

Chapter 11

Landscape & Visual Analysis

11.1 Introduction

This chapter of the EIAR provides an assessment of the likely significant landscape and visual impacts arising from the proposed circa 33.4km N5 Ballaghaderreen to Scramoge Road Project. The assessment was carried out between 2014 and 2016.

The N5 Ballaghaderreen to Scramoge Road Project forms part of the N5 National primary route which extends from Westport to Longford town. This existing section of N5 passes through the settlements / towns of Frenchpark, Bellanagare, Tulsk and Strokestown. Most notably, the existing route also passes through the significant cultural landscape and Candidate UNESCO World Heritage Site of the Rathcroghan Archaeological Complex between Bellanagare and Tulsk.

The proposed road development, which is c.33.4km in length, is located within County Roscommon. As a Type 1 carriageway the proposed road project will be similar in design and nature to the existing N5 Ballaghaderreen Bypass which lies to the immediate west of the proposed road and to the Scramoge to Cloonmore Scheme to the east of the proposed road. A more detailed description of the proposed development is provided in Chapter 4.

11.2 Methodology

11.2.1 Introduction

The methodology has regard to Section 50 sub-section 2 and 3 of the Roads Act 1993 as amended, and the following guidance publications:

- EPA: Guidelines on the Information to be contained in Environmental Impact Statements, 2002.
- EPA: Advice Notes on Current Practice (in the preparation of Environmental Impact Statements) 2003.
- LI/IEMA: Guidelines for Landscape and Visual Impact Assessment, 2013, 3rd Edition;
- TII/NRA: Environmental Impact Assessment of National Road Schemes - A Practical Guide.
- TII/NRA: A Guide to Landscape Treatments for National Road Schemes in Ireland, 2006.
- TII/NRA: Guidelines for Protection and Preservation of Trees, Hedgerows and Scrub Prior to, during and Post Construction of National Road Schemes.
- TII: TII Publications.

The following Draft Guidance documents have also been consulted:

- EPA: Guidelines on the Information to be contained in Environmental Impact Assessment Reports, Draft May 2017.
- EPA: Advice Notes on Current Practice (in the preparation of Environmental Impact Statements) Draft 2015.

The findings and recommendations of other chapters of this EIAR have also been considered in the preparation of this assessment. Particular liaison and consultation has taken place with the relevant EIAR consultants in terms of the design for the

proposed road development and with particular respect to aspects such as Archaeology and Cultural Heritage, Architectural Heritage, Biodiversity and Noise and Vibration.

11.2.2 Landscape

Landscape has two separate but closely related aspects. The first is visual impact, *i.e.* the extent to which a new structure in the landscape can be seen. The second is landscape character impact, *i.e.* effects on the fabric or structure of the landscape. Landscape character is derived from the appearance of the land, and takes account of natural and man-made features such as topography, landform, vegetation, land use and built environment and their interaction to create specific patterns that are distinctive to particular localities.

The landscape along the route has been sub-divided, for the purposes of the assessment, into units of differing character using site-based assessments and judgments, together with information gleaned from relevant publications. The landscape impact assessment which follows in Section 11.4 Predicted Impacts describes the likely nature and scale of changes to individual landscape elements and characteristics, together with the significance of such affects.

Landscape planning designations, including National and County designations or listings are considered and assessed for impacts, where appropriate. Cultural landscapes, including the Rathcroghan Archaeological Complex, and historic demesne landscapes as included in the National Inventory of Architectural Heritage (NIAH) are also considered, as are other informal demesnes identified during site visits and in consultation with the Architectural Heritage consultant. All such landscapes and properties are assessed for direct landscape impacts.

Visual impacts from these properties are assessed within the Visual Impact Schedule (VIS), see Tables 11.1A to 11.1D; Table 11.2 and Table 11.3 of Appendix 11.3. Impact on the historical setting of such properties, if any, is considered in further detail in Chapter 15 – Architectural Heritage. The impact on the setting of archaeological and cultural heritage features, including the Rathcroghan Complex, is addressed further in Chapter 14 - Archaeology and Cultural Heritage.

11.2.3 Visual Impact

Visual impacts are categorised under 'Visual Intrusion' and 'Visual Obstruction' where:

- Visual Intrusion is an impact on a view without blocking;
- Visual Obstruction is an impact on a view involving blocking.

In reporting on visual impact, three basic assessments are considered:

Construction Stage: considers the period including the active construction of the road up to completion of the works and opening of the proposed road development;

Pre-establishment Stage: considers the period including the initial operation of the proposed road development where new landscaping is unlikely to provide effective mitigation. The impact is assessed in the year the proposed road development would open to traffic;

Post-establishment Stage: considers the impact as assessed fifteen years after opening. The development of planting to provide

effective landscape and visual mitigation usually requires a minimum period of five to seven years after planting.

The majority of receptors within this study area involve residential properties. In this report the term 'receptors' refers to residential properties but will also include other properties and viewers within the general environment. The visual assessments are tabulated in the VIS Tables 11.1A to 11.1D and Table 11.2 in Appendix 11.3 and illustrated on the Landscape and Visual Drawings (Refer to Figures 11.1 – 11.25 in Volume 3 of the EIAR). The properties are numbered using sequential chainage references in geographical order from the western end of the route to the eastern end and are cross-referenced to the VIS tables contained in Appendix 11.3.

All properties within 200m of the centre-line of the proposed road development are listed, together with any property outside of 200m, which for reasons of relative openness or otherwise are considered to have potential for impact. In general properties outside 200m of the centre-line that have no potential for impact have not been included in the assessment. While these properties may have sight of the development, due to a combination of distance, aspect, elevation or intervening topography, the development comprises a small element of the overall panorama and will not give rise to any degree of adverse impact.

The extent to which significant additional illumination will be visible in the night landscape is also taken into account. The introduction of lighting may affect individual views and also the character of the landscape.

11.2.4 Significance Assessment Criteria

The significance criteria as set out in the EPA Guidelines have been used for the purpose of this assessment, see Table 11.1 Landscape and Visual Impact Assessment Criteria. The significance of landscapes is considered against their designation (i.e. national, county, local, etc.). Where not designated or otherwise protected, landscapes are considered as being of local significance. Views from properties are all considered on an equal basis without varying degrees of significance.

Table 11.1 Significance of Landscape and Visual Impacts

Significance Level	Criteria
Imperceptible	An impact capable of measurement but without noticeable consequences.
Slight	An impact which causes noticeable changes in the character of the environment without affecting its sensitivities
Moderate	An impact that alters the character of the environment in a manner that is consistent with existing and emerging trends.
Significant	An impact which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Profound	An impact which obliterates sensitive characteristics

Effects can be considered to be negative, neutral or positive in effect. Impacts are considered where they may be direct, indirect and/or cumulative as appropriate.

Duration of effects is considered as being Temporary (for up to one year), Short-term (from 1 to 7 years), Medium-term (7 to 15 years), Long-term (from 15 to 60 years) or Permanent (over 60 years).

11.3 Existing Environment

11.3.1 Landscape Context and Character

The proposed road development is set within a gently rolling to undulating, relatively low-lying and visually open landscape of low ridges and broad valleys drained by small rivers and streams. The landscape includes a broad mix of agricultural grassland uses and marginalised grassland, interspersed with areas of peatland, coniferous plantations, scrub and semi-natural vegetation. Broadleaved woodland and mature deciduous trees are dispersed and most noticeable where they remain as part of old demesnes. Areas of coniferous plantation are prominent to the south of Frenchpark and through the central section of the route corridor.

The wider landscape is broadly similar – especially to the west and south. To the north and northeast the landscape is increasingly undulating and takes on the typical ridge and lake characteristics of a drumlin landscape. Slieve Bawn, rising to 240m above ordnance datum (OD) to the southeast of Strokestown, is the only noticeable upland in the vicinity of the proposed road.

In general the route lies below the 100m OD contour. The western end of the route skirts along the lower slopes of an area of rising ground at Mullaghnashee to the west and south of Frenchpark and Bellanagare. The highest point of this ridge is c.160m OD at Fairymount, some 5km southwest of Frenchpark. Through the central section the route passes a low lying valley to the north of the elevated plateau of Rathcroghan, which rises to over 140m OD, and to the south of a prominent ridge northwest of Elphin, which rises to over 120m OD. At its eastern end, the route crosses a pronounced locally undulating landscape, known as the '*Mid Roscommon Ribbed Moraine Landscape*' and crosses the 100m contour on the side of local ridges between Cregga and Corskeagh to the north of Strokestown.

Apart from the main settlements of Frenchpark, Bellanagare, Tulsk and Strokestown, residential development is also commonly clustered and dispersed along local roads throughout the route corridor. Such residential development tends to be more prominent in areas of better farmland, e.g. along and south of the existing N5 at the western end of the project (Ch. 1+000 to Ch. 3+600); between Cashel and Ballaghacullia (Ch. 12+750 to Ch. 14+000); at Mullenduff / Corry East (Ch. 17+600); between Mantua and Creeve (Ch. 19+500 to Ch. 22+400) and from Killeen East (Ch. 32+500) though to the end of the alignment (Ch. 53+900).

11.3.2 Roscommon County Development Plan 2014-2020

The County Development Plan (the Plan) sets the context for consideration of the existing landscape and visual environment as well as for development itself. At the outset the Plan (Section 2.5) recognises that the county has a '*rich, varied and diverse landscape*' and the need to be aware of '*the significance of maintaining the integrity of sensitive areas*'. The Plan also notes the ongoing challenge of balancing landscape impact with economic growth and development and states that the Council '*will help undertake this challenge by encouraging such development where appropriate but only in a sustainable way.*'

The Plan, under Key Environmental Challenges (pages 33, 34), notes that:

Landscape: The landscape is seen as a key asset and both the urban and rural landscape are potentially under threat due to development pressure, development form and layout and demand for development land.

...and a core policy is set out as:

Core Policy 2.10	To identify and protect the unique and diverse natural heritage of County Roscommon in terms of landscape, natural resources such as rivers and lakes and waterways along with the built environment of historical, architectural and cultural value.
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11.3.2.1 Tourism

Section 3.5 of the Plan recognises the importance of tourism to the county and the contribution that aspects such as the largely unspoilt landscape and the Rathcroghan Archaeological Complex, amongst others, makes to tourism, noting that:

'The central focus of the Cruachan Aí Heritage Centre, opened in 1999, is the Cruachan site including the Rathcroghan Mound, one of the best preserved Celtic Royal Sites in Europe close to the medieval village of Tulsk. The centre was developed to highlight, interpret and celebrate the rich archaeological heritage of the area and to act as a focus for community activities.'

As part of the vision for tourism the Plan notes both the need to:

- 'Maximise and build upon the high quality transportation linkages and permeability of the County within the West Region' and
- 'Position the County as a leading heritage destination'

The N5 Ballaghaderreen to Scramoge Road Project, which is the subject of the assessment, is included in Table 4.1 Planned Motorway and National Primary Road Projects of the Development Plan.

11.3.2.2 Rathcroghan Archaeological Complex

Section 6.8 of the Plan recognises the major national significance of the complex of archaeological monuments and the Rathcroghan area in general. The Plan notes the inclusion of the site on the Tentative List for future inscription as a UNESCO World Heritage Site. Refer to Chapter 14 for assessment of pontifical impacts on the Rathcroghan Complex.

The Plan sets out various policies and objectives for the protection of the landscape and its monuments as well as for sustainable development in the area. The policies and objectives include:

Policy 6.12	Support the implementation of the Rathcroghan Archaeological Complex Conservation Study, as prepared for the Department of Environment, Heritage & Local Government.
Policy 6.14	Protect and conserve the vulnerable archaeological and cultural landscape and to conserve and enhance views from and between the 12 key archaeological monuments and 4 key view points as identified in the Rathcroghan Archaeological Complex Conservation Study.

Objective 6.31	Carry out a capacity study for the Rathcroghan Complex Study area to assess the capacity of the landscape to accommodate future development. This is necessary because the greatest concern in relation to rural housing is its cumulative impact on the landscape as well as the national and international significance of the Rathcroghan Complex landscape which is based on its landscape and intervisibility between the key monuments.
Policy 6.15 UNESCO World Heritage Sites	To recognise and respect potential World Heritage Sites in Roscommon on the UNESCO Tentative List – Ireland – 2010 and support their nomination to World Heritage status.

11.3.2.3 Natural Heritage and Landscape Character Assessment

Chapter 7 of the Plan sets out the policies and objectives pertaining to Natural Heritage and Landscape Character Assessment and Section 7.1 of the Plan deals with Designated Sites. Aspects of natural heritage and designated sites are addressed in detail in Chapter 7, Biodiversity of this EIAR.

