision.
- Alternative B – Selecting a location closer to the town centre with direct access onto M6.
- Alternative C – Availing of existing, zoned enterprise and employment lands within statutory plans for the area, ie. Athlone Town Plan & Athlone Environs Plan.

7.1 Evolution without implementation of DLAPC

This scenario is based on the evolution of the area in the absence of significant development and assumes the following conditions:

- The character of the area would remain largely unchanged.
- Environmental issues would remain largely unchanged.

The negative environmental consequences of this scenario are as follows:

- Continuous decline in population.
- Devaluation of existing cultural heritage.
- Continued focus on suburban development.
- Fewer options for living/working in the area.
- Failure to take advantage of proximity to public transport.

7.2 The alternatives

Alternative A emerged as the preferred strategic alternative. It was therefore developed to later stages of detail. Its vision and strategies are summarised in section 2. The principal logic for its choice as the preferred alternative is summarised as follows:

Athlone is a large urban centre in the Midlands and is strategically positioned in the centre of Ireland, at a crossing point along the River Shannon. The growth of the town has evolved on an east west basis. In order to fulfil its role as a “Linked Gateway”, the population of Athlone is expected to reach approximately 26,000 persons by 2022¹. Having regard to the siting of Lough Ree immediately north of the town, the River Shannon floodplain and past incidences of seasonal flooding occurring south of the town, it is considered that the future expansion of Athlone will be concentrated on lands to the east of the existing urban area.

Taking into consideration existing zoned land within Athlone and the proximity of Athlone Institute of Technology, the Creggan area represents the largest undeveloped land bank in the town regarded as being suitable to meet future enterprise and employment needs for the gateway. The area has been identified for preparation of a local area plan with an objective for enterprise and employment use in the current environs plan for Athlone 2008-2014.

The assessment of Alternatives B and C, in the context of the Environmental Report, is summarised as follows:

Alternative B – Selecting a location closer to the town centre with direct access onto M6.

Undeveloped lands located closer to the town centre are contained in parcels which are largely subject to Local Area Plan preparation. The list of plans is as follows: Lissywollen South, Curragh-Lissywollen, Cornamagh, Cornamaddy, Baylough, Irishtown and Loughanaskin. These plans provide for town centre, primarily residential use and complimentary mixed uses. In the case of Lissywollen South, an area of approximately 10 hectares has been reserved for enterprise use. Loughandonning Local Area Plan is being prepared at present and the primary use proposed herein is also residential.

¹ According to Fig 4.2 Midland Region Population Targets for 2022, Draft Midland Regional Planning Guidelines 2010-2016

There are flood risk issues associated with this latter area and the Baylough Local Area Plan area, which limit the lands available for development. Curragh Lissywollen and Lissywollen South LAP areas are accessed from off the interchange. Direct access onto the M6 is not available from any of these local area plan areas. Sufficient lands to fulfil the vision of the Creggan plan are not available at the scale required closer to the town centre, owing to pre-existing commitments in adopted or proposed Local Area Plans and by reason of flood risk constraints. Having regard to the foregoing, Alternative B is not deemed to be a viable option.

Alternative C – Availing of existing zoned enterprise and employment lands within statutory plans for the area, ie Athlone Town Plan & Athlone Environs Plan

Existing zoned lands for enterprise and employment use in the Athlone Town Plan and the Athlone Environs Plan comprise 94.4ha, which is dispersed on the northern and eastern sectors of the town at Blyry Industrial Estate and Garrycastle IDA Business Park. Blyry Industrial Estate has been almost fully developed and comprising smaller scale enterprises and warehousing. There are approximately 44 hectares of undeveloped enterprise and employment lands located in the vicinity of the IDA Business Park. Having regard to the scale of lands required in a single land bank considered necessary to fulfil the vision of the plan, in regard to the expansion of enterprise and employment and the development of a major centre of international profile it is considered that Alternative B would not be acceptable.

8.1 Identification of potential environmental issues relevant to the plan

As required by Annex I of the SEA Directive, environmental problems that may be relevant to the plan are set out as follows:

- Potential traffic impacts on the local and strategic road infrastructure including the capacity and congestion of roads and junctions.
- Quality and potential vulnerability of the landscape.
- Provision and capacity of transport infrastructure.
- Capacity and provision of social and community infrastructure.
- Capacity and provision of amenity and recreation.
- Capacity and provision of local infrastructure and services.
- Potential vulnerability of geology and groundwater.
- Vulnerability of areas of natural heritage (flora and fauna) including designated sites.
- Sensitivity of built heritage and archaeology.
- Temporary effects such as construction.

8.2 Categories of plan objectives

The vision, strategies and guidelines of the DLAPC were identified and grouped into six categories of plan objectives. The plan objectives were considered against the range of environmental criteria established in Section 6. The categories are as follows:

- Land use and development.
- Natural and built heritage.
- Walking and cycling.
- Transport and traffic.
- Open space.
- Community and social infrastructure.

The likely effect of the plan objectives was recorded in a matrix format, indicating positive effect, negative effect, no effect and uncertain effect.

Type of Effect	Description
+ Potential positive effect	Likely to have a positive effect on the environment.
- Potential negative effect	Likely to have negative impact on the environment.
0 No effect	No effect or neutral effect.
<> Uncertain effect	The likely effect on the environment is uncertain.

The detailed assessment matrices are included in the appendices. The outcome of these assessments is described in the following sections. The matrices are indicative and are not to be considered as exhaustive. Their main purpose is to identify particular plan objectives or categories of objectives that are likely to have negative or uncertain effects on the environment.

The assessment is also based on the existing understanding of the state of the environment, problems and vulnerability. Given the nature of the process, the significance of some effects is unknown and unlikely to be known without further elaboration of plan objectives or further detailed research. In many cases, this level of detail is more appropriate to Environmental Impact Assessment than Strategic Environmental Assessment.

The assessment provides a structure for mitigation measures necessary to address any likley negative effects.

8.3 Land use and development

The land use and development objectives of the plan are grouped as follows:

Land use and development objectives	
a)	Consolidate and develop existing economic and enterprise activity and promote and facilitate the development and expansion of a knowledge-based economy in Character Area A.
b)	Opportunity sites as eastern ‘gateway’ to Athlone with high visibility to the N62 Dublin Road in Character Area A.
c)	Provide for Research & Development adjacent to AIT (Character Area A).
d)	Facilitate high order enterprise and employment uses including provision of corporate headquarters for indigenous and foreign companies in Character Area B.
e)	To create an entrance portal into Athlone in Character Area B with signature iconic building, to signify the status of Athlone as a gateway town.
f)	Provide an opportunity for an integrated and dynamic international trading hub including world-class convention centre in Character Area C.
g)	Facilitate a mix of specialist uses, in addition to community, recreational and educational development, including ancillary residential, in Character Area C.

The plan objectives for land use and development are likely to have mixed effects. There are a significant number of effects that are uncertain. Uncertain effects are due to:

- Uncertainty regarding the urban and landscape structure and concepts for the plan.
- The need to consider certain effects when the more detailed nature and extent of projects becomes known (Development management/EIA stages).
- Gaps in our understanding of the environment.

Many of the effects of development on biodiversity, flora and fauna and designated sites are uncertain as the plan does not prescribe an overall urban and landscape structure against which proposals can be assessed.

The matrix highlights under population and human health effects the following:

- Potential for increase in accidents arising from increased traffic levels,
- Potential for reduction in air quality deriving from increased traffic levels, related to new development,
- Potential for adverse effects from construction,
- Potential risk from flooding,
- Potential for adverse effects on existing community infrastructure.

Many of the effects concerning soils and water are uncertain. This reflects uncertainty regarding the urban and landscape structure and concepts and the need to consider certain effects when the more detailed nature and extent of projects becomes known (Development management/EIA stages).

In relation to air quality, the matrix highlights potential for reduction in air quality deriving from increased traffic levels, related to new development and potential for anthropogenic pollutants deriving from design, construction and management of buildings.

Many of the effects relating to material assets are uncertain. This is partly because the DLAPC does not set out a landscape and urban structure concept, and partly because of the need to consider certain effects when the more detailed nature and extent of projects becomes known (Development management/EIA stages). Notably, there is uncertainty in relation to objectives relating to efficient and sustainable urban form, sequential and phased development, provision and timing of public transport, flooding, cultural heritage and landscape.

8.4 Natural and built heritage

The natural and built heritage objectives of the plan are grouped as follows:

Natural and built heritage	
a)	Provision of wildlife corridor along River AI (30m attenuation corridor) & Cloonbonny River
b)	To preserve the integrity of structures listed on the National Inventory of Architectural Heritage.
c)	To protect the ecological value of existing wildlife corridors along the railway lines and watercourses.
d)	To protect existing landscape features of character and amenity value such as significant hedgerows and tree stands and incorporate them into the urban structure.
e)	The built and natural heritage should be protected and incorporated sensitively into the development of the area.
f)	A policy of planting new hedgerows as part of the overall landscape should be encouraged.

Overall, the plan objectives for natural and built heritage are likely to have positive effects on the environment. There are a number of objectives that are likely to have neutral effects. The effects of the natural and built heritage objectives on undiscovered archaeology remain uncertain.

8.5 Walking and cycling

The walking and cycling objectives of the plan are grouped as follows:

Walking and cycling	
a)	Potential to create landscaped walkway/cycleway to the west of River AI watercourse to facilitate access to AIT lands including playing fields.
b)	To provide a cycleway along disused railway.
c)	To improve the existing street network in terms of pedestrian and cycle facilities.
d)	To overcome the barriers of the existing railway lines and watercourses by establishing new pedestrian and cycle connections by means of bridges.
e)	To provide for an amenity walk through Crosswood Bog.
f)	To improve the existing road network in terms of pedestrian and cycle facilities and necessary capacity improvements.

Overall, the plan objectives for walking and cycling are likely to have positive effects on the environment. There are a number of objectives that are likely to have neutral effects. Effects of the walking and cycling objectives on undiscovered archaeology will remain uncertain.

8.6 Transport and traffic

The transport and traffic objectives of the plan are grouped as follows:

	Transport and traffic
a)	To re-open disused Mullingar to Athlone railway.
b)	To provide new access road off N62 to serve commercially zoned lands.
c)	To provide for the Loughandonning Link Road/urban avenue as central spine and link between north and south.
d)	To provide an internal network of roads within the Strategic Gateway Zone.
e)	To provide a secondary access to the Strategic Gateway Zone off the N62.
f)	To provide a new junction layout at the intersection of the N62 and Loughandonning Road.
g)	To facilitate the development of a new transportation hub based upon a new railway station.
h)	To provide for a bus service throughout the plan area.
i)	To require workplaces and educational facilities to produce mobility & transportation plans.

The plan objectives for transport and traffic are likely to have mixed effects. Notably, public transport objectives are, overall, likely to have positive effects whereas objectives for roads and infrastructure which would promote use of private transport are likely to have potential negative effects, and will require mitigation. A number of effects are considered uncertain given the level of detail of proposals in the DLAPC. These issues may be clarified during the LAP process or may be more appropriately addressed in the development management/EIS stages.

In relation to biodiversity, the matrix highlights the potential negative effects of the road infrastructure on local flora and fauna, outside of the protected sites. Under population and human health, there is potential for negative effects on residential amenity arising from potential congestion of the local road network, an increased risk of accidents from higher traffic levels, potential reduction in air quality deriving from increased traffic levels, related to new development, potential impacts on water quality arising from run-off from roads, streets and transport infrastructure.

In terms of uncertain effects, it was unclear whether transport and traffic objectives would have positive effects overall for efficient, sustainable, sequential and phased development. The timing and delivery of rail transport is considered uncertain as responsibility for the delivery of this infrastructure will rest with the transport authorities. The rail station has not yet been included as an objective in relevant, higher-tier plans and a commitment to provide or support it has not been secured from the transport authorities.

Effects of the transport and traffic objectives on undiscovered archaeology will remain uncertain.

8.7 Open space

The open space objectives of the plan are grouped as follows:

	Open space
a)	A linear green corridor is proposed along the entirety of the Crosswood Bog boundary.
b)	An open space buffer designated along the western corridor of the plan area.
c)	A linear open space corridor to the east of the N62, to consolidate and reinforce existing built heritage.
d)	To reserve portion of Character Area B subject to flooding for open space use.
e)	To provide a network of play areas in strategic locations overlooked by areas of housing and linked by pedestrian and cycle pathways.
f)	Maximise the use of green open spaces to facilitate sustainable drainage systems and enhance the potential for biodiversity.
g)	Seek to ensure that commercial enterprises plant and landscape their grounds in a manner that connects to the overall public realm.
h)	Seek the greening of existing streets and spaces, together with the provision of new and improved street lighting, bicycle parking and well-designed street furniture spaced at regular intervals.
i)	Promote the provision of a recreation and sports uses within the plan area, suitable for use by the surrounding community.
j)	Development fronting the M6, N62 and the Loughandonning Spine Road shall be located within highly landscaped settings.

Overall, the plan objectives for open space are likely to have positive effects on the environment, particularly in relation to population and human health, air, cultural heritage and landscape. There are a number of objectives that are likely to have neutral effects. A potential, negative effect may occur where areas of significance for biodiversity, flora and fauna are disturbed or otherwise damaged by amenity and cycle and walkways.

8.8 Community and social infrastructure

The community and social infrastructure objectives of the plan are grouped as follows:

	Community and social infrastructure
a)	To protect the residential amenity of existing dwellings.
b)	To provide for a range of educational, community uses and local shopping to serve the area.
c)	To provide a neighbourhood centre to the north of the proposed Loughandonning Road, in order to consolidate commercial activity at Kilmartin Retail Centre.
d)	To facilitate the provision of childcare facilities within new enterprise and employment areas to serve the needs of the workforce and local community.

In general, the plan objectives for community and social infrastructure are likely to have neutral or positive effects on the environment. Uncertain effects stem from uncertainties as to the broad location, nature and extent of the infrastructure. Uncertainty remains, therefore, in relation to potential effects on local biodiversity, flora and fauna, soil, and location in relation to public transport, potential congestion and decline in air quality arising from traffic generation. Effects of the community and social infrastructure on aspects of cultural heritage will remain uncertain.

8.9 Mitigation of effects

This section reviews the measures that have been adopted to address the likely significant effects or impacts of the plan. The SEA Directive provides broad guidance on defining what impacts are significant. The EPA Guidelines on SEA (2003) stated that mitigation “may involve preventing impacts altogether, reducing their magnitude as much as possible and/or probability of occurrence, or putting in place measures to remedy effects after they have occurred, or to compensate for them by providing environmental benefits elsewhere”. SEA Regulations (S.I. No. 435 of 2004) state that significant effects should include secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary, positive and negative effects.

The assessment of the environmental effects of the plan revealed some incompatibilities between environmental criteria and the development objectives of the plan. For this reason, measures that seek to mitigate the effects of these objectives were formulated. In some cases this may involve making significant changes to the plan. In instances where objectives are thought to have uncertain environmental effects, additional policies may be formulated where appropriate.