Section 7.2 of the Plan refers to Sites of Geological Importance in the county and to the *Geological Heritage of County Roscommon: An Audit of County Geological Sites in Roscommon* (2012). The Plan at Table 7.1 County Geological Sites includes a reference to the 'Mid Roscommon Ribbed Moraines' (*a ribbed moraine field with superimposed drumlins*). The geological feature is described as approx. 100 ribbed moraine features within an area of 10 by 20km to the northwest of Slieve Bawn, refer to Plate 11.1. A full description of these geological features is included at Appendix 11.2 of the EIAR. The existing N5 passes through this landscape, as does the eastern portion of the proposed N5, in the area between Elphin and Scramoge.

Table 7.1 of the Plan also references Pollnagran (*an active stream cave*) (close to Ch.11+700) and Largan Quarry (*a limestone quarry*) (at Ch.37+100) as features of geological interest in the vicinity of the route. The locations of these features are also indicated on Plate 11.1. The former is a distinctive local feature, which points to the karstic nature of the underlying limestone within c.475m of the proposed road, southeast of Frenchpark. While not listed in Table 7.1 of the Plan, similar karstic features are known to be a feature of the area south of Mantua (e.g. Polloweneen at Ch.18+500).

It is the objective of the Roscommon County Development Plan 2014-2020 to 'preserve and protect sites of county geological importance from inappropriate development where they comprise designated sites or national heritage areas' and to refer planning applications within such sites to the Geological survey of Ireland. Pollnagran is located close to Bellanagare Bog SAC and Bellanagare Bog pNHA, otherwise where the proposed road development is within or close to the features of county geological importance, it is not within designated sites or national heritage areas.

In relation to geological sites, it is also the stated policy of the Council to:

Policy 7.6	Raise awareness of the importance of geological heritage and disseminate information on sites of geological importance in County Roscommon.
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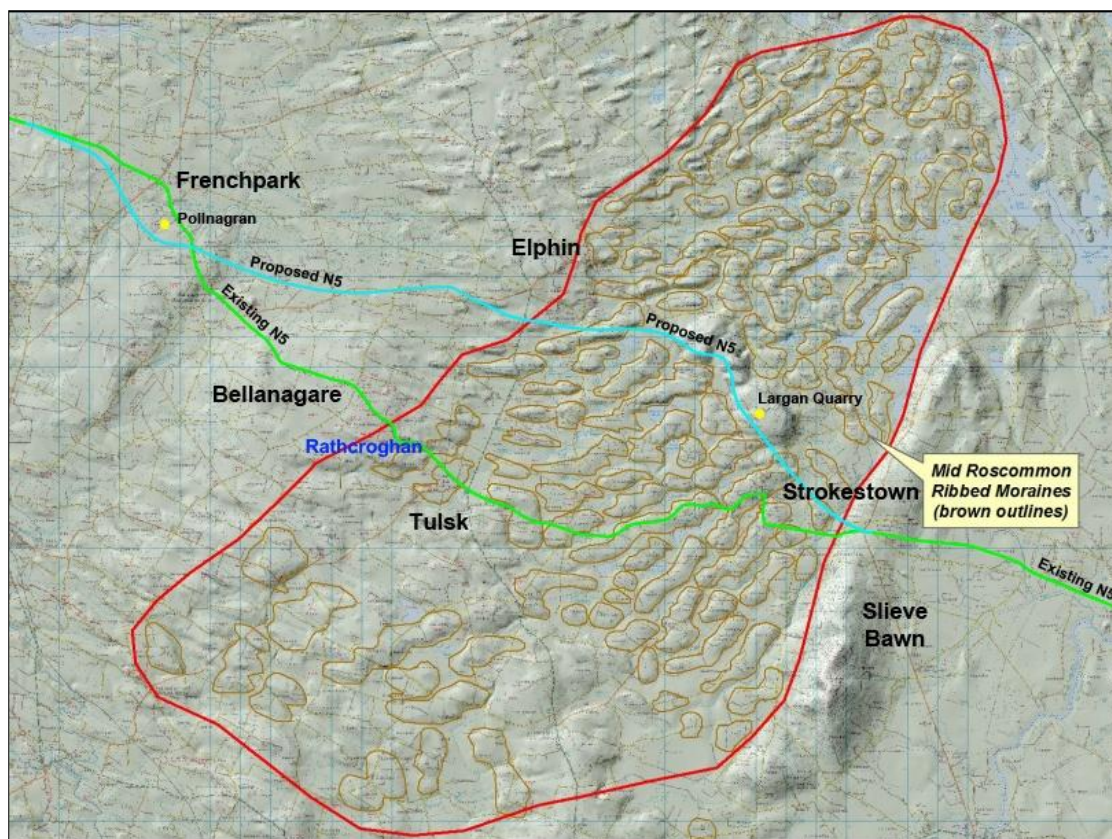


Plate 11.1: Mid Roscommon Ribbed Moraines (Annotated Extract County Geological Site Report)

Section 7.3 of the Plan notes the importance of hedgerows, trees and woodlands, eskers, peatlands, turloughs, wetlands, watercourses and fens, heritage parks and gardens, in the natural landscape.

There are no Tree Preservation Orders (TPOs) pertaining to trees or woodlands within the corridor of the proposed road development. Indeed the landscape along the route corridor is generally open with limited deciduous woodland and mature deciduous trees – most notably associated with old demesnes (i.e. Frenchpark House, Mantua House and Strokestown Park House) and along the fringes of peatlands. A review of historic landscapes and demesnes is set out at Section 11.3.5 of this chapter.

Prominent tree-lines and broadleaved or semi-natural woodland is a feature along the proposed road at the following locations:

- Tree-lined and strong hedgerow field boundaries between Ch. 1+500 and Ch.3+500.
- Semi-natural scrub woodland on bogland fringes between Ch.14+000 and Ch.15+400.
- R369 roadside boundary with Mantua House Demesne and field boundaries east thereof (Ch. 18+000 to Ch. 20+400)
- Tree-lined strong hedgerow field boundaries at Cloonacullaan Lough between Ch.32+500 and Ch. 34+000.
- Tree-lined and strong hedgerow field boundaries at Cregga Ch. 35+500 and Ch.36+300.

- Semi-natural woodland between Ch. 52+250 and Ch. 52+750.
- Semi-natural woodland between Ch. 53+400 and Ch. 53+600.

Peatlands or bogs, be they undisturbed, reclaimed, cutover or active, are a distinctive feature along many sections of the western end of the proposed road corridor, particularly from Ch. 10+650 to Ch. 12+500 and from Ch. 14+000 to Ch. 15+550. Often extant peatland areas are fringed by areas of attractive semi-natural birch scrub woodland, while elsewhere the peatlands are under plantations. Such coniferous plantations are a feature of the route corridor including between:

- Turlaghnamaddy and Dungar (Ch. 4+250 and Ch. 5+300)
- Leggatinty (Ch. 10+150 to Ch. 11+900)
- Peak (Ch. 15+550 to Ch. 15+700)
- Mullenduff and Corry West (Ch. 16+700 to Ch. 18+100)
- Cartronagor and Creeve (Ch. 21+000 to Ch. 22+900)

While stone walls are a feature of areas in the vicinity of the proposed road development, e.g. Frenchpark, Rathcroghan, Tulsk, Strokestown etc. they are a very limited and not significant feature of the actual route of the proposed N5 road.

Objectives in the Development Plan in relation to nature conservation in the wider countryside include:

Objective 7.5	Protect and promote the conservation of biodiversity outside of designated areas, while allowing for appropriate development, access and recreational activity.
Objective 7.8	Identify, protect and conserve, in co-operation with the relevant statutory authorities and other groups, vulnerable, rare and threatened species or wild flora and fauna and their habitats. These include plant and animal species afforded protection under the Wildlife Acts and the EU Habitats & Birds Directives.
Objective 7.15	Ensure that any development, which impacts on a townland boundary, roadside hedgerows or hedgerows which form links with other habitats and form wildlife corridors; should first seek to retain, translocate or replace with native species of local provenance, these hedges. The overall goal should be to have no net loss of the hedgerow resource.
Objective 7.18	Commit to using native species where ever possible in its landscaping work and on Roscommon County Council property.
Objective 7.27	Encourage sensitive development, which does not lead to a loss of, or cause damage to, the character, the principal components of, or the setting of parks, gardens and demesnes of special historic interest and which are protected.

11.3.2.4 Landscape Character Assessment

Section 7.6 of the Plan addresses landscape character assessment and notes that a landscape character assessment was carried out for the county in 2008. The landscape character assessment identified 36 separate character areas and assigned values to each as either 'Exceptional Value', 'Very High Value', 'High Value' or 'Moderate Value'.

Table 11.2 sets out the various landscape character areas, types, values that apply to both the Existing N5 and the Proposed N5 routes (refer to Plates 11.3 & 11.4 also). The most notable changes in terms of landscape character revolve around that fact that while the existing N5 passes through the landscape character area of

'Tulsk and Rathcroghan Plateau', the proposed N5 route entirely avoids this landscape, which is of exceptional value.

By contrast when compared to the existing N5, the proposed N5 route moves into the more pronounced drumlin landscape of the northern portion of the Strokestown Drumlin and Turlough Belt (on the boundary with the Kilglass Drummin Lakelands).

Table 11.2: Existing & Proposed N5 with Corresponding Landscape Character Areas

Road	Landscape Character Areas	Landscape Character Type & Value	Value Features
Existing N5	21 Mullaghnashee West Farmland Plateau	Wet Farmland Moderate	Elevated views from the summit of Mullaghnashee and the cultural heritage interest in the Douglas Hyde burial place and the adjacent Frenchpark Demesne with its walled estate grounds, parkland landscape and folly
	27 Castlerea Raised Bogland	Bogland High	Sense of remoteness and tranquillity and the contrast provided with its broad surrounds
	28 Tulsk and Rathcroghan Plateau	Dry Farmland Exceptional	Landscape is one of just two exceptional landscapes in the county. Rich archaeological heritage is of national significance
	29 Strokestown Drumlin and Turlough Belt	Drumlin Lakelands Moderate	Planned settlement of Strokestown with its associated demesne developed in the 18 th century. Area is characterised by the amount of lakes and turloughs which are visually significant
	31 Scramoge River Basin	Drumlin Lakelands Moderate	Ecological and habitat value
Proposed N5	21 Mullaghnashee West Farmland Plateau	Wet Farmland Moderate	Elevated views from the summit of Mullaghnashee and the cultural heritage interest in the Douglas Hyde burial place and the adjacent Frenchpark Demesne with its walled estate grounds, parkland landscape and folly
	27 Castlerea Raised Bogland	Bogland High	Sense of remoteness and tranquillity and the contrast provided with its broad surrounds
	20 Breedoge Bogland Basin	Bogland Moderate	Vast area of bogland in the centre of the LCA, which has intrinsic ecological qualities and is remote
	29 Strokestown Drumlin and Turlough Belt	Drumlin Lakelands Moderate	Planned settlement of Strokestown with its associated demesne developed in the 18 th century. Area is characterised by the amount of lakes and turloughs which are visually significant
	31 Scramoge River Basin	Drumlin Lakelands Moderate	Ecological and habitat value

The Landscape Character Assessment for County Roscommon describes each character area in detail. The descriptions for the relevant areas in Table 11.2 and on Plates 11.3 and 11.4 are included in Appendix 11.1 of the EIAR.