The broad DLAPC strategies have been framed in the light of the Environmental Report and, in particular, the significant negative and uncertain effects. In addition it is recommended that the following objectives or measures are included or clarified in the DLAPC:

- Preparation of a landscape and urban structure concept for the DCLAP area to provide greater certainty as to the location, nature and extent of land uses and development.
- Objectives for the protection and restoration of Crosswood Bog and measures to ensure major development proposals in adjacent areas, particularly in Character Area B, do not impact on the existing hydro-geological regime of the bog habitat.
- All of the recorded archaeological sites and buildings of architectural merit (including their environs), as highlighted in this report, should be avoided and protected from any impact during the proposed development of Creggan LAP. If impact on sites cannot be avoided specific recommendations and mitigatory measures should be undertaken.
- Detailed, development specific archaeological and architectural assessments should be undertaken in advance of any future development. These should include the results of or recommend the undertaking of non-intrusive surveys such as topographical, geophysical and architectural survey and intrusive investigations such as archaeological test trenching. Archaeological monitoring of all topsoil stripping is also recommended for all greenfield areas within the Creggan LAP study area.
- An objective to have regard to the Shannon Regional Fisheries Board Guidelines for Watercourses in Urban Environments in the preparation of an overall landscape plan.
- Objectives for assessment of the potential cumulative effects of vehicular traffic on the local and strategic road network.

- To ensure design, construction and management of the road network to prioritise pedestrians, cyclists and public transport.
- An objective to require construction management plans, prepared as part of the later development management stages.
- An objective to require preparation of a detailed flood risk assessment(s) (FRA) at the later development management/EIA stages.
- An objective to provide an appropriate buffer between proposed development and established community infrastructure in Character Area C.
- To prioritise a bus-based public transport service at the earliest phases of development and to seek the earliest delivery of rail services to augment this service.
- To provide for sustainable movement with effective links to the existing urban area.
- Objectives to ensure sustainable design, construction and management of buildings including ecological foot-printing of major development proposals as part of any EIA process.
- Objectives to ensure the effects on new streets and roads on local flora and fauna are minimised.
- Objectives to augment green corridors along new roads and streets.
- An objective to require the integration of sustainable urban drainage measures in the landscape structure of the area.
- An objective to ensure that cycleways and walkways are located and designed in such as way as to protect existing biodiversity, flora and fauna, including an objective to ensure any proposed amenity route accross or through Crosswood Bog will be subject to further detailed assessment in consultation with the National Parks and Wildlife Service.
- An objective to locate community and social infrastructure where walking and cycling and use of public transport can be maximised.

9

Monitoring

9.0 Monitoring

It is a requirement of Article 10 of the SEA Directive that Member States monitor the significant environmental effects of the implementation of plans in order to identify at an early stage unforeseen adverse effects and to be able to undertake appropriate remedial action.

For the purposes of monitoring the implementation and effects of the plan, it is recommended that a Review Group is established. This group should be established by Westmeath County Council in conjunction with Athlone Town Council, and should include the Environmental Protection Agency and other relevant agencies to ensure the implementation of the plan does not compromise the environmental criteria identified for the area.

As part of the monitoring process, the Review Group will seek to:

- Carry out appropriate survey work and collate the necessary data required to effectively monitor the environmental effects of the plan.
- Prepare an annual monitoring report on the implementation of the plan.

Monitoring will have particular regard to the key issues identified in the assessment of the plan, including special environmental designations, archaeology, water quality, flooding, air quality and traffic.

It is recommended that monitoring should focus on the main environmental issues and gaps in existing data, in particular the interdependence between protected habitats, flora and fauna, water quality including the hydro-geological regime and human health.

A detailed programme for monitoring will be put in place. Responsibility for monitoring will rest with the Council.

9.1Monitoring Proposals and environmental indicators

The following measures are proposed to monitor the effects on the environment of implementing the draft LAP, presented in terms of the achievement of the environmental protection criteria and the impact on the environmental factors that the SEA legislation requires to be considered.

Indicators may be quantitative and/ or qualitative in nature and may:

1. State the environment indicators (quality, or quantity of physical and biological or chemical phenomenon).
2. Stress indicators (reflecting development effects).
3. Performance indicators (used to evaluate long-term achievements in environmental management and protection).
4. Sustainable development indicators (seeking to describe and measure key relationships between economic, social and environmental factors).

Biodiversity, flora and fauna		
Environmental criteria	Indicators	Targets
B1. To protect existing, valuable species and habitats in the area.	Removal of hedgerows.	Minimise loss of hedgerow habitats.
B2. To protect the integrity of designated sites in, adjoining or near the area.	Removal of trees.	Retention of biodiversity.
B3. To connect valuable areas of biodiversity in the area.	Water quality indicators.	Broadleaf planting.
	Hydro-geological indicators.	Retention of value of areas of national and international importance.
	Air quality indicators.	Prevention of development that would impact upon habitats or species of importance.
	Obstruction of pathways or movement corridors.	Prevention of invasive species.
	Drying out of bog.	Implementation of Groundwater Protection Scheme.
	Habitat mapping.	Bog regeneration.

Population and human health		
Environmental criteria	Indicators	Targets
<p>PH1: To protect existing residential amenity.</p> <p>PH2: To provide active community and residential recreation and amenity.</p> <p>PH3: To protect important elements of community identity.</p> <p>PH4: To minimise the risk of accidents to the population from traffic or transport.</p> <p>PH5: To minimise risk of accidents from activities or development in the area.</p> <p>PH6: To protect against air or other pollution from traffic or other activities in the area.</p> <p>PH7: To protect against contamination of the local groundwater and local water supply.</p> <p>PH8: To protect against adverse effects from noise or vibration from traffic or activities in the area.</p> <p>PH9: To protect against adverse effects from construction or other development activities.</p> <p>PH10: To avoid / minimise the risk of flooding to the resident and working population.</p> <p>PH11: To protect existing residential and community infrastructure and services.</p> <p>PH12: To provide appropriate new community infrastructure and services to support new development.</p>	<p>Notices served under noise Regulations.</p> <p>Health and Safety reports to HSE.</p> <p>Flood reports to OPW.</p> <p>Air quality indicators.</p> <p>Drinking water quality indicators.</p> <p>Commuting trends and modal split.</p> <p>Provision of public transport facilities.</p> <p>Provision of cycle paths.</p> <p>Provision of children's play areas.</p> <p>Provision of public open spaces.</p> <p>Provision/ retention of community infrastructure.</p> <p>Provision of home-zone and integrated traffic calming measures.</p> <p>Quantity and quality of open space provision.</p>	<p>Reduced levels of incidences of noise pollution.</p> <p>Reduced accident levels.</p> <p>Avoidance of flood damage.</p> <p>Increased provision of public transport services.</p> <p>Reduced private car usage.</p> <p>Compliance with drinking water quality standards.</p> <p>NSS and Regional Planning Guidelines population targets.</p>

Soil		
Environmental criteria	Indicators	Targets
<p>S1: To protect local soil and bedrock.</p> <p>S2: To carry out remedial action where damage has already occurred to the soil or bedrock.</p>	<p>Hydro-geology.</p> <p>Water table.</p>	<p>Protection of locally important aquifer and hydro-geological regime.</p>