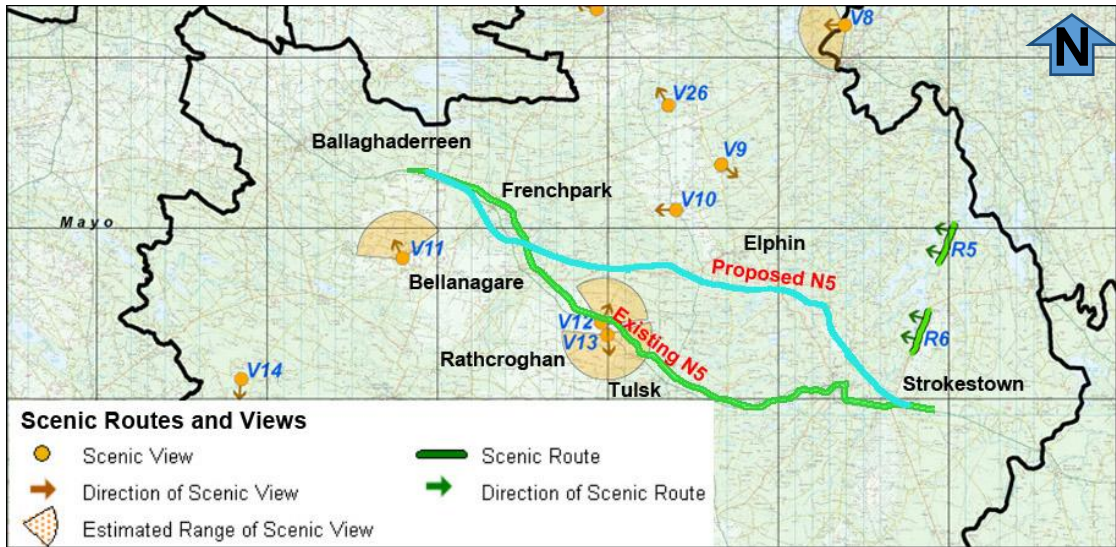


Plate 11.2: Scenic Routes and Views (Annotated Extracts from Landscape Character Assessment for County Roscommon)

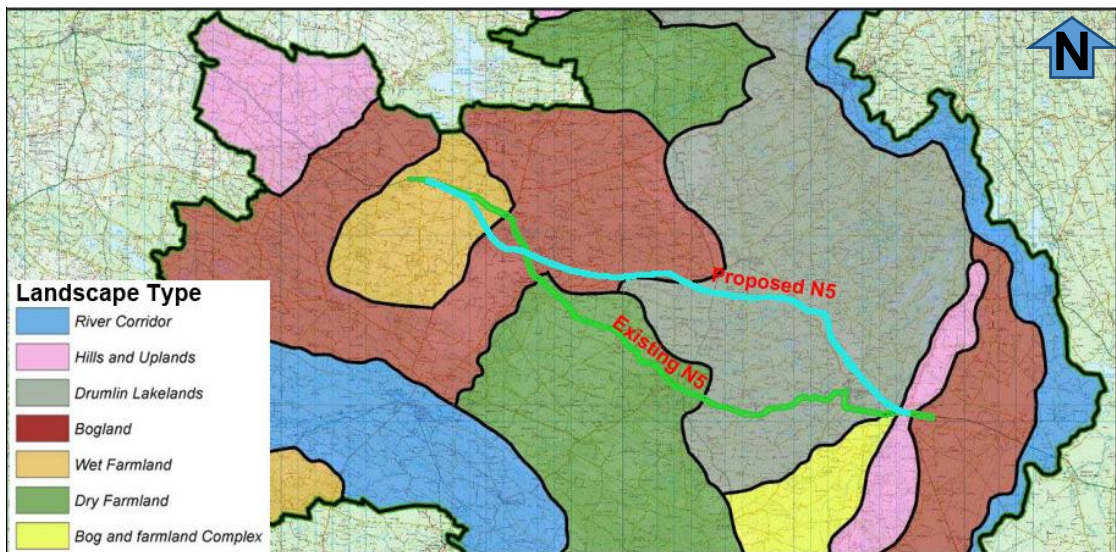


Plate 11.3: Landscape Character Types (Annotated Extracts from Landscape Character Assessment for County Roscommon)

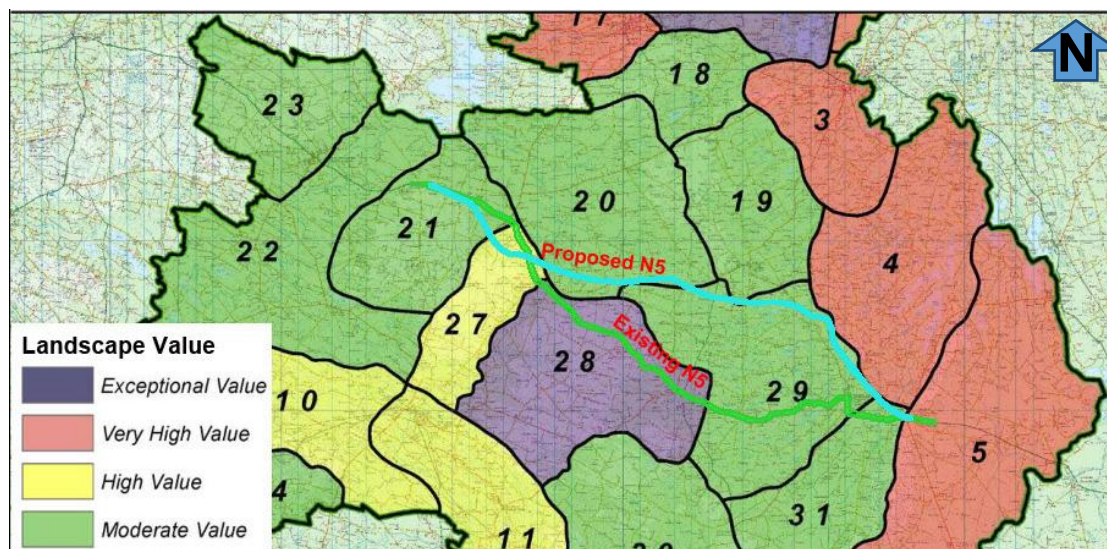


Plate 11.4: Landscape Values (Annotated Extracts from Landscape Character Assessment for County Roscommon)

The landscape character assessment also identifies scenic routes and views (refer to Plate 11.2 and Table 11.3). The existing N5 falls within the scenic range of scenic views V12 and V13 from Rathcroghan (refer also to Plate 11.5).

While the proposed road development does not fall within the scenic range of these views, Scenic View V11 (Mullaghnahee) and Scenic View V12 (Rathcroghan) are relevant to the wider landscape corridor of the proposed road development.

Table 11.3: Scenic Views (Extract from Landscape Character Assessment)

View Ref. No. & Location	Character Area & Type	Feature of Interest	Forces of Change
V.11 Fairymount Hill	Mullaghnahee Plateau Wet Farmland	Elevated panoramic view from reservoir of surrounding farmland landscape. Long distant views to the north and northwest.	
V.12 Rathcroghan Cross Roads	Tulsk and Rathcroghan Plateau Dry Farmland	View from Rathmore archaeological site. A prominent raised rath (ringfort) or chieftain's residence dating from the Early Medieval Period. The site, its views and surrounding landscape context are highly sensitive.	Poorly sited and poorly screened rural enterprise development. Built development encroaching from the Tulsk direction.
V.13 Rathcroghan Cross Roads	Tulsk and Rathcroghan Plateau Dry Farmland	Elevated panoramic view from the inauguration site for Kings of Connaught, the main Rathcroghan archaeological site. The site, its views and surrounding landscape context are highly sensitive.	Poorly sited and poorly screened rural enterprise development. Built development encroaching from the Tulsk direction.

11.3.3 Rathcroghan Archaeological Complex

In addition to policies and objectives as set out in the County Development Plan (as noted at Section 11.3.2 above) the Department of the Environment, Heritage and Local Government also commissioned a detailed Archaeological Complex Conservation Study for Rathcroghan in 2007. The Rathcroghan study area, which is bisected by the existing N5, covered c.725 hectares containing 114 Recorded Monuments of which 39 are in the care of the State. The study notes that as '*a well-preserved, multi-period and ritual landscape, Rathcroghan is of exceptional significance both nationally and internationally.*'

The Study describes the Rathcroghan landscape setting as follows:

"The importance of Rathcroghan was largely a consequence of its geographical location within Connacht. It overlooks the valley of the River Shannon, ensuring good water supply and accessible communication routes. In addition, it is situated on a relatively low-lying area of limestone capped with boulder clay, which has good potential as farmland. Today, it is classed as manured lowland grassland of moderate quality, a land-use conducive to the conservation of archaeological earthworks. Lowland peat bogs are situated to the west and south of the Rathcroghan plateau. To the north and north-east the land is more mountainous, while to the west are the exposed uplands of the Atlantic coast. The Rathcroghan area, therefore, provides a good settlement area within eastern Connacht.

Rathcroghan lies within Mag nAí, the pastures ruled by the Kings of Connacht, which also contains another monument complex at Carnfree, c 4 km to the south-east of Rathcroghan. The Rathcroghan study area falls into two zones, a plateau above 120 m OD and a surrounding band of lower lying ground to the east and south. Both areas are now mostly divided into fields by stone walls and a few hedges and are used as pasture. The ecological significance of the land is low. The existing N5 trunk road bisects the area, but proposals to divert this section of road are under consultation."

The study notes key actions for the protection, conservation & monitoring, research & education, enhancement & improvement and for the ownership, access & interpretation of the complex. Amongst these actions is a recommendation to '*establish the data with which to assess and protect significant views and vistas within the planning system*'.

While scenic views are included within the current County Development Plan and Landscape Character Assessment (as noted under Section 11.3.2.4 and on Plates 11.2 & 11.5) a separate on site assessment of key views in relation to the proposed road development was carried out involving representatives of the Department of Archaeology of National University of Galway (NUIG); the project archaeologist; the archaeology and cultural heritage specialist; members of the design team; and the landscape specialist. This on site assessment also allowed for selection of locations from which photomontages of the proposed road development would be generated. The locations, which were also selected in consultation with the National Monuments Service (Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs) and the Archaeology Department in NUIG, were chosen on the basis that, however unlikely, they were the most likely locations to allow for viewing of the proposed road development and/or associated traffic.

As previously noted the existing N5 bisects the Rathcroghan Complex and traffic on the national primary road detracts visually from the experience of appreciating and

interpreting the significance of the monuments and the wider landscape setting. The narrow winding nature of the existing N5, coupled with the speed and volume of traffic, creates 'a significant severance effect due to the frequency, type and speed of traffic'.

Under landscape, the report notes that the study area falls into 2 distinct zones: namely the Rathcroghan Plateau (defined by the 120-130m OD contour), and the Rathcroghan Plateau Edge (sloping land below the 120m OD contour). These are considered important in providing some boundaries for the area.

While the Rathcroghan Plateau is not particularly prominent from the wider lowland landscape, by contrast, views from the plateau are dramatic, panoramic and long-ranging to the north, east and south. Uninterrupted views north and east towards the corridor of the proposed N5 are over a sloping plateau edge landscape; lowlands and drumlin landscapes; to distant mountains (i.e. Ox, Keshcorran, Curlews etc.) and the River Shannon basin. The immediate landscape is typical of the local matrix of open farmland, coniferous plantations, peatlands, occasional woodland blocks (associated with demesnes such as Mantua House), tree-lines and hedgerows along roads and in field boundaries generally. Traffic on local roads, and most notably along sections of the R369 Bellanagare to Elphin and R368 Elphin to Carrick-on-Shannon Regional Roads, is a moving feature within the lowland landscape.

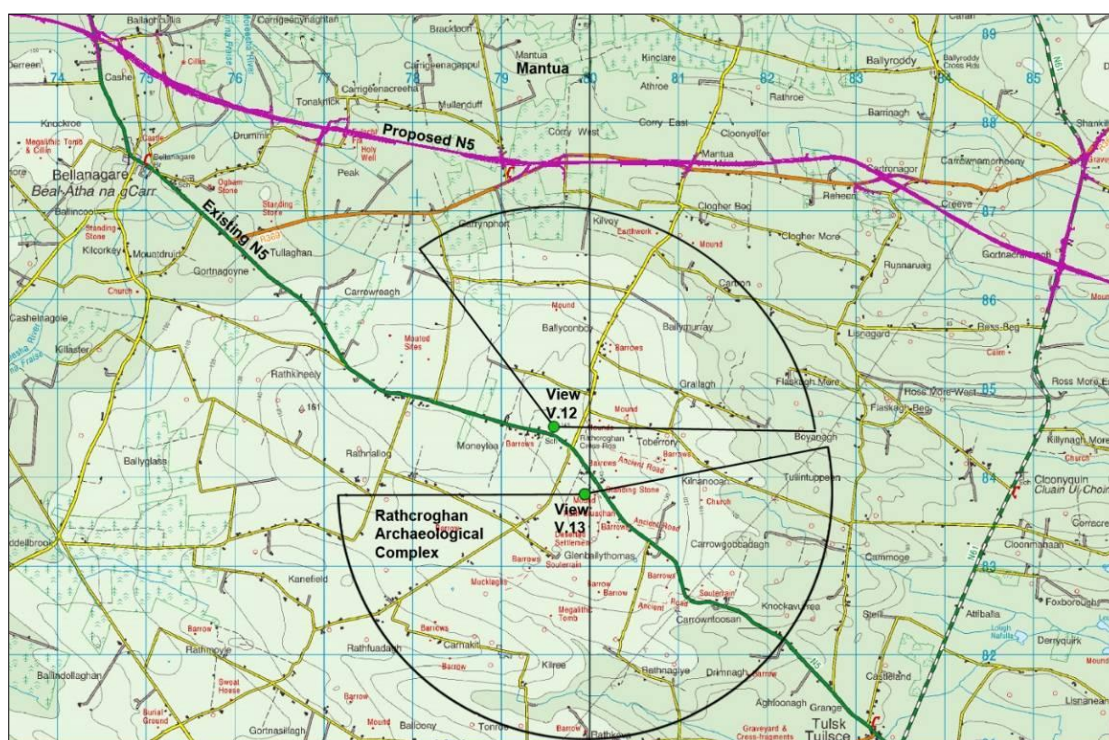


Plate 11.5: Rathcroghan Archaeological Complex with Scenic Viewpoints

11.3.4 Local Landscape Character

Landscape character on a county and route-wide basis is discussed in detail under Section 11.3.2.4 above. However, it is also clear from the assessment carried out for this chapter that there are also a number of areas of distinctive local landscape character (LLCAs) along the proposed Road. These are outlined in Table 11.4 below and illustrated on Figures 11.1 to 11.25.