9 Monitoring

Water		
Environmental criteria	Indicators	Targets
<p>W1: To protect against pollution of the groundwater.</p> <p>W2: To minimise surface water run-off.</p> <p>W3: To protect against the deterioration of water quality in the waterbodies.</p> <p>W4: To provide quality water supply.</p> <p>W5: To minimise loss of water from infrastructure in the area.</p> <p>W6: To protect any damage to water quality arising from flooding.</p>	<p>Changes in water quality identified through water quality monitoring as a result of implementation of the Water Framework Directive, Nitrates Directive, Groundwater Directive and Groundwater Protection Scheme when implemented, Use of Sludge Regulations, Cross-Compliance Regulations.</p> <p>Changes in water quality identified as a result of monitoring under IPPC licensing or Waste Licensing.</p> <p>Changes in water quality identified as a result of River Water Sampling.</p>	<p>Compliance with water quality standards.</p> <p>Improvement or at least no deterioration in ground water quality.</p> <p>Rainwater harvesting.</p> <p>Grey water re-cycling.</p> <p>Provision of sustainable urban drainage systems.</p> <p>Compliance with drinking water quality.</p> <p>Greater public awareness.</p>

Air		
Environmental criteria	Indicators	Targets
<p>A1: To protect existing air quality.</p> <p>A2: To minimise levels of anthropogenic pollutants resulting from energy use in the area.</p> <p>A3: To minimise use of private transport.</p> <p>A4: To maximise use of walking cycling and public transport.</p> <p>A5: To maximise use of energy from sustainable or “green” sources.</p> <p>A6: To maximise use of energy efficient design, construction and management of buildings.</p>	<p>Air quality indicators.</p> <p>Use of sustainable energy such as CHP and District Heating.</p> <p>Reduction in turf cutting.</p> <p>Commuting trends and modal split.</p> <p>Percentage of broadleaf and native tree species planted.</p> <p>Building Energy Ratings.</p>	<p>Increased provision of and use of public transport.</p> <p>Reduced private car use/ ownership.</p> <p>Increased public rights of way and established and maintained walking and cycling routes.</p> <p>Broadleaf afforestation.</p> <p>Increased proportion of energy generated from renewable energy sources.</p> <p>Compliance or exceedance of Building Regulation standards for the conservation of fuel and power.</p> <p>Maintenance of low levels or levels within EU limits of Sulphur dioxide, Nitrogen Oxides and particulate matter.</p> <p>Greater public awareness.</p>

Material assets		
Environmental criteria	Indicators	Targets
<p>MA1: To ensure efficient and sustainable development and use of strategic urban land.</p> <p>MA2: To ensure sequential and phased growth of the town fringe.</p> <p>MA3: To comply with strategic vision for lands within the context of Athlone Town.</p> <p>MA4: To avoid / minimise risk of flooding to buildings and structures.</p> <p>MA5: To minimise traffic congestion of local and surrounding roads and junctions.</p> <p>MA6: To maximise use of public transport</p> <p>MA7: To ensure a permeable and managed urban route structure.</p> <p>MA8: To ensure appropriate provision and timing of public transport.</p> <p>MA9: To ensure appropriate provision and timing of storm water drainage.</p> <p>MA10: To ensure appropriate provision and timing of foul water drainage and treatment.</p> <p>MA11: To ensure appropriate provision and timing of water supply.</p>	<p>Urban structure.</p> <p>Density of development.</p> <p>‘Leap frogging’ of Greenfield land.</p> <p>Conformity of development proposals with Local Area Plan vision and objectives.</p> <p>Flood risk assessment.</p> <p>Survey of queuing / traffic congestion.</p> <p>Modal split.</p>	<p>Compact and permeable urban structure.</p> <p>Clarity of rural – urban landscape transition.</p> <p>Avoidance of areas prone to flooding.</p> <p>Permeability of urban structure.</p> <p>Low traffic speeds.</p> <p>Traffic management plans.</p> <p>Upgrade of movement infrastructure where necessary.</p> <p>Implementation of Sewerage Masterplan and Drainage Plan.</p> <p>Linkage to existing urban area.</p>

9 Monitoring

Cultural heritage		
Environmental criteria	Indicators	Targets
<p>CH1: To protect existing and potential archaeology and its context.</p> <p>CH2: To protect and enhance existing built heritage.</p> <p>CH3: To protect important elements of local cultural identity.</p> <p>CH4: To ensure that the archaeology and built heritage of the wider area is not adversely effected through the visual impact of new development.</p>	<p>Number of monuments or cases in areas of archaeological potential in the Record of Monuments and Places that have been recorded or subjected to physical/geophysical exploration/excavation as a result of an application for planning permission.</p> <p>Number of monuments in the RMP or other monuments that have been damaged, including their fabric or setting, by development granted planning permission.</p> <p>Number of archaeological objects found, catalogued and retained with the National Museum.</p> <p>Number of structures included in the NIAH.</p> <p>Visual impact assessment.</p>	<p>Retain or increase as appropriate number of valued structures afforded protection.</p> <p>Architectural Heritage Protection Guidelines for Planning Authorities.</p> <p>Retain or improve integrity of built fabric through development where feasible.</p> <p>No damage occurring to structures or monuments, or their character or setting, due to insensitive development.</p> <p>Respect setting of protected monuments.</p>

Landscape		
Environmental criteria	Indicators	Targets
<p>L1: To retain and enhance important elements of existing landscape quality.</p> <p>L2: To connect important aspects of landscape as part of a green infrastructure.</p> <p>L3: To ensure that the general landscape character of the wider area is not adversely effected through the visual impact of new development.</p> <p>L4: To protect and enhance the quality, character and features of waterways.</p>	<p>Landscape protection designations.</p> <p>Protected views.</p> <p>Landscape character assessment.</p> <p>Visual impact assessment.</p> <p>Hedgerow and tree survey.</p>	<p>Integrated urban and landscape plan.</p> <p>Retain significant trees and tree groups.</p> <p>Net increase in tree planting.</p> <p>Identify and maintain riparian zones.</p> <p>Clear rural – urban transition on approach roads.</p> <p>Avoidance of visual clutter, hoardings etc.</p>

10.1 Report findings

The draft Local Area Plan conforms with the relevant local, regional and national planning policy relating to the designation of Athlone as a linked gateway.

The strategic environmental assessment indicates that the plan may have a combination of negative, neutral and positive effects. Where negative effects are expected, mitigation measures are identified, including measures to prevent, reduce, or off-set adverse effects.

Areas where further more detailed study may be required on foot of specific development proposals are also identified.

10.2 Next steps

The Draft Local Area Plan for Creggan will be put on display for public consultation in 2010. Together with the Environmental Report. The public will have 6 weeks during which time submissions/observations may be made to the Planning Authority on both the Draft Local Area Plan and the Environmental Report. The Environmental Report will be updated to reflect any amendments made to the Draft Local Area Plan. The amended Environmental Report and the proposed amendments to the Draft Local Area Plan will then go on public display for a further 4 weeks. A final Environmental Report and SEA Statement will accompany the adopted Local Area Plan.

Appendix I Assessment of the effects of the plan on the environment

The following assessment matrices should be read in conjunction with Section 6 and Section 8 of this report.

Environmental Criteria assessed against land use and development objectives

	B1	B2	B3	PH1	PH2	PH3	PH4	PH5	PH6	PH7	PH8	PH9	PH10	PH11	PH12	S1	S2	W1	W2	W3	W4	W5	W6	A1	A2	A3	A4	A5	A6	MA1	MA2	MA3	MA4	MA5	MA6	MA7	MA8	MA9	MA10	MA11	CH1	CH2	CH3	CH4	L1	L2	L3	L4			
Land use and development objectives																																																			
a) Consolidate and develop existing economic and enterprise activity and promote and facilitate the development and expansion of a knowledge-based economy in Character Area A.	◊	0	◊	0	0	0	-	◊	-	◊	◊	-	◊	0	+	◊	◊	◊	◊	◊	◊	◊	◊	◊	-	-	-	0	◊	◊	◊	◊	+	◊	◊	0	◊	0	0	0	0	◊	◊	◊	◊	◊	◊	◊	◊	◊	
b) Opportunity sites as eastern 'gateway' to Athlone with high visibility to the N62 Dublin Road in Character Area A.	◊	0	◊	0	0	◊	-	◊	-	◊	◊	-	◊	0	+	◊	◊	◊	◊	◊	◊	◊	◊	◊	◊	-	-	-	0	◊	◊	◊	◊	+	◊	◊	0	◊	0	0	0	0	◊	◊	◊	◊	◊	◊	◊	◊	◊
c) Provide for Research & Development adjacent to AIT (Character Area A).	◊	0	◊	0	0	0	-	◊	-	◊	◊	-	◊	0	+	◊	◊	◊	◊	◊	◊	◊	◊	◊	-	-	-	0	◊	◊	◊	◊	+	◊	◊	0	◊	0	0	0	0	◊	◊	◊	◊	◊	◊	◊	◊	◊	◊
d) Facilitate high order enterprise and employment uses including provision of corporate headquarters for indigenous and foreign companies in Character Area B.	◊	◊	◊	◊	0	◊	-	◊	-	◊	◊	-	◊	0	+	◊	◊	◊	◊	◊	◊	◊	◊	◊	-	-	-	0	◊	◊	◊	◊	+	◊	◊	0	◊	0	0	0	0	◊	◊	◊	◊	◊	◊	◊	◊	◊	◊
e) To create an entrance portal into Athlone in Character Area B with signature iconic building, to signify the status of Athlone as a gateway town.	◊	◊	◊	◊	0	◊	-	◊	-	◊	◊	-	◊	0	+	◊	◊	◊	◊	◊	◊	◊	◊	◊	-	-	-	0	◊	◊	◊	◊	+	◊	◊	0	◊	0	0	0	0	◊	◊	◊	◊	◊	◊	◊	◊	◊	◊
f) Provide an opportunity for an integrated and dynamic international trading hub including world class convention centre in Character Area C.	◊	◊	◊	◊	0	◊	-	◊	-	◊	◊	-	◊	-	+	◊	◊	◊	◊	◊	◊	◊	◊	◊	-	-	-	0	◊	◊	◊	◊	+	◊	◊	0	◊	0	0	0	0	◊	◊	◊	◊	◊	◊	◊	◊	◊	◊
g) Facilitate a mix of specialist uses, in addition to community, recreational and educational development, including ancillary residential, in Character Area C.	◊	◊	◊	◊	0	◊	-	◊	-	◊	◊	-	◊	-	+	◊	◊	◊	◊	◊	◊	◊	◊	◊	-	-	-	0	◊	◊	◊	◊	+	◊	◊	0	◊	0	0	0	0	◊	◊	◊	◊	◊	◊	◊	◊	◊	◊

- Potential negative effect
- + Potential positive effect
- ◊ Uncertain effect
- 0 Potential neutral effect

Environmental Criteria assessed against natural and built heritage objectives

	B1	B2	B3	PH1	PH2	PH3	PH4	PH5	PH6	PH7	PH8	PH9	PH10	PH11	PH12	S1	S2	W1	W2	W3	W4	W5	W6	A1	A2	A3	A4	A5	A6	MA1	MA2	MA3	MA4	MA5	MA6	MA7	MA8	MA9	MA10	MA11	CH1	CH2	CH3	CH4	L1	L2	L3	L4			
Natural and built heritage objectives																																																			
a) Provision of wildlife corridor along River AI (30m attenuation corridor).	+	+	+	+	o	+	o	o	+	+	o	o	+	o	o	+	+	+	+	+	o	o	+	+	+	o	o	o	o	o	+	-	o	o	o	o	o	o	o	o	o	o	◇	o	+	o	+	+	+	+	+
b) Preserve the integrity of structures listed on the National Inventory of Architectural Heritage.	o	o	o	+	o	+	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	+	+	o	o	o	o	o	o	o	o	o	o	o	+	+	+	+	o	o	+	o	
c) Protect the ecological value of existing wildlife corridors along the railway lines and watercourses.	+	+	+	o	o	+	o	o	+	+	o	o	+	o	o	+	+	+	+	+	o	o	+	+	o	o	o	o	o	o	+	o	o	o	o	o	o	o	o	o	o	◇	o	+	+	+	+	+	+	+	+
d) Protect existing landscape features of character and amenity value such as significant hedgerows and tree stands.	+	+	+	+	+	+	o	o	+	o	o	o	+	o	o	+	+	+	+	+	o	o	+	+	o	o	o	o	o	o	+	o	o	o	o	o	o	o	o	o	o	+	+	+	+	+	+	+	+	+	
e) Built and natural heritage should be protected and incorporated sensitively into the development of the area.	+	+	+	+	o	+	o	o	+	o	o	o	+	o	o	+	+	+	+	+	o	o	+	+	o	o	o	o	o	+	+	o	o	o	o	o	o	o	o	o	o	+	+	+	+	+	+	+	+		
a) Plant new hedgerows as part of the overall landscape.	+	+	+	+	+	+	o	o	+	+	+	+	+	o	o	+	+	+	+	+	o	o	+	o	o	o	o	o	o	+	+	o	o	o	o	o	o	o	o	o	o	+	+	+	+	+	+	+	+	+	

- Potential negative effect
- + Potential positive effect
- ◇ Uncertain effect
- o Potential neutral effect

Environmental Criteria assessed against walking and cycling objectives

	B1	B2	B3	PH1	PH2	PH3	PH4	PH5	PH6	PH7	PH8	PH9	PH10	PH11	PH12	S1	S2	W1	W2	W3	W4	W5	W6	A1	A2	A3	A4	A5	A6	MA1	MA2	MA3	MA4	MA5	MA6	MA7	MA8	MA9	MA10	MA11	CH1	CH2	CH3	CH4	L1	L2	L3	L4	
Walking and cycling objectives																																																	
a) Create landscaped walkway/cycleway to the west of River AI watercourse, to facilitate access to AIT lands including playing fields.	◇	o	◇	+	+	+	+	o	+	o	o	o	o	+	o	o	o	o	o	o	o	o	o	o	+	+	+	o	o	o	o	+	o	+	o	o	o	o	o	o	o	o	o	+	+	o	◇		
b) Provide a cycleway along disused railway.	+	o	o	+	+	+	+	o	+	o	o	o	o	+	o	o	o	o	o	o	o	o	o	o	+	+	+	o	o	o	o	+	o	+	o	o	o	o	o	o	o	o	o	o	+	o	o		
c) Improve the existing street network in terms of pedestrian and cycle facilities.	o	o	o	+	+	o	+	o	+	o	o	o	o	+	o	o	o	o	o	o	o	o	o	o	+	+	+	o	o	+	o	+	o	+	+	+	o	o	o	o	o	o	o	o	o	o	o		
d) New pedestrian and cycle connections by means of bridges over existing railway lines and watercourses.	o	o	o	+	+	o	+	o	+	o	o	o	+	o	+	o	o	o	o	o	o	o	o	o	+	+	+	o	o	+	+	+	+	+	+	o	o	o	o	o	o	o	o	o	o	o	o	o	
e) Provide for an amenity walk through Crosswood Bog.	◇	◇	◇	o	+	+	o	o	o	o	o	o	o	+	◇	◇	◇	◇	o	o	o	o	o	o	o	o	o	+	o	o	o	o	o	o	o	o	o	o	o	o	o	o	+	o	+	+	o	o	
f) To improve the existing road network in terms of pedestrian and cycle facilities and necessary capacity improvements	o	o	o	o	o	o	+	o	+	o	o	o	o	o	o	◇	◇	◇	◇	◇	◇	o	o	o	o	+	+	+	o	o	+	+	+	+	+	+	+	o	o	o	o	o	o	o	o	o	o	o	o