Table 11.4: Local Landscape Character Areas (LLCAs)

Local Landscape Character Area (LLCA)	County Landscape Character Area	Landscape Features
LLCA 1: Rathkeery / Portaghard (Ch.1+500 to Ch.3+500)	21. Mullaghnashee Wet Farmland Plateau	Despite the proximity to the existing N5 the tree-lined well-managed pasture fields on the lower side slopes of the northern end of the Mullaghnashee Plateau present a visually distinctive local character.
LLCA 2: Cashel / Ballaghcullia / Drummin (Ch.12+800 to Ch.14+700)	Interface between: 27. Castlerea Raised Bogland and 20. Breedoge Bog Basin	Visually open local ridge with view south and east over attractive semi-natural scrub woodland / bogland in valley.
LLCA 3: Mantua (Ch.18+000 to Ch.19+750)	Southern end of: 20. Breedoge Bog Basin	Demesne boundary with mature trees (many in poor condition), woodland belts, mature tree-lined road (R369)
LLCA 4: Killeen West (Ch.30+500 to Ch.31+900)	Northern end of: 29. Strokestown Drumlin and Turlough Belt	Open remote landscape valley with areas of wetland along river corridor
LLCA 5: Killeen East (Ch.33+000 to Ch.34+100)	29. Strokestown Drumlin and Turlough Belt	Drumlin landscape with mature tree-lines, wetland and lake feature at Clooncullaan Lough
LLCA 6: Killeen East to Kildallogge (Ch.35+500 to Ch.40+500)	29. Strokestown Drumlin and Turlough Belt	Pronounced open rolling drumlin landscape with turlough and high quality views to and from ridges.
LLCA 7: Cloonradoon / Bumlin (Ch.52+000 to Ch.53+100)	31. Scramoge River Basin	Gently rolling landscape with semi-natural woodland leading to river crossing.

11.3.5 Historic Gardens and Designed Landscapes

The National Inventory of Architectural Heritage (NIAH) records properties under its listings for Historic Gardens and Designed Landscapes. The properties listed are given a historic feature richness index (FRI) rating ranging between 1 to 16 depending on the quality of the extant features and the state of their preservation.

Where virtually no recognisable features remain, properties are considered as having '0' FRI. Properties with a low rating (i.e. FRI of less than 5) will have experienced significant loss and/or alteration of their original layout. Nevertheless, even where a lower rating has been recorded, individual features may have a landscape significance, e.g. peripheral mature woodland, avenues, parkland trees etc. Where the FRI rating is 5 or above, landscape elements retained on the ground continue to show the original landscape design intent and structure.

This landscape and visual chapter includes an assessment of the NIAH listings located along or close to the proposed road development. The properties listed in Table 11.5 lie within relatively close proximity of the proposed road development. However, not all of these historic properties are directly impacted or even indirectly impacted, e.g. in terms of impact on their setting. Demesnes that have the potential to be directly or indirectly impacted are considered in more detail under the section on landscape impacts in Section 11.4 Predicted Impacts below. Historic demesnes

with houses that have potential for visual impact have also been assessed, together with all other properties, within the VIS Tables 11.1A to 11.1D in Appendix 11.3. A more detailed consideration of architectural heritage is provided under Chapter 15 – Architectural Heritage.

11.3.6 Overall Summary of Receiving Landscape

There are no designated landscapes along the route. Open remote agricultural landscapes, distinctive drumlins and open ridges, Clooncullaan Lough and semi-natural habitats are amongst the most sensitive and significant landscape features along the proposed road development. The presence of residential property is a significant feature within this often remote rural landscape. In the context of road development, such development will be likely to experience significant visual impact where it is located at proximity to either the proposed road and/or re-aligned local roads.

Table 11.5 NIAH Historic Garden and Designed Landscapes Along or Close to the Proposed Road

Name	NIAH Index	Figure Ref.	Principal Retained Features and NIAH Comments	Location of the Property relative to Route and likelihood of Landscape and/or Visual Impact
Rathkeery Glebe (Ch. 1+450 to Ch.1+800)	0	N/A	Main house no longer present. Virtually no features of the designed landscape shown on the 1836 - 1846 OS map are visible in aerial photography.	Property located north of existing N5. The proposed road development passes to south of property and south of existing N5. No likelihood of landscape or visual impact.
Frenchpark House (Ch. 2+900 to Ch.4+600)	3	N/A	Main house no longer present. Main features unrecognisable - peripheral features visible. Some woodland has survived. Screening woodland around the eastern and southern boundaries has been removed some tree lines remain. The peripheral landscape of this site is indistinguishable from surrounding farmland.	Property located north of existing N5. The proposed road development passes to south of property and south of existing N5. No likelihood of landscape or visual impact.
Hermitage House (Ch. 13+050 to Ch.13+700)	3	N/A	Main features unrecognisable - peripheral features visible. Most of the sections of structural woodland shown on the 1836 - 1846 OS map have been removed and few features of the designed landscape shown on the 1836 - 1846 OS map are visible in aerial photography.	The proposed road development route passes through the outer portion of the original demesne in deep cutting at Ballaghcullia over 500m south of Hermitage House. No direct or indirect impact on designed landscape features or property.
Mantua House (Ch. 17+600 to Ch.19+500)	5	N/A	Main features substantially present - peripheral features unrecognisable. The network of drives and lanes shows little change. Much of the character of the structural woodland shown on the 1836 - 1846 OS map survives. Feature described as 'terrace' on 1836 - 1846 OS still visible in aerial photography. Few changes to the structural footprint of the designed landscape shown on the 1836 - 1846 OS map	Mantua lies directly north of R369. The proposed road development passes through southwest corner of old demesne, which is now coniferous plantation. Proposed Road passes to immediate south of R369 and central demesne and cuts through southeast estate boundary in crossing R369 at Corry East. Direct impact on boundary and adjoining mature trees at southeast corner of estate.
Raheen House (Ch. 21+000)	4	N/A	Main features unrecognisable - peripheral features visible.	Raheen House lies to south of R369. The proposed road development runs north of R369 over 200m from boundary of demesne and over 400m from house. No direct or indirect impact on designed landscape features or property.

Name	NIAH Index	Figure Ref.	Principal Retained Features and NIAH Comments	Location of the Property relative to Route and likelihood of Landscape and/or Visual Impact
Strokestown Park House (Ch. 50+000 to Ch.52+800)	5	N/A	Main features substantially present - some loss of integrity. Structural woodland has been lost. Parkland trees have been lost from parkland east of the principal building. Other sections of the peripheral landscape are indistinguishable from surrounding farmland.	The proposed road development passes through outer eastern portion of old demesne. This portion of the demesne is largely dispersed and is largely indistinguishable from surrounding farmland / scrubland. Direct impact on outer demesne – potential for limited visual impact from upper floors of main house.

11.4 Predicted Impacts

11.4.1 Introduction

The proposed road development crosses a rural and often remote open landscape where residential development is varyingly dispersed and clustered along local and other roads, most notably west of Frenchpark; at Cashel / Ballaghcullia; west and east of Mantua, north of Clooncullaan Lough and from Cregga south to Strokestown Demesne.

In this landscape, the provision of the proposed road development will inevitably give rise to significant alteration and significant impact on the local landscape and on views from properties sited in the vicinity of the road development. The landscape and visual impacts will be most pronounced during the construction and initial operation stages, after which landscape mitigation measures will be increasingly effective in integrating the road within the landscape and in reducing landscape and visual impacts.

It is noted that the removal of the majority of traffic from the existing N5 has potential for significant positive landscape and visual impact for Rathcroghan Archaeological Complex – a landscape of exceptional value and national / international importance – as well as for existing residential and community properties, including schools, located along the section of the existing N5 to be bypassed by the proposed N5 road.

The main elements of the proposed road development that have potential for significant landscape and visual impact during the construction stage are:

- Tree, hedgerow and vegetation removal;
- General landscape disturbance including disturbance to existing property boundaries;
- General construction activity, site compounds, construction traffic;
- Local diversion of transmission lines, including a 38 kV line at Ch. 21+900; a 220kV at Ch. 23+050, and a 110kV at Ch. 53+350 are required. One new pylon will be required at Ch. 23+050 in order to raise the existing transmission line for clearance over the proposed road development at Creeve. At Ch.53+350, it is proposed to remove one existing pylon and to locate two new pylons to realign the transmission line over the proposed road development at Scramoge;
- Construction of significant earthworks, including embankments and cuttings;
- Construction of junctions, elevated structures such as bridges; and
- Re-alignments of existing national, regional and local roads.

The main elements that have potential for significant landscape and visual impact during the operational stage are:

- The presence of embankments and to a lesser degree cuttings, which may include some sections of exposed rock, retained slopes etc.;
- The presence of elevated structures such as junctions and bridges;
- Disturbance to existing landscape patterns, new landscape areas;
- Illumination;
- Traffic; and
- Noise Barriers

In addition, there are elements such as signage, roadside barriers, culverts, attenuation ponds, fencing etc. However, given their low elevation and low off-road visibility these features will have little or no landscape or visual impact and the presence of similar features are a common and accepted aspect of all road developments and while visible from some surrounding properties, will not give rise to adverse visual impact.

Roadside illumination, which will also extend back along approach roads, will be restricted to the proposed roundabout junctions and two stretches of upgraded roads, namely the N61 and the LP-1405 (South) as follows:

- Junction 5: R361 Frenchpark Roundabout (Ch. 5+697 / Ch. 10+000);
- Junction 14: N61 Roundabout (Ch. 24+200 / Ch. 30+000);
- Junction 14B: N61 Shankill Roundabout (1.25km north of proposed N5 crossing of N61) (Ch. 1+250 on N61 Link)
- N61 between Junction 14: N61 Roundabout and Junction 14B: N61 Shankill Roundabout.
- Junction 19: Strokestown Roundabout (Ch. 40+500 / Ch. 50+000) on the local road at Lavally.
- Junction 19B: Kildallogge Roundabout (Ch. 40+500/Ch. 50+000) on the R369/LP-1405.
- LP-1405 (South) between Junction 19: Strokestown Roundabout and Junction 19B: Kildallogge Roundabout.

The detailed lighting design shall be completed in a manner that will minimise light-spill, glare and light pollution.

Construction and operational-stage landscape and visual impacts are discussed in the following sections. Direct impacts on trees, other physical features and landscape character have also been assessed. A detailed assessment of visual impacts is also provided in the Visual Impact Schedule (VIS) Tables 11.1A to 11.1D; Table 11.2 and Table 11.3 of Appendix 11.3. In addition, the VIS tables are cross-referenced to the Landscape and Visual Impacts Drawings, see Figures 11.1 to 11.25 in Volume 3.

11.4.2 Predicted Landscape Impacts

The proposed road development crosses a generally rural low-lying to rolling drumlin landscape which is predominantly in agricultural use but interspersed with small areas of semi-natural woodland; areas of peat / bogland; scrub; wetlands; lakes; and coniferous plantations. Residential properties are a common feature along sections of the corridor, particularly east and north of Strokestown. Within this landscape, the construction associated with the road will give rise to incidents of significant negative impact in terms of disturbance to the existing landscape and its character. While these landscape impacts will tend to be most pronounced during the construction and initial operation stages, the proposed road development will, in common with all road schemes, also have a residual or permanent impact on the landscape.

While the proposed road development as a whole will have some degree of inevitable impact on the landscape, significant impacts are limited to a number of areas of more distinctive character along the proposed road development. These areas are highlighted on the Landscape and Visual Impact Figures 11.1 to 11.25 in Volume 3 and the impact assessed in Table 11.6.

11.4.2.1 *Embankments and Cuttings*

Embankments and cuttings that will give rise to locally significant negative landscape impact include:

Section A

- No locally significant landscape impacts arising from embankments and cuttings.