- Potential negative effect
- + Potential positive effect
- ◇ Uncertain effect
- o Potential neutral effect

Appendix I - Tabular Assessment of the effects of the plan on the environment

Environmental Criteria assessed against transport and traffic objectives

	B1	B2	B3	PH1	PH2	PH3	PH4	PH5	PH6	PH7	PH8	PH9	PH10	PH11	PH12	S1	S2	W1	W2	W3	W4	W5	W6	A1	A2	A3	A4	A5	A6	MA1	MA2	MA3	MA4	MA5	MA6	MA7	MA8	MA9	MA10	MA11	CH1	CH2	CH3	CH4	L1	L2	L3	L4		
Transport and traffic objectives																																																		
a) Re-open disused Mullingar to Athlone railway.	0	0	0	0	0	0	0	0	+	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	+	+	+	◇	0	+	0	+	0	+	+	0	◇	0	0	0	0	0	+	0	0	0	0	0	0	0
b) Provide new access road off N62 to serve commercially zoned lands.	◇	0	0	0	0	0	-	0	-	◇	0	-	0	0	0	◇	◇	◇	-	◇	0	0	0	-	-	◇	◇	0	0	◇	+	+	0	-	0	+	0	0	0	0	◇	◇	0	0	-	0	0	0	0	
c) To provide for the Loughandonning Link Road/urban avenue as central spine and link between north and south.	◇	◇	◇	◇	◇	0	-	0	-	◇	0	-	0	0	0	◇	◇	◇	-	◇	0	0	0	-	-	◇	◇	0	0	◇	+	+	0	-	0	+	0	0	0	0	-	◇	0	-	-	◇	-	0		
d) Provide an internal network of roads within the Strategic Gateway Zone fitted with pedestrian and cycle infrastructure.	◇	◇	◇	◇	◇	0	-	0	-	◇	0	-	0	0	0	◇	◇	◇	-	◇	0	0	0	-	-	◇	◇	0	0	◇	+	+	0	-	0	+	0	0	0	0	-	◇	0	◇	-	-	0	◇		
e) Provide a secondary access to the Strategic Gateway Zone off the N62.	◇	◇	◇	◇	◇	0	-	0	-	◇	0	-	0	0	0	◇	◇	◇	-	◇	0	0	0	-	-	◇	◇	0	0	◇	+	+	0	-	0	+	0	0	0	0	◇	◇	0	0	0	0	0	0	0	
f) Provide a new junction layout at the intersection of the N62 and Loughandonning Road.	◇	◇	◇	◇	◇	0	-	0	0	◇	0	-	0	0	0	◇	◇	◇	-	◇	0	0	0	-	-	◇	◇	0	0	◇	+	+	0	-	0	+	0	0	0	0	◇	◇	0	0	0	0	0	0	0	
g) Facilitate the development of a new transportation hub based upon a new railway station.	◇	◇	◇	◇	◇	0	0	0	+	◇	0	-	0	0	+	◇	◇	◇	-	◇	0	◇	0	-	+	+	+	◇	◇	+	◇	+	0	+	+	+	+	◇	0	0	0	-	◇	0	0	0	0	0	0	0
h) Provide for a bus service throughout the plan area.	0	0	0	+	+	0	+	0	+	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	+	+	+	0	0	+	0	+	0	+	0	+	0	+	0	0	0	0	0	0	0	0	0	0	0	
I) To require workplaces and educational facilities to produce mobility & transport plans	0	0	0	0	0	0	+	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	+	+	+	0	0	0	0	+	0	+	0	+	0	+	0	0	0	0	0	0	0	0	0	0	0	

- Potential negative effect
- + Potential positive effect
- ◇ Uncertain effect
- o Potential neutral effect

Environmental Criteria assessed against open space objectives

	B1	B2	B3	PH1	PH2	PH3	PH4	PH5	PH6	PH7	PH8	PH9	PH10	PH11	PH12	S1	S2	W1	W2	W3	W4	W5	W6	A1	A2	A3	A4	A5	A6	MA1	MA2	MA3	MA4	MA5	MA6	MA7	MA8	MA9	MA10	MA11	CH1	CH2	CH3	CH4	L1	L2	L3	L4		
Open space objectives	+	+	+	+	+	+	0	0	+	+	0	0	+	0	0	+	0	+	+	+	0	0	+	+	+	0	+	0	0	+	0	+	+	+	0	0	0	0	+	0	+	+	+	+	+	+	+	0		
a) A linear green corridor is proposed along the entirety of the Crosswood Bog boundary.	+	+	+	+	+	+	0	0	+	+	0	0	+	0	0	+	0	+	+	+	0	0	+	+	+	0	+	0	0	+	0	+	+	+	0	0	0	0	+	0	+	+	+	+	+	+	+	0		
b) An open space buffer designated along the western corridor of the plan area.	+	+	+	+	+	+	0	0	+	+	0	0	+	0	0	+	0	+	+	+	0	0	+	+	+	0	+	0	0	+	0	+	+	+	0	0	0	0	+	0	+	+	+	+	+	+	+	0		
c) A linear open space corridor to the east of the N62, to consolidate and reinforce existing built heritage.	+	+	+	+	+	+	0	0	+	+	0	0	+	0	0	+	0	+	+	+	+	0	+	+	+	0	+	0	0	+	0	+	+	+	0	0	0	0	+	+	+	+	+	+	+	+	+	+		
d) Reserve portion of Character Area B subject to flooding for open space use.	+	+	+	+	+	0	0	0	+	+	0	0	+	0	0	+	0	+	+	+	0	0	+	+	+	0	+	0	0	+	0	+	0	+	0	0	0	0	+	+	+	+	+	+	+	+	+	+		
e) Provide a network of play areas in strategic locations overlooked by areas of housing and linked by pedestrian and cycle pathways.	0	0	0	+	+	+	+	+	+	+	0	0	+	0	0	+	0	+	+	0	0	0	+	+	+	0	+	0	0	+	0	+	0	0	0	0	+	0	+	0	0	+	0	+	0	0	0	0		
f) Maximise the use of green open spaces to facilitate sustainable drainage systems and enhance the potential for biodiversity.	+	+	+	0	+	0	0	0	+	+	0	0	+	0	0	+	0	+	+	+	0	0	+	+	+	0	0	0	0	0	+	0	0	+	0	0	0	0	+	0	0	0	0	0	0	0	0	0	+	
g) Seek to ensure that commercial enterprises plant and landscape their grounds in a manner that connects to the overall public realm.	+	0	+	0	0	0	0	0	+	+	0	0	+	0	0	+	0	+	+	0	0	0	+	+	+	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	+	0	0	
h) Seek the greening of existing streets and spaces, inc. new and improved street lighting, bicycle parking and street furniture.	+	0	+	+	+	+	0	+	+	0	0	+	0	0	0	+	0	+	+	+	0	0	+	+	+	+	+	0	0	0	0	0	+	+	+	+	0	+	0	0	0	0	0	0	0	0	0	+	0	0
i) Promote the provision of a recreation and sports uses within the plan area, suitable for use by the surrounding community.	0	0	+	+	+	+	0	0	+	+	0	0	+	0	0	+	0	+	+	+	0	0	+	+	+	0	+	-	0	+	0	+	+	+	0	0	0	0	+	0	0	+	0	+	0	0	+	0	0	
k) Development fronting the M6, N62 and the Loughandonning Spine Road shall be located within highly landscaped settings.	0	0	+	0	0	+	0	0	+	+	0	0	+	0	0	+	0	+	+	+	0	0	+	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	+	0	0	+	+	0	0	

- Potential negative effect
- + Potential positive effect
- ◇ Uncertain effect
- 0 Potential neutral effect

Environmental Criteria assessed against land use and development objectives

	B1	B2	B3	PH1	PH2	PH3	PH4	PH5	PH6	PH7	PH8	PH9	PH10	PH11	PH12	S1	S2	W1	W2	W3	W4	W5	W6	A1	A2	A3	A4	A5	A6	MA1	MA2	MA3	MA4	MA5	MA6	MA7	MA8	MA9	MA10	MA11	CH1	CH2	CH3	CH4	L1	L2	L3	L4		
Community/social infrastructure objectives																																																		
a) Protect the residential amenity of existing dwellings.	0	0	0	+	0	0	0	0	0	0	+	0	+	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
b) Provide for a range of educational, community uses and local shopping to serve the area.	0	0	0	+	0	◊	0	0	0	0	◊	0	+	+	+	0	0	◊	◊	◊	0	0	0	0	◊	◊	◊	◊	◊	+	◊	+	0	-	◊	◊	◊	0	0	0	0	+	0	0	0	0	0	0	0	0
c) Provide a neighbourhood centre to the north of the proposed Loughandonning Road.	0	0	0	+	0	◊	0	0	0	0	◊	0	+	+	+	0	0	◊	◊	◊	0	0	0	0	◊	◊	◊	◊	◊	+	◊	+	0	-	◊	◊	◊	0	0	0	0	+	0	0	0	0	0	0	0	0
d) Facilitate the provision of childcare facilities within new enterprise & employment areas to serve the needs of the workforce and local community.	0	0	0	+	0	0	0	0	0	0	0	0	+	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	◊	+	0	-	◊	◊	◊	0	0	0	0	0	0	0	0	0	0	0	0	0

- Potential negative effect
- + Potential positive effect
- ◇ Uncertain effect
- 0 Potential neutral effect

Appendix II - Supplementary archaeological and built heritage information

RMP Sites within the Creggan LAP

RMP No.:	WM029-025
Townland:	Garrycastle
Parish:	St. Mary's
Barony:	Brawny
Classification:	Castle
Dist. from LAP lands:	0m – within the boundary
Description:	In pasture, situated to S of a river just to the eastern outskirts of Athlone town. The ruin of a long stone building traced mainly as wall footing (dims. 9m NE-SW x 15m NW-SE). At S end the SW wall rises to between 4-5m ht. There is a substantial fireplace of brick incorporated into the upper parts of this wall and a ruined chimney flue. Some internal wall footings can be traced within the ruin. This appears to be the remains of a 16th or 17th century castle. There is no cut stone and nothing to suggest an earlier date.
Reference:	SMR file

RMP No.:	WM029-026
Townland:	Garrycastle
Parish:	St. Mary's
Barony:	Brawny
Classification:	Earthwork, site of
Dist. from LAP lands:	0m – within the boundary
Description:	In gently rising pasture. A survey of 1983 states that there was no trace of this site surviving above the ground level. On an 1820 estate map as 'enclosure (site of)'. Site now occupied by an IDA industrial estate.
Reference:	SMR file

RMP No.:	WM029-027
Townland:	Creggan Lower
Parish:	St. Mary's
Barony:	Brawny
Classification:	Earthwork
Dist. from LAP lands:	0m – within the boundary
Description:	Situated on a rise in pasture. On OS map as a circular enclosure. This site is leveled and likely a ringfort as a diameter of c. 38m was taken from a slight trace of the bank vaguely apparent.
Reference:	SMR file

RMP No.:	WM029-028
Townland:	Creggan Upper
Parish:	St. Mary's
Barony:	Brawny
Classification:	Castle
Dist. from LAP lands:	0m – within the boundary
Description:	In undulating ground with extensive views in all directions. On a steep knoll with ruins of a rectangular building occupying the top of it (dims. 10m E-W x 6m N-S). Wall footings and enclosures extend NE, S and SW from the ruin. On W and NW an 18th or 19th century walled garden exists. No pieces of cut stone are visible. A lot of collapse on the site, maximum wall ht. 1-1.5m.
Reference:	SMR file

RMP No.:	WM029-033
Townland:	Clonbonny
Parish:	St. Mary's
Barony:	Brawny
Classification:	Earthwork
Dist. from LAP lands:	0m – within the boundary
Description:	SMR file not available for consultation
Reference:	SMR file

RMP No.:	WM029-034
Townland:	Clonbonny
Parish:	St. Mary's
Barony:	Brawny
Classification:	Castle, possible site of
Dist. from LAP lands:	0m – within the boundary
Description:	SMR file not available for consultation
Reference:	SMR file

Stray finds within the surrounding area

Information on artefact finds from the study area in County Westmeath has been recorded by the National Museum of Ireland since the late 18th century. Location information relating to these finds is important in establishing prehistoric and historic activity in the study area.

Museum No:	1988:119
Find:	Late medieval horse harness, bronze strap distributor, presented as part of a collection.
Find Place:	Possibly the Kentex factory???
Parish:	St. Mary's
Barony:	Brawny
Description:	No additional information
Reference:	NMI topographical file

Museum No:	1995:1061
Find:	Miscellaneous military insignia
Find Place:	Near Athlone
Parish:	St. Mary's
Barony:	Brawny
Description:	No additional information
Reference:	NMI topographical file

Museum No:	1995:1714
Find:	Harp peg, found near bridge.
Find Place:	Near Athlone (possibly Garrycastle Bridge?)
Parish:	St. Mary's
Barony:	Brawny
Description:	No additional information
Reference:	NMI topographical file

Structures located within the Creggan LAP area

RPS No:	N/a
NIAH No.:	15402901
Townland:	Creggan Upper
Parish:	St. Mary's
Barony:	Brawny
NGR:	207591, 239657
Classification:	Pair of tower (miscellaneous structures)
Dist. from LAP lands:	0m – within the boundary

	<p>NIAH Description</p> <p>Two freestanding battlemented towers on square-plan, built c.1820, formerly part of the Creggan House estate (house demolished). Lime rendered walls with projecting ashlar limestone string courses and battlements to parapet. Square-headed and pointed-arch window openings, fittings now gone/blocked. Single tripartite window to one of the towers having cut limestone surrounds, mullions and transoms. Square-headed doorcases with remains of timber sheeted doors. Towers stand to either side of site of Creggan House. Set back from road in own grounds to the SE of Athlone Town. Rubble limestone boundary wall to the S.</p> <p>NIAH Appraisal</p> <p>An interesting pair of early 19th century towers, originally associated with Creggan House (demolished), which retain their early form and character despite being out of use. These towers are well-built and have good quality ashlar limestone detailing with the battlemented parapets and the cut limestone mullioned and the ransomed window particularly noteworthy features. These structures originally flanked Creggan House and may have functioned as follies. They have a subdued Gothic character on account to the pointed arched window openings. Creggan House, itself, was burnt down in 1921 and demolished prior to c.1930 and these towers now act as an historical reminder of the house. They are interesting and curious features in the landscape to the SW of Athlone and are worthy additions to the architectural heritage of the area</p>
Description:	
Categories of Special Interest:	Architectural, artistic, historical

Rating:	Regional
Reference:	NIAH survey 2004/05

RPS No:	N/a
NIAH No.:	15402902
Townland:	Creggan Upper
Parish:	St. Mary's
Barony:	Brawny
NGR:	207599, 239557
Classification:	Gates and entrance
Dist. from LAP lands:	0m – within the boundary