Section B

- Ch. 12+500 – Ch. 14+500 Leggatinty / Derreen / Cashel / Ballaghcullia. Series of Embankments up to 6m high and deep cutting (to 12m) approaching and crossing local ridge. Includes elevated realigned connection between existing N5 and LT-56403 (North). Overlooked from ridge and nearby residential properties.
- Ch. 14+500 – Ch. 16+000 Drummin / Peak. Embankments up to 5m high across lowlying landscape overlooked from rising ground to south and residential property (Ch. 15+790).
- Ch. 17+150 – Ch. 18+400 Mullenduff / Corry West / Kilvoy. Embankments up to 3.5m high (with additional 2m screening bund) generally through coniferous plantation. Crosses local road (LP-1215) on embankment close to residential properties (Ch. 17+400 – Ch. 17+700).
- Ch. 18+800 – Ch. 20+500 Kilvoy / Corry East / Cloonyefferr. Cuttings to 7m through locally rising land / ridge. Crosses R369 and local road (LP-1218) close to residential properties (Ch. 19+500 – Ch. 20+000).
- Ch. 21+100 – Ch. 22+500 Cartronagor / Creeve. Embankments up to 4m and cutting 4m through local lowland and ridge – with coniferous plantation. Crosses R369 and local road close to residential properties (Ch. 21+800 – Ch.22+400).

Section B & Section C

- Ch. 23+400 to Ch. 24+200 and Ch. 30+000 to Ch. 30+400 Gortnacranagh. Cutting to 8m through local ridge and providing roundabout junction with existing N61 – with residential close by along N61.

Section C

- Ch. 30+600 – Ch. 32+000 Killeen West / Lurgan. Embankment up to 7m across open lowland valley. Underbridge for local road (LP-1412) (Ch. 31+900).
- Ch. 32+100 – Ch. 3+100 Killeen East. Cutting to 13m through local ridge.
- Ch. 33+150 – Ch. 33+900 Killeen West / Tullycartron. Embankment up to 7m across sloping ground to north of Clooncullaan Lough. Access on embankment to local road (LP-1409) to north. Sloping ground and lake overlooked from residential properties along local road to north.
- Ch. 34+500 – Ch. 35+050 Lugboy. Embankment up to 9m across lowland towards rising land at Cregga.
- Ch. 35+200 – Ch. 36+400 Cregga. Very deep cuttings to 18 to 26m through the upper slopes of drumlin ridge at Cregga. Open landscape setting.
- Ch. 36+500 – Ch. 38+100 Cregga / Cuilrevagh / Tullen. Series of high embankments up to 12m and cuttings to 14m across western slopes of drumlins and intervening valley. Open landscape setting.

- Ch. 39+700 – Ch. 40+500 Corskeagh. Cutting to 5m and embankment up to 8m in remote setting. Residential property (Ch.40+050).

Section D

- Ch. 50+000 – Ch. 50+550 Lavally. Cutting to 7m across local ridge with ringforts to either side (Ch. 50+525). Residential properties nearby.
- Ch. 50+750 – Ch. 51+300 Vesnoy. Embankment up to 7.5m across open remote lowland east of Strokestown House.
- Ch. 51+300 – Ch. 52+500 Cloonradoon. Embankment up to 3m (with additional 2m screening embankment) across open remote lowland east of Strokestown House.
- Ch. 52+500 – Ch. 53+500 Bumlin / Scramoge. Cutting to 5m leading to embankment up to 9m approaching either side of bridge over Scramoge River. Residential properties nearby.

11.4.2.2 Trees, Hedgerows and Woodlands

In overall terms the impact on trees, hedgerows and woodlands is considered to be slight negative, with many areas of the route corridor having low tree and woodland cover. Where impacts do occur they are identified on the Landscape and Visual Impact Figures 11.1 to 11.25 in Volume 3. The most notable loss of trees, tree-lines, hedgerows and or woodlands includes:

Section A

Tree / Woodland Impact Ref.	Description	Impact and Mitigation*
T-A1: Turlaghamaddy / Corskeagh (Ch. 4+300 to Ch. 5+600)	Loss of corridor through large coniferous plantations	Locally Slight landscape impact Some plantings retained within the lands acquired. New planting to be provided at the boundary of the proposed road development.

Section B

Tree / Woodland Impact Ref.	Description	Impact and Mitigation*
T-B1: Leggatinty (Ch. 10+150 to Ch.10+900) (Ch. 11+200 to Ch.11+700)	Loss of corridor through large coniferous plantation	Locally Slight landscape impact. Some residential properties located within wider plantation at Ch. 10+350. Some plantings retained within the lands acquired. New planting to be provided at the boundary of the proposed road development.
T-B2: Ballaghcullia / Bellanagare (Ch. 14+000 to Ch.14+200)	Severance and loss of narrow marginalised fringes of semi-natural woodland on edge of bogland.	Locally Moderate landscape impact. Area overlooked by residential properties on higher ridge. New locally appropriate planting to be provided within and at the boundary of the proposed road development to reconnect severed plantings.

Tree / Woodland Impact Ref.	Description	Impact and Mitigation*
T-B3: Drummin (Ch. 14+500 to Ch.14+650)	Severance and loss of portion of small block of deciduous woodland on east side of Owennafreesha River.	Locally Slight landscape impact. Area overlooked by residential properties on higher ridge. New locally appropriate planting to be provided within and at the boundary of the proposed road development to reconnect severed plantings.
T-B4: Peak (Ch. 15+100 to Ch.15+300)	Loss of remnant semi-natural woodland on fringes of bogland.	Locally Slight landscape impact. Area overlooked by residential properties on higher ridge. New locally appropriate planting to be provided on proposed material deposition areas and new planting to be provided at the boundary of the proposed road development.
T-B5: Peak (Ch. 15+400 to Ch.15+700)	Loss of 2 small coniferous plantations	Locally Moderate landscape impact. Residential property located immediately east of eastern plantation. New locally appropriate planting to be provided on proposed material deposition areas and new planting to be provided at the boundary of the proposed road development.
T-B6: Mullenduff / Corry East / Kilvoy (Ch. 16+700 to Ch.18+150)	Loss of corridor through fringing semi-natural woodland (Ch.16+700 – Ch.16+850) and large coniferous plantations. Development will also remove c.700m of semi-mature and mature chestnut and beech tree planting along the R369.	Locally Moderate landscape impact. Loss of woodland will also open up significant visual impact for adjoining residential properties at Ch. 17+600 and along R369. Some plantings retained within the lands acquired and extensive new locally appropriate planting to be provided on the proposed material deposition areas, on embankments and at the boundary of the proposed road development scheme.
T-B7: Kilvoy / Corry East (Ch. 19+100 to Ch.19+500)	Loss of mature trees (many of which are in poor condition) along southern boundary of Mantua House along R369.	Locally Moderate landscape impact for Mantua House and R369 corridor. New trees / tree belt to be reinstated along the new boundary of lands at Mantua.
T-B8: Raheen / Cartronnagor (Ch. 20+950 to Ch.21+850)	Loss of 2 separate coniferous plantations.	Locally Slight landscape impact. New locally appropriate planting to be provided on proposed material deposition areas and new planting to be provided at the boundary of the proposed road development.

Tree / Woodland Impact Ref.	Description	Impact and Mitigation*
T-B9: Creeve (Ch. 22+550 to Ch.22+800)	Loss of visually attractive small coniferous plantation located along lower side slopes of ridge.	Locally Significant landscape impact. Overlooked by residential properties located along R369 to north. New locally appropriate planting to be provided on proposed material deposition areas and new planting to be provided at the boundary of the proposed road development.

Section C

Tree / Woodland Impact Ref.	Description	Impact and Mitigation*
T-C1: Killeen East / Tullyloyd / Tullycartron (Ch. 33+150 to Ch.33+800)	Loss of sections of mature tree-lined hedgerow on sloping ground north of Clooncullaan Lough	Locally Moderate landscape impact. Overlooked by residential properties located along local road to north. New tree-lined hedgerow planting to be provided at the boundary of the proposed road development to re-connect severed hedgerows.

Section D

Tree / Woodland Impact Ref.	Description	Impact and Mitigation*
T-D1: Vesnoy / Cloonradoon (Ch. 51+000 to Ch.51+450)	Loss of narrow corridor of semi-mature scrub woodland on low-lying ground.	Locally Slight landscape impact. New hedgerow planting to be provided at the boundary of the proposed road development.
T-D2: Cloonradoon / Bumlin (Ch. 52+150 to Ch.52+450)	Loss of section of strong tree-lined hedgerow and edge of semi-natural woodland on low-lying ground.	Locally Moderate landscape impact. New tree-lined hedgerow planting to be provided at the boundary of the proposed road development to re-connect severed hedgerows.
T-D3: Bumlin / Scramoge (Ch. 52+700 to Ch.53+000)	Loss of sections of tree-lined hedgerows on either side of Scramoge River crossing.	Locally Moderate landscape impact. New locally appropriate planting to be provided within and at the boundary of the proposed road development to reconnect severed plantings.
T-D4: Scramoge (Ch. 53+400 to Ch.53+650)	Loss of edge of semi-natural woodland close to existing N5.	Locally Slight landscape impact. New planting to be provided at the boundary of the proposed road development.

* Refer also to Section 11.5 Mitigation Measures and to Figures 11.26 to 11.50 for details of specific mitigation measures

Table 11.6 Assessment of Landscape Impact (See Landscape Visual Impact Figures 11.1 to 11.25 in Volume 3)

Landscape Area and Location See Figures 11.1 to 11.25 in Volume 3	Potential Landscape Impact: Construction and Early-operational Stage	Proposed Mitigation Measures	Predicted Residual Landscape Impact
LLCA-1: Rathkeery / Portaghard (Ch. 1+500 to Ch. 3+500) Northern lower slopes of Mullaghnashee Wet Farmland Plateau	Proposed road development cuts across lower slopes of agricultural landscape with strong tree-lines and hedgerows. Moderate Construction & Post- establishment Impact	Strong tree-lined boundary hedgerow and locally appropriate planting of cut and embankment slopes, tying proposed road corridor back to background landscape. See landscape mitigation measures and figures.	Slight Post- establishment Operation Impact
LLCA 2: Cashel / Ballaghacullia / Drummin (Ch. 12+800 to Ch. 14+700) Interface between: Castlerea Raised Bogland and Breedoge Bog Basin	Road cuts across visually open local ridge and through area of attractive semi-natural scrub woodland / bogland in valley. Significant Construction & Post- establishment Impact	Strong planting of cut and embankment slopes, tying proposed road corridor back to background landscape. See landscape mitigation measures and figures.	Moderate Post- establishment Operation Impact
LLCA 3: Mantua (Ch. 18+000 to Ch. 19+750) Southern end of: Breedoge Bog Basin	Proposed road cuts through plantations and demesne boundary with mature trees (many in poor condition), woodland belts, mature tree-lined road (R369). Significant Construction & Post- establishment Impact	Strong planting of northern side of proposed road through old demesne landscape and strong tree-lined boundary planting of road corridor. Planting to replicate historic tree belt of varying width where possible. See landscape mitigation measures and figures.	Moderate Post- establishment Operation Impact
LLCA 4: Killeen West (Ch. 30+500 to Ch. 31+900) Northern end of Strokestown Drumlin and Turlough Belt	Proposed road cuts across open remote landscape valley and areas of wetland along river corridor Significant Construction & Post- establishment Impact	Strong planting of northern side of proposed road through old demesne landscape and strong tree-lined boundary planting of road corridor. See landscape mitigation measures and figures.	Moderate Post- establishment Operation Impact
LLCA 5: Killeen East (Ch. 33+000 to Ch. 34+100) Strokestown Drumlin and Turlough Belt	Proposed road cuts across Drumlin landscape with mature tree-lines, wetlands and lake feature at Clooncullaan Lough Significant Construction & Post- establishment Impact	Strong planting of cuttings and northern embankments. Maintain views to lake over road from houses and local road and from new road at appropriate locations. See landscape mitigation measures and figures.	Significant Post- establishment Operation Impact

Landscape Area and Location See Figures 11.1 to 11.25 in Volume 3	Potential Landscape Impact: Construction and Early-operational Stage	Proposed Mitigation Measures	Predicted Residual Landscape Impact
LLCA 6: Killeen East to Lavally (Ch. 35+500 to Ch. 40+500) Strokestown Drumlin and Turlough Belt	Proposed road runs across pronounced open rolling drumlin landscape with turlough and high quality views to and from ridges. Significant embankments and cuttings required. Significant Construction & Post-establishment Impact	Strong planting of western side of embankments and upper slopes of deep cuttings. Provide opportunity for views out over attractive landscape to west of road. See landscape mitigation measures and figures.	Significant Post-establishment Operation Impact
LLCA 7: Cloonradoon / Bumlin (Ch. 52+000 to Ch. 53+100) Scramoge River Basin	Proposed road runs through gently rolling landscape with semi-natural woodland leading to river crossing. Significant Construction & Post-establishment Impact	Strong planting to integrate edge of proposed road into background hedgerows and retained woodlands. Appropriate sensitive river edge planting / treatment to bridge abutments. See landscape mitigation measures and figures.	Moderate Post-establishment Operation Impact

11.4.3 Predicted Visual Impacts

Two hundred and eighty-five locations (52 in Section A; 89 in Section B; 84 in Section C and 60 in Section D) have been assessed for visual impact along the proposed road development. For the most part these refer to single residential properties; however, occasionally the location refers to a group of residential properties (e.g. at Strokestown) all of which are likely to experience a similar level of visual impact.