Appendix II - Supplementary archaeological and built heritage information

Description:	NIAH Description Two former main entrance gates serving Creggan House (now demolished), built c.1815, each comprising a pair of moulded ashlar limestone gate piers (on square-plan) having moulded capstones over. Metal gates to both entrance. Gateways flanked to either side by rubble limestone boundary walls having ashlar coping over. Located to the south of the site of Creggan House and to the SW of Athlone.
	NIAH Appraisal Two ornate gateways that previously served as the main entrances to Creggan House (demolished). The fine ashlar limestone gates piers are very well carved and have extensive Classical mouldings. The style of these gates could almost be early 18th century but they were probably erected during the early 19th century. They act as historical reminders of Creggan House, which was burnt down in 1921 and demolished before c.1930. They now stand as curious and interesting features along the main approach road into Athlone from the southeast, adding attractive incident to their roadside location. The well-built boundary walls complete the setting.
	Categories of Special Interest: Architectural, artistic
	Rating: Regional
	Reference: NIAH survey 2004/05

RPS No:	N/a
NIAH No.:	15402903
Townland:	Creggan Upper
Parish:	St. Mary's
Barony:	Brawny
NGR:	207623, 239639
Classification:	Former worker's cottages
Dist. from LAP lands:	0m – within the boundary

Description:	NIAH Description Group of four attached single-storey former worker's houses associated with Creggan House (now demolished), built c.1900, each having a single-bay gable-fronted glazed timber entrance porch, two to the centre and one to either gable end (E and W). Cantled bays to either end off main façade (S). Now out of use. Pitched natural slate roof with overhanging eaves, barge boards to gable ends, decorative terracotta ridge cresting with elaborate finials, cast-iron rainwater goods and four moulded red brick chimneystacks. Roughcast rendered walls over projecting plinth. Porches are constructed of red brick to base with rendered walls over having half-timbered detailing. Cantled bays constructed of brick. Square-headed window openings with timber casement windows with cross detailing to upper sections. Windows arranged in groups of four along main elevation (S) with hoodmouldings over. Similar glazing pattern to porches. Square-headed openings to porch having timber and glazed timber doors. Located to the south of the site of Creggan House and to the SE of Athlone. Rubble limestone wall to the rear (S) with freestanding tower to the W.
	NIAH Appraisal A highly picturesque group of former estate worker's houses previously associated with Creggan House (now demolished), which retain their early form, character and fabric. These structures are built in a style which is much more commonly encountered on English estates and have exuberant detailing throughout. The timber casement windows are noteworthy survivals while the remarkable terracotta finials to the gables ends, including one depicting a griffin, are of artistic interest. These appealing structures are noteworthy additions to the built heritage of Westmeath and form part of an interesting group of structures associated with the now demolished Creggan House along the

Categories of Special Interest:	Architectural, artistic, historical, social
Rating:	Regional
Reference:	NIAH survey 2004/05

RPS No:	N/a
NIAH No.:	15402906
Townland:	Clonbonny
Parish:	St. Mary's
Barony:	Brawny
NGR:	207476, 238194
Classification:	Railway Bridge
Dist. from LAP lands:	On SE boundary of LAP lands

Description:	<p>NIAH Description</p> <p>Single-arched railway bridge, built c.1859, carrying road over former Great Southern and Great Western Railway Company's Portarlinton to Athlone railway line. Still in active use. Constructed of snecked rusticated limestone with rock-faced limestone voussoirs to the arch, ashlar limestone string course at road level and ashlar limestone coping over parapet walls. Located to the SE of Athlone.</p> <p>NIAH Appraisal</p> <p>A robust and elegantly-appointed railway bridge representing an important element of the transport and civil engineering heritage of County Westmeath. This bridge was originally built by the Great Southern and Western Railway Company to serve the Portarlinton to Athlone line, which opened in 1859. This bridge is one of a number of similar bridges in the area associated with this company. This bridge is well-built using snecked rusticated limestone, a typical feature of mid 19th century engineering projects of this nature</p>
Categories of Special Interest:	Architectural, technical
Rating:	Regional
Reference:	NIAH survey 2004/05

Mitigation Measures and the Cultural Heritage Resource

Potential Mitigation Strategies for Cultural Heritage Remains

Mitigation is defined as features of the design or other measures of the proposed development that can be adopted to avoid, prevent, reduce or offset negative effects.

The best opportunities for avoiding damage to archaeological remains or intrusion on their setting and amenity arise when the site options for the development are being considered. Damage to the archaeological resource immediately adjacent to developments may be prevented by the selection of appropriate construction methods. Reducing adverse effects can be achieved by good design, for example by screening historic buildings or upstanding archaeological monuments or by burying archaeological sites undisturbed rather than destroying them. Offsetting adverse effects is probably best illustrated by the full investigation and recording of archaeological sites that cannot be preserved in situ.

Definition of Mitigation Strategies

Archaeological Resource

The ideal mitigation for all archaeological sites is preservation in situ. This is not always a practical solution, however. Therefore a series of recommendations are offered to provide ameliorative measures where avoidance and preservation in situ are not possible.

Geophysical survey is used to create ‘maps’ of subsurface archaeological features. Features are the non-portable part of the archaeological record, whether standing structures or traces of human activities left in the soil. Geophysical instruments can detect buried features when their electrical or magnetic properties contrast measurably with their surroundings. In some cases individual artefacts, especially metal, may be detected as well. Readings, which are taken in a systematic pattern become a dataset that can be rendered as image maps. Survey results can be used to guide excavation and to give archaeologists insight into the pattern of non-excavated parts of the site. Unlike other archaeological methods, the geophysical survey is not invasive or destructive.

Appendix II - Supplementary archaeological and built heritage information

Archaeological Test Trenching can be defined as ‘a limited programme... of intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site on land or underwater. If such archaeological remains are present test trenching defines their character and extent and relative quality.’ (IFA 2001c, 1)

Full Archaeological Excavation involves the scientific removal and recording of all archaeological features, deposits and objects to the level of geological strata or the base level of any given development. Full archaeological excavation is recommended where initial investigation has uncovered evidence of archaeologically significant material or structures and where avoidance of the site is not possible.

Archaeological Monitoring can be defined as a ‘formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons within a specified area or site on land or underwater, where there is possibility that archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive.’ (IFA 2001b, 1)

Underwater Archaeological Assessment consists of a programme of works carried out by a specialist underwater archaeologist, which can involve wade surveys, metal detection surveys and the excavation of test pits within the sea or riverbed. These assessments are able to access and assess the potential of an underwater environment to a much higher degree than terrestrial based assessments.

Architectural Resource

The architectural resource is generally subject to a greater degree of change than archaeological sites, as structures may survive for many years but their usage may change continually. This can be reflected in the fabric of the building, with the addition and removal of doors, windows and extensions. Due to their often more visible presence within the landscape than archaeological sites, the removal of such structures can sometimes leave a discernable ‘gap’ with the cultural identity of a population. However, a number of mitigation measures are available to ensure a record is made of any structure that is deemed to be of special interest, which may be removed or altered as part of a proposed development.

Conservation Assessment consists of a detailed study of the history of a building and can include the surveying of elevations to define the exact condition of the structure. These assessments are carried out by Conservation Architects and would commonly be carried out in association with proposed alterations or renovations on a Recorded Structure.

Building Survey may involve making an accurate record of elevations (internal and external), internal floor plans and external sections. This is carried out using a EDM (Electronic Distance Measurer) and GPS technology to create scaled drawings that provide a full record of the appearance of a building at the time of the survey.

Historic Building Assessment is generally specific to one building, which may have historic significance, but is not a Protected Structure or listed within the NIAH. A full historical background for the structure is researched and the site is visited to assess the standing remains and make a record of any architectural features of special interest. These assessments can also be carried out in conjunction with a building survey.

Written and Photographic record provides a basic record of features such as stone walls, which may have a small amount of cultural heritage importance and are recorded for prosperity. Dimensions of the feature are recorded with a written description and photographs as well as some cartographic reference, which may help to date a feature.