In addition 2 properties (B19-007 & D50-003) and 2 derelict buildings (A02-006 and C35-014) will be acquired as part of the proposed road development and a further 49 locations identified on Figures 11.1 to 11.25 were assessed as not having any visual impact.

The prominence and presence of properties varies along the different sections of the proposed road development. As might be expected – given the proximity to Strokestown – Section D has the highest number of properties per kilometre (c.15/km). By contrast, but again as might be expected, Sections B and C have the lowest number of properties per kilometre (c.6/km & c.8/km respectively) due in main part to the open and often marginalised nature of the landscape. However, residential development is not evenly distributed across any section and is usually clustered in some areas and very dispersed in others.

11.4.3.1 Construction Stage

Visual impact will tend to be most pronounced during the construction phase when the initial substantial and unfamiliar disturbance at or near properties is at its greatest and effective mitigation is limited. Therefore, negative temporary and short-term visual impacts will arise for residential and other properties located close to or adjoining the construction boundary. This is particularly evident for the many properties that are located in more remote rural locations.

Construction stage impact will arise primarily from visual disturbance and visual intrusion resulting from the initial loss of tree and hedgerow screening, earthworks, alteration of ground levels and from construction traffic. Issues such as noise and general construction activity, construction compounds will also have the effect of drawing visual attention to the works, thereby increasing the perceived visual impact associated with visual disturbance. The construction stage visual impact of the proposed road development has been assessed and is set out in detail on a section by section basis in the Visual Impact Schedules (VIS) Tables 11.1A to 11.1D in Appendix 11.3. The findings are also summarised in Table 11.2 of Appendix 11.3 and below.

In overall terms, of the 285 potentially impacted properties some 51 locations (18%) will have an imperceptible impact, even during the initial construction stage. A further 130 locations (45.5%) will have a slight (73) or moderate (57) level of temporary or short-term negative visual impact as a result of construction activities. The remaining 104 locations (36.5%) will experience varying degrees of significant (77) or profound (27) temporary or short-term negative visual impact associated with the construction phase. Summary details of visual impacts on property locations during all stages of assessment for the development are provided in Tables 11.7 and 11.8.

Focusing on significant and profound visual impacts it is noted that Sections A and D have the lowest percentage of construction-related visual impacts. This is due in part to the proximity of the proposed road development to the existing N5 to the west and to developed areas of Strokestown and the tie-in to the existing N5 to the east. By

contrast, but again as might be expected, Sections B and C have the highest percentage of significant and profound construction-related visual impacts. This is due in part to the more remote and rural nature of this landscape.

11.4.3.2 Operation Stage

On completion of construction, aspects such as earthworks and disturbance are removed as impacting features. Nevertheless, impacts arising from the presence of the proposed road will remain pronounced as mitigation will require a number of years in order to be effective. As such, operational-stage visual impact will be most pronounced in the short-term after construction (i.e. pre-establishment stage), however, negative visual impact will also continue to arise for residential and other properties close to or adjoining the boundary of the proposed road development for some considerable period of time (i.e. post-establishment stage).

During the operation stage, visual impacts will arise from the built physical presence of the proposed road development, including its structures, traffic usage and additional illumination both fixed and from vehicles, especially where the proposed road development is on embankment or at junctions and bridging locations. Depending on height, intervening topography and retained vegetation, embankments have the potential for visual obstruction and significant visual intrusion. Deep cuttings can also result in significant change to the visual nature of landscape continuity. Sloping ground may open up views of deep cut faces, especially where mitigation planting has not effectively established to join severed tree lines and hedgerow at the top of the cut slopes.

Measures for the mitigation of potential noise impact will be required at a number of locations along the proposed road development, especially where residential properties are in close proximity to the carriageway. Such noise impacts and mitigation measures are considered in detail in Chapter 12 – Noise and Vibration. Mitigation measures will involve the provision of barriers or earth bunds or a combination of such features. While initially these features may increase the visual presence of the proposed road development, they also provide for immediate visual screening of the proposed road development and its associated traffic. In the majority of circumstances these features can also be appropriately incorporated into the proposed landscaping measures.

The proposed road development also entails re-alignments / tie-ins to existing national, regional and local roads, together with drainage works and accommodation measures, all of which have potential for localised visual impact. Local road re-alignment is important as many residential properties tend to be sited along such roads.

A full assessment and description of visual impacts on properties is set out in the Visual Impact Schedules (VIS) Tables 11.1A to 11.1D in Appendix 11.3 and on Figures 11.1 to 11.25 in Volume 3 Landscape and Visual Impact Figures. The findings are also summarised in Table A11.2 of Appendix 11.3 and below.

In the pre-establishment stage 85 locations (30%) will have an imperceptible impact. A further 133 locations (47%) will have a slight (75) or moderate (58) level of short to medium-term negative visual impact. The remaining 67 locations (23%) will experience varying degrees of significant (43) or profound (24) short to medium-term negative visual impact associated with the early operation stage of the proposed road development. Summary details of visual impacts on property locations during all stages of assessment for the development are provided in Tables 11.7 and 11.8.

As landscape measures establish the level of visual impact will gradually recede so that in the post-establishment stage some 154 locations (54%) will have an imperceptible impact. A further 99 locations (35%) will have a slight (70) or moderate (29) level of medium to longer-term negative visual impact. The remaining 32 locations (11%) will experience varying degrees of significant (20) or profound (12) medium to longer-term negative visual impact associated with the proposed road development. Summary details of visual impacts on property locations during all stages of assessment for the development are provided in Tables 11.7 and 11.8.

Section A has 1 incident of significant longer-term impact (A02-020) and no incidence of profound longer-term impact. Property A02-020 is a two-storey residence, located immediately adjacent to and elevated over the proposed road with views along the carriageway.

Section B has 8 incidents of significant longer-term impact and 4 incidences of profound longer-term impact. The significantly impacted properties are located in remote and rural areas and are in proximity to the proposed road development. These include a very secluded and remote property located within a plantation at Leggatinty (B10-004); a property at Ballaghcullia (B13-012); 3 properties at the crossing of the R369 and adjoining landscape at Raheen / Cartronagor / Creeve (B21-003, B21-005 & B22-001); 2 properties at the crossing of the N61 (B24-002 & B24-003); and 1 property at Shankill Cross on the N61 (B24-011).

The 4 properties along Section B with profound impacts are B13-013 (Ch. 13+625); B15-006 (Ch. 15+775); and B17-002 & B17-003 (Ch. 17+600). Property B13-013 is located on a ridge at Ballaghcullia immediately alongside a deep cutting for the proposed road. The property overlooks the cutting and the line of the proposed road passing over the Owennaforeesha River valley to the east. Property B15-006 is sited in a remote and secluded rural location where the proposed road cuts across the immediate setting on a low embankment. Properties B17-002 & B17-003 are located close to an area of coniferous plantation to the north and south side of the proposed road, which is on a low embankment crossing a local road, north of its junction with the R369, at Mullenduff /Corey West.

Section C has 7 incidents of significant longer-term impact and 6 incidences of profound longer-term impact. Three of these significant impacts (C33-006, C33-007 & C33-008) and 3 of the profound impacts (C33-003, C33-004 & C33-005) are located along the local road at Tullyloyd to the immediate north of Clooncullaan Lough. All of these properties overlook the proposed road where it cuts through the immediate northern slopes of the lake edge. The remaining 4 properties with significant impacts are a remote cottage at Killeen West (C30-001); a property close to the proposed crossing of the R368 at Lugboy/Creega (C35-002); a second property close to the deep cutting on the slopes of Cregga Hill (C36-002); and a remote elevated property overlooking the proposed road at Lettreen (C39-011).

The 3 remaining properties with profound impacts along Section C are a semi-derelict property, C32-011, located south of the alignment at Killeen East; property C35-001, a house enclosed by mature tall trees at the proposed crossing of the R368, with significant road development, embankments and bridge structures to the immediate east; and property C40-001, a farmhouse in a very secluded rural setting north of Strokestown, where the proposed road passes to the immediate east on high embankment.

Section D has 4 incidents of significant longer-term impact and 1 incidence of profound longer-term impact. One of the properties with profound impact (D52-001)

and 2 with significant impacts (D52-002 & D52-003) are located in a remote setting at Cloonradoon, east of Strokestown Demesne. The remaining 3 properties with significant impact are located east of the bridging location over the Scramoge River where the road is on high embankment. Two of these (D52-007 & D53-002) are residential properties and one (D53-001) is warehouse/business.

Table 11.7 Summary of Visual Impact Assessment for Property Locations: Section by Section (Excluding No Impacts and Acquired Properties)

Road Section	Imperceptible	Slight	Moderate	Significant	Profound
Section A: 52 Locations					
Construction	8	9	19	14	2
Pre-Establishment	15	21	12	4	0
Post-Establishment	37	10	4	1	0
Section B: 89 Locations					
Construction	8	26	14	31	10
Pre-Establishment	17	24	20	18	10
Post-Establishment	34	33	10	8	4
Section C: 84 Locations					
Construction	20	16	14	23	11
Pre-Establishment	27	17	18	12	10
Post-Establishment	45	17	9	7	6
Section D: 60 Locations					
Construction	15	22	10	9	4
Pre-Establishment	26	13	8	9	4
Post-Establishment	38	10	6	4	2

Table 11.8 Overall Summary of Visual Impact Assessment for Property Locations: Sections A to D (Excluding No Impacts and Acquired Properties)

Road Section	Imperceptible	Slight	Moderate	Significant	Profound
Sections A - D: 285 Locations					
Construction	51	73	57	77	27
Pre-Establishment	85	75	58	43	24
Post-Establishment	154	70	29	20	12

Visual impacts will also arise for those who enjoy walking, cycling and / or driving the existing local roads impacted by the proposed road development. However, the majority of the works to local roads involve minor re-alignments and re-connections to the proposed N5 mainline, which will have localised slight negative impacts in removal of verges, hedgerows, trees etc.

It is also noted that the reduction in through traffic for properties along the existing N5 as well as from the existing towns and villages of Strokestown, Tulsk, Bellanagare and Frenchpark, will have a positive visual impact.

The local diversion of a number of existing transmission lines, including the provision of an additional pylon on the 220kV line at Creeve (Ch. 23+050); and the removal of

1 pylon and provision of 2 new pylon on the 110kV line at Scramoge (Ch. 53+350) all represent, very minor changes to the existing transmission line network.. The new pylon at Ch. 23+050 is located directly under the existing 220kV line and alongside the proposed road development in a rural and relatively remote landscape and will not give rise to any significant visual impact. The two new pylons at Scramoge (Ch.53+350) are located to either side of an existing pylon, which it is proposed to remove. The new pylons allow for raising of the transmission line over the proposed road development. The southernmost new pylon will move c.50m closer to an existing residential property with consequent increased visibility, however, the location for the pylon will remain north of the existing hedgerow to the north of the property.

It is considered that the proposed road project is sufficiently distant and well-integrated within the existing landscape, including by means of ridges and valleys, plantations and generally vegetation so as not give rise to any adverse landscape or visual impact on the Rathcroghan Complex or its setting (see Section 11.4.4 Photomontages below also). While some limited additional night-time illumination will also arise at the roundabout junctions and along the N61, this will not have an adverse impact in views from the Rathcroghan Complex. Small areas of road illumination, as well as more significant illumination at towns and villages, including Bellanagare, Tulsk, Elphin, and Strokestown, are already visible in views from the complex. In this context, small sections of proposed additional illumination along the proposed N5 will be integrated into these existing illuminations without any adverse impact in views from the complex.

It is considered that traffic moving along the proposed road development will be visible in the distant landscape from parts of the Rathcroghan Archaeological Complex. However, this is no different from the existing situation, where moving traffic on local roads, and most notably along sections of the R369 Bellanagare to Elphin and R368 Elphin to Carrick-on-Shannon Regional Roads, is already a feature of wider landscape views from the complex. More significantly the removal of a substantial proportion of the existing traffic from the existing N5, which passes directly through the Rathcroghan Archaeological Complex will have a significant positive impact on the visual context and setting of this important landscape.

It is also considered that the proposed road development will offer opportunities for the opening up of new scenic views over parts of the landscape corridor. The most significant and scenic of these will be within Section C with views south / southwest from Tullyloyd over Cloonacullaan Lough complex and surrounding landscape, and west from the more elevated setting of the Cuilrevagh / Tullen / Lettreen landscape. Both locations offer the opportunity to view and appreciate the character of the Mid-Roscommon Ribbed Moraines landscape.

11.4.4 Photomontages

A series of photomontages of the proposed road development have been prepared from locations within the Rathcroghan Archaeological Complex and from Strokestown House (Refer to Figure 14.27 to 14.59 in Volume 3).

The Photomontages, as described in Tables 11.09 & 11.10, clearly illustrate that the proposed road development will either not be visible or will be only barely discernible from the Rathcroghan Archaeological Complex and that it will not affect the significance, setting or views to and from individual sites or the complex as whole.

Table 11.9 Photomontage Locations

Photomontage Number	Name of Site	Co-ordinates (ITM)	Figure in Volume 3
AV01	Rathcroghan Mound	579965 E, 783676 N	14.28-14.29
AV01	Rathcroghan night time	579965 E, 783676 N	14.30
AV02	Rathmore	579535 E, 784548 N	14.31-14.34
AV03	Caran Fort	580375 E, 784706 N	14.35-14.36
AV03	Caran Fort night time	580375 E, 784706 N	14.37
AV04	Rathkineely ringfort	576704 E, 784770 N	14.38-14.39
AV05	Tulsk	583366 E, 781093 N	14.40-14.41
AV06	Ballymurray	581059 E, 785551 N	14.42-14.43
AV07	Carnfree	582421 E, 778463 N	14.44 -14.47
AV08	Rathnadarve	579385 E, 783690 N	14.48-14.49
AV09	The Mucklaghs	579086 E, 782887 N	14.50-14.51
AV10	Relig na Riogh	579772 E, 782868 N	14.52-14.53
BH01	Strokestown House 2 nd Floor Level	593542 E, 780836 N	14.54-14.55
BH02	Strokestown House Ground Floor Level	593542 E, 780836 N	14.56-14.57
BH03	Urney Church	544067 E, 780943 N	14.58-14.59

Table 11.10 Photomontage Descriptions

Photomontage	Name of Site	Description
AV01 (Figures 14.28, 14.29)	Rathcroghan Mound	AV01 shows the view to the north of Rathcroghan mound. From the top of the mound there are 360° panoramic views afforded over the rural landscape. The proposed road development is located over 3.5km to the north and at this distance is barely discernible with the intermittent natural screening and topography. The significance of the site remains unaltered.
AV02 (Figures 14.31-14.34)	Rathmore	The predominance of shelterbelts and built structures has limited local views. At a distance of just under 3km, there is a low degree of visibility of the proposed road development (76°-92°), the impact is considered negligible and the significance of the site remains unaltered.
AV03 (Figures 14.35-14.36)	Caran Fort	This monument is located approximately 2.8km south of the proposed road development. The long distance views will remain uninterrupted with existing shelterbelts of trees and structures limiting some foreground views. At this distance and with the intervening skyline vegetation, the proposed road development is barely discernible and will not affect the significance of the site or detract from the views.
AV04 (Figure 14.38-14.39)	Rathkineely	No appreciable change, the proposed road development is largely located in the valley and is difficult to view from this vantage point. The long distance views remain uninterrupted.

Photomontage	Name of Site	Description
AV05 (Figures 14.40-14.41)	Tulsk	No clear view of the proposed road development.
AV06 (Figures 14.42-14.43)	Ballymurray	Intermittent and limited visibility of the proposed road development (85°-95°) in the distance (over 2km north). This does not distract from the setting of the low mound and the significance and setting of the group of sites is unaltered by the proposed road development.
AV07 & AV07B (Figures 14.44-14.47)	Carnfree	No discernible difference noted, intermittent visibility of the proposed road development in the far distance (over 8km north of the site).
AV08 (Figures 14.48-14.49)	Rathnadarve	No clear view of the proposed road development due to the rising topography in the foreground.
AV09 (Figures 14.50-14.51)	Mucklaghs	No clear view of the proposed road development due to the rising topography in the foreground.
AV10 (Figures 14.52-14.53)	Relig na Riogh	Generally limited views to the north as the ground rises. The redline depicting the road can be glimpsed (90°-94°) over the horizon at a considerable distance, however at this distance it is doubtful if the road will be visible to the naked eye. The location of the road development does not detract from the site and the significance of the site and its setting remains unaltered.
AV01 (Figures 14.30)	Rathcroghan (night time)	At night time there is a slight increase in dispersed light, however this change is not readily appreciable as there are already background light sources.
AV03 (Figures 14.37)	Caran Fort (night time)	At night time any change is not readily appreciable as there is already a background light source at Elphin.
BH01 (Figures 14.54-14.55)	Strokestown House (2 nd Floor Level)	Elevated view east/northeast over parkland enclosed by mature trees and woodland. Proposed road development is not visible.
BH02 (Figures 14.56-14.57)	Strokestown House (Ground Floor Level)	Ground level view east/northeast over parkland enclosed by mature trees and woodland. Proposed road development is not visible.
BH03 (Figures 14.58-14.59)	Urney Church	Ground level view east/northeast through woodland in middle ground of view. Proposed road development either not visible or barely discernible in background. Moving traffic will be intermittently visible on road.

11.4.5 Overall Summary of Landscape and Visual Impacts

The principal significant impacts on landscape will be within the more remote landscapes near Mantua, at Cartronagor / Creeve, at Tullyloyd / Clooncullaan Lough and between Cregga Hill and Lavally, north of Strokestown. In these locations the proposed road development crosses locally distinct areas of undulating varied topography, scenic lakeshore landscapes and elevated landscapes. Other significant but localised impacts will occur along the length of the proposed road development, particularly in the vicinity of major cuttings and embankments. Additional illumination is not a major feature of the proposed road development, nevertheless, the introduction of the road and its associated traffic will bring permanent change to specific locations within the landscape corridor.

The proposed road development will also result in visual impacts, including some that are significant or profound. These impacts often coincide with some of the more major landscape impacts, such as at Clooncullaan Lough and elsewhere at specific locations usually where properties are located immediately alongside the proposed road and where the road is on embankment. In summary, 11 properties will continue to experience varying character of profound visual impact even after establishment of mitigation measures.

11.4.6 Do-Nothing Impact (Without the Proposed Road Development)

In the event that the proposed road development does not proceed, the existing N5 would remain as the primary road connection between Ballaghaderreen and Scramoge and between Mayo and the east of the country. Landscape and visual impacts would be restricted to those locations along the existing N5 currently experiencing such impacts and there would be little or no change in such impact. This is of particular note at Rathcroghan Archaeological Complex, where the existing N5 and the traffic bisects this important archaeological landscape. Without the proposed road development the existing severance of this exceptional landscape would continue, potentially negating opportunities for more sustainable promotion and protection of the archaeological landscape.

Landscapes and properties along the proposed road development would not experience the negative landscape and visual impacts that are associated with the proposed road development and their existing setting would experience little or no change in the short to medium-term. However, the significant number of properties along the existing N5 that would benefit from the removal of traffic with the proposed road development in place would not experience any improvement in the Do-Nothing scenario.

If the proposed road development did not proceed lands alongside the existing N5 may from time to time, experience localised road improvements and/or widening as part of general road improvement measures. The National Monuments Service of the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs has advised that any *“The archaeological complex at Rathcroghan is one of major importance. Not only does it contain a number of national monuments... but the complex is part of a candidate World Heritage Site “The Royal Sites of Ireland” which the State is working towards proposing formally for inclusion in the World Heritage List... This demonstrates that NMS views the Rathcroghan complex as not only being of major national importance, but also being of a high degree of international importance... Any proposed “on-line upgrade” of the existing road which passes through the Rathcroghan complex would have a direct, negative impact on the setting of this candidate World heritage Site as well as the various national monuments within it... Any development which could be seen as detracting from the outstanding universal value of the candidate World Heritage Site could put its progressions towards World Heritage Site status in jeopardy.”* As such, online improvement works to the existing N5 would not be possible through the area of the Rathcroghan Archaeological Complex. Where road improvements would occur outside of Rathcroghan these would result in short-term but limited negative impacts along sections of the existing N5. These works could include roadside tree and hedgerow removal, direct impact on property boundaries / gardens and increased visual impact for adjoining properties.

11.5 Mitigation Measures

11.5.1 Introduction

Consideration was given to avoidance of significant landscape and visual impacts during the route corridor selection and the Design process for the proposed road development. This consideration commenced with the preparation of a landscape and visual constraints assessment for the study area and continued with an assessment of the likely landscape and visual impact of a number of potential route corridor options. Nevertheless, all road construction projects give rise to some degree of unavoidable landscape and visual impacts.

Mitigation of landscape and visual impacts for the proposed road development shall have regard to the approach as set out in the following TII/NRA guidance documents:

- Guidelines for the Creation and Maintenance of an Environmental Operating Plan;
- A Guide to Landscape Treatments for National Road Schemes in Ireland;
- Guidelines for the Protection and Preservation of Trees, Hedgerows and Scrub Prior to, During and Post Construction of National Road Schemes;
- Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads.

In the following sections detailed mitigation proposals are set out for both the Construction Stage and Operational Stage.

11.5.2 Mitigation Measures: Construction Stage

During the construction stage, an Environmental Operating Plan (EOP) will be drawn up by the main contractor in accordance with the TII/NRA's '*Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan*'. This will ensure good working practices are followed so as to minimise and manage any significant, negative environmental impacts arising from construction. As well as other items, the EOP will include the mitigation set out within this chapter and incorporate them as part of their implementation.

General mitigation will ensure that the works will have continuous monitoring under the Environmental Operating Plan so as to ensure adequate protection of areas outside of the construction works. Specific measures shall ensure that:

- Site machinery shall generally operate within the proposed road development construction area.
- Storage areas shall be located so as to avoid further significant impacts on existing residential and other property, woodlands, trees, hedgerows, drainage patterns, etc.
- Solid site hoarding shall be provided where construction works closely adjoin residential property as indicated on 11.26 to 11.50 in Volume 3.
- Where construction compounds are located within 200m of residential properties, solid hoarding or similar, of minimum 2.0m in height shall be provided on the side(s) of the compound open to the property for visual and general screening.
- Construction compounds shall be fully-decommissioned and reinstated to their pre-construction condition at the end of the construction contract.

- Except in rock cuttings, side slopes and other landscape areas along the proposed road development shall be prepared for soiling, and either seeded and/or planted at the earliest possible opportunity. As such, scope exists for undertaking significant areas of seeding and planting prior to the end of the construction works. However, due to construction programming and seasonal restrictions, it is also likely that significant planting works will not be undertaken until the end of the major construction phase.

11.5.3 Mitigation Measures: Operational Stage

11.5.3.1 Introduction

Measures proposed to mitigate the landscape and visual impacts of the operation stage of the project are considered under General Measures and Specific Measures. General measures are described in the following section, while specific measures are set out in detail in Table 11.11 which describes project-wide measures. The measures are also identified on Figures 11.26 to 11.50 in Volume 3.

11.5.3.2 General Mitigation Measures

Landscape mitigation proposals shall take full account of the approaches and principles as set out in 'A Guide to Landscape Treatments for National Road Schemes in Ireland', in particular to Chapter 4: Components of the Roadside Landscape; Chapter 5: Soil Geographic Factors; and Chapter 6: Landscape Treatments. Unless otherwise qualified in this section 11.5 of this EIAR, seeding and planting proposals, including species and planting type and species shall be in accordance with Chapter 6 of these Landscape Guidelines.

General measures will be applied over the entire proposed road development, depending on the nature of the particular road section. Where feasible such measures shall include for the re-connection of field boundaries with hedgerows established along the boundary of the proposed road development (see Landscape Guidelines, Section 6.2.1: Hedgerows & Tree-lined Hedgerows). Trees as noted in Mitigation Table 11.11, shall be randomly spaced in a visually naturalistic manner within such hedgerows.

This approach will be locally modified to incorporate other landscape treatments, which may negate the requirement for the hedgerow, e.g. blocks of native woodland planting (see Landscape Guidelines, Section 6.2: Tree and Shrub Treatments) or naturalising grassland meadows (see Landscape Guidelines, Section 6.1: Grassland Treatments) where it is considered appropriate to have open sections of carriageway. Open sections shall allow for views to the wider landscape where they do not impinge on requirements for screening residential properties or other amenities.

Proposals will ensure that planting is distributed along the entire proposed road development and the associated local road re-alignments and will vary from typical rural, randomly tree-lined hedgerow reinstatement to wide plantings of landscape and screen planting to the establishment of larger areas of new woodland for integration of the development into the wider landscape. Shrub planting will be used at the edges of the tree planting. This will increase the density and diversity of the plantings and improve the biodiversity structure (see Landscape Guidelines, Section 6.2: Tree and Shrub Treatments).

Treatments will take into consideration the assessment and recommendations of the Biodiversity section of this EIAR (Chapter 7) and will ensure that in general, species which are locally indigenous and native are utilised in the proposed plantings. However, detailed proposals in terms of their nature and approach will consider the

locally impacted environment and in terms of species may include non-native plants, e.g. beech at old demesnes or a more ornamental approach where garden plantings are disturbed.

Where areas are in cut or fill, a grass or meadow sward will generally be established over the entire slope except in areas of cutting through stable rock (see Landscape Guidelines, Section 4.2: Cuttings and Embankments). Stable rock slopes will be retained as an exposed face for natural colonisation and as a local landscape feature. In general it is not proposed to plant either cut or fill slopes in their entirety, but to encourage a more naturalistic and locally sympathetic grouping of plantings within a naturalising grass sward. Slopes may also be seeded to wildflower grassland and hydro-seeding may be utilised for seeding of steep slopes.

Along the length of the proposed road development, landscape areas within junctions and small areas of severed fields, plots or other property acquired for the construction of the proposed road development will be varyingly treated including being planted in a semi-natural copse like fashion with native woodland species (see Landscape Guidelines, Section 4.6: Additional Plots and Other Areas). Such woodland blocks dispersed along the proposed road development will assist in the improvement of the longer-term visual character of the proposed road development and local surrounds. Particular attention shall be given to an appropriate extent and scale of planting in and surrounding junctions (see Landscape Guidelines, Section 4.3: Junctions, Interchanges and Roundabouts) and embankments (see Landscape Guidelines, Section 4.2.2: Embankments).

Certain areas along the length of the proposed road development have been set aside for drainage requirements/ pollution control/attenuation. Where such works are of a linear nature, disturbed sections of hedgerow will be reinstated / planted to match the existing. Where attenuation ponds are proposed these will be appropriately fenced and planted with hedgerow screen planting along the development boundary to minimise their impact.

In general the proposed planting will generally be established using bare-root transplants, whips and feathered trees which adapt readily to disturbed ground conditions. A proportion, totalling not less than 5% of 'Half-standard' (6-8cm girth & 200cm-250cm tall) and a further 5% 'Standard' (8-10cm girth & 250cm-300cm tall) trees shall be used to supplement these plantings especially in the vicinity of residential areas. All planting mixes will take cognisance of, and include native and local species as identified in Chapter 7 of this EIAR. These requirements have been adapted and further detailed as appropriate to particular areas as set out in Table 11.11.

Tree species utilised will be selected from a list of primarily native, naturalised and indigenous species (except where the proposed road development is contiguous with existing plantations containing other species such as conifers or beech *etc*), which will include alder, common ash (*subject to planting restrictions at time of works*), common birches, common oaks, mountain ash, Scots pine and willow species. Planting sizes will be from 75cm to 400cm in height and tree species will be planted at average 2.0m centres within the wider planting mix.

Shrub planting species utilised will be selected from a list of primarily native and indigenous species, which will include, blackthorn, elder, hawthorn, hazel, holly, guelder rose, spindle, willows and other plants found naturalised in the affected localities. Planting sizes will vary from 30 to 75cm in height and shrub species will be

planted at between 1.0 and 1.5m centres depending of landscape type, see Table 11.11.

Hedge planting will be primarily of blackthorn and hawthorn interspersed with other species such as elder, hazel, holly and those found locally. Hawthorn within hedgerows shall be planted at between 75 to 90cm in height and at 500mm centres in each of 2 double staggered rows or wider plantings where a more dense effect is required. The hedgerow will be interspersed with standard-sized randomly spaced tree species such as alder, common ash and oaks, as appropriate to particular locality.

Areas to be seeded to naturalising meadow will be thinly topsoiled (approx. 5cm layer) and seeded with a locally appropriate seed mix. Mainline and side road verges will be cultivated, topsoiled minimum 200mm deep and stone buried to remove stones down to 25mm diameter prior to seeding to a low-maintenance grass seed mix.

The proposed road development lighting design shall meet the requirements of BS EN 13201-2:2003 and BS5489-1: 2003, Code of Practice for Design of Road Lighting. Lighting of Roads and Public Amenity Areas and shall comply with the requirements of the TII/NRA DMRB DN-LHT-03038. The detailed lighting design shall be completed in a manner, which will minimise glare and light pollution that in combination with extensive landscaping as proposed at junctions will ensure that light-spill effect is minimised. It is noted that the proposed road development includes for a minimum of roadside illumination, effectively restricted to roundabouts and along the immediate approaches to and from such features.

In specific locations barriers and earth bunds will be provided to reduce the impact of noise. Such barriers will also have the effect of providing immediate visual screening of traffic from properties. Such features shall, wherever possible, be integrated within the proposed landscaping measures. Chapter 12 outlines the assessment of noise and the requirements for such mitigation. The noise mitigation measures are proposed as either barriers or bunding or as a combination of such features.

11.5.3.3 Specific Mitigation Measures

Specific mitigation measures are set out on Figures 11.26 to 11.50 in Volume 3 and in Table 11.11. The measures include construction-related aspects such as avoidance/minimising impact on property boundaries and landscape features as well as provision of solid screen hoarding during the construction phase for those properties particularly impacted by the works.

The detailed design and implementation of landscape measures shall have regard to the following features:

- Clearance zones (DN-GEO-03034 - Safety Barrier Standards);
- Sight-lines, including at junctions and to carriageway signage, etc;
- Location of cut-off drains at the top of cuttings and at the bottom of embankments;
- The location and requirements for maintenance access along the mainline;
- Locations where rock is encountered in cuttings. Such rock faces may be retained as geological features of the road corridor; and
- The location of noise barriers.

Note: Due to the risk of Ash Dieback (*Chalara fraxinea*) and until further notice, ash (*Fraxinus* species) is no longer approved by the TII/NRA for planting schemes. This does impact on the use of Mountain ash – also known as rowan (*Sorbus aucuparia*).

Table 11.11: Specific Landscape and Visual Mitigation Elements and Treatments (refer to Figures 11.26 to 11.50) Note 'Proposed Road Development' has been Abbreviated to 'PRD' in the Following Table

Reference	Location	Description of Measures
Verges & Roundabouts	Mainline and Local Roads Generally	Where appropriate, verges shall be provided along both sides of mainline. Verges will also be provided around junctions and along local road re-alignments and tie-ins. Verges and roundabouts shall be finished to even gradients, with minimum 200mm topsoil and stone buried or raked to be free of rubble and stones over 25mm diameter. Verges and roundabouts to be seeded to low-maintenance seed mix.
Cut slopes and Embankments	Mainline and Local Roads Generally	Cut slopes and embankments shall be finished to even gradients, topsoiled unless otherwise stated in this table or elsewhere in the EIAR. Slopes shall be free of rubble and stones over 50mm diameter. All such rubble/stone shall be removed or buried. Unless otherwise stated in the EIAR slopes shall be seeded to a low maintenance non-agricultural grassland or to a wildflower grassland. Rock cuttings may remain exposed as features of the road corridor and landscape.
Ponds, swales, 'V-drains' etc.	Generally	All slopes shall be evenly graded and free of rubble and stones over 50mm diameter. Slopes shall be seeded to low maintenance non-agricultural grassland or to a wildflower grassland, allowing for natural development over time. Steep slopes on pond edges and 'V-drains' shall be hydro-seeded. Areas around ponds shall be a diverse landscape of low maintenance grassland / species-rich wildflower grassland and plantings of low-canopy woodland and shrub planting. Hedgerows, of blackthorn and hawthorn, without tree species, shall be established along all non-roadside boundaries. Non-palisade type fencing (e.g. paladin, or timber post and rail) shall be used around pond areas.
Material Deposition Areas (DA)	See 'PA' on Figures 11.26 to 11.50 in Volume 3	Unless otherwise stated in the EIAR, material deposition areas shall be seeded to species-rich grassland and allowed to develop naturally. Between 15 and 25% of area shall be planted to a mosaic mix of alder, birch, Scots pine and willow species. Subsoil may be mixed into final surface to improve surface rigidity.

Reference	Location	Description of Measures
Noise barriers / bunds	Generally	Low-canopy woodland, hedgerow and/or shrub planting of native species shall be established as either a narrow planting of 3.0m minimum width or double-staggered hedgerow along the full off-road face of barriers. Low-canopy and/or shrub planting of native species shall be established on the full off road face of bunds. The planting shall include ash*, birch, blackthorn, elder, hawthorn, and/or willow species as appropriate. Plants shall be 90 to 120cm in height at planting.
Plants and Planting Areas	Generally	All tree species over 150cm in height together with all Pine shall be appropriately staked and tied. All failed, dead or defective plants shall be replaced before the end of each and every year of defect aftercare. Full planting area to free of stones over 50mm in diameter.
Grass	Generally	Grass areas shall provide full sward cover within 12 months of seeding. Any failed, bare or defective areas shall be re-seeded between March – May and/or August – September in each and every year of defect aftercare.
Unauthorised Access, Parking and/or Encampment	Generally	Landscape proposals shall avoid creating areas considered as being suitable for unauthorised parking and shall use landscape proposals to deter and prevent such use.
Headlight Impacts	Generally	Landscape proposals shall use specific landscape treatments to avoid and/or reduce the potential visual impact of headlights on residential and other sensitive property. The measure shall apply equally to the mainline, junctions, roundabouts, tie-ins and local and link roads.
(RA) Remnant Areas	Generally & refer to 'RA' on Figures 11.26 to 11.50 in Volume 3	Any remnant post-construction lands shall be treated to a diverse range of planting and non-planting proposals to include a minimum 50% Landscape Treatment Type 1 and/or Type 2 and/or Type 3, as locally appropriate. The remaining area shall be treated as locally appropriate low maintenance grassland / species-rich grassland.
(SPT1) Screen Planting Type 1 (refer to SPT1' on Figures 11.26 to 11.50 in Volume 3)	Planting at 1.0m centres for visual screening shall be of a minimum of 5m in width. The planting shall extend for a minimum of 100m to either side of any adjoining residential property or amenity.	Planting will include a minimum of 5% of 'standard-sized' trees (8-10cm girth); 5% of half-standard trees (6-8cm girth); 15% of 'whips' (minimum 150cm in height), together with a further 10% of evergreen Scots pine of minimum 60cm in height at planting. Standard and Half-standard tree species shall be alder and/or birch. Standard and Half-standard trees and Pine to be planted at average 2.5m centres throughout. The planting shall include a dense under-storey (at average 1 plant/metre) of woodland transplants and shrubs. Transplants, which shall include 20% Hawthorn, shall be between 90 to 120cm in height) Shrub species shall be 30 to 50cm in height and include a minimum of 10% holly.

Reference	Location	Description of Measures
<p>(SPT2) Screen Planting Type 2 (refer to 'SPT2' on Figures 11.26 to 11.50 in Volume 3)</p>	<p>Planting at 1.0m centres for visual screening shall be of a minimum of 3m in width. The planting shall extend for a minimum of 100m to either side of any adjoining residential property or amenity.</p>	<p>Planting shall include a minimum of 5% of 'standard-sized' trees (8-10cm girth); 10% of half-standard trees (6-8cm girth); 25% of 'whips' (minimum 150cm in height). Standard and Half-standard tree species shall be alder and/or birch. Standard and Half-standard trees shall be planted at average 2.0m centres throughout.</p> <p>The planting shall include a dense under-storey (at average 1 plant/metre) of woodland transplants and shrubs. Transplants, which shall include 30% hawthorn, shall be between 90 to 120cm in height) Shrub species shall be 30 to 50cm in height and include a minimum of 25% holly.</p>
<p>(BHT1) Boundary Hedgerow Type 1 (refer to 'BHT1' on Figures 11.26 to 11.50 in Volume 3)</p>	<p>General double staggered hedgerow with tree planting</p>	<p>Primarily blackthorn (20%) and hawthorn (40%) hedgerow interspersed with other species such as elder, hazel, holly and those found locally. Hawthorn plants shall be between 75 to 90cm in height and planted at 50cm centres in each of two double staggered rows, 25cm apart. Other plants shall be interspersed and of between 30 to 50cm in height. The hedgerow shall be interspersed with 'standard-sized' (8-10cm girth) randomly planted alder and/or oak trees planted at random naturalistic spacings but averaging a min. of 1 tree per 25 linear metre.</p>
<p>(BHT2) Boundary Hedgerow Type 2 (refer to 'BHT2' on Figures 11.26 to 11.50 in Volume 3)</p>	<p>Double staggered hedgerow with little or no tree species</p>	<p>Primarily blackthorn (25%) and hawthorn (60%) hedgerow interspersed with other species such as elder, hazel, holly and those found locally. Hawthorn plants shall be of between 75 to 90cm in height and planted at 50cm centres in each of two double staggered rows, 25cm apart. Other plants shall be interspersed and of between 30 to 50cm in height. The hedgerow shall be interspersed with 'standard-sized' (8-10cm girth) randomly planted alder and/or oak trees planted at random naturalistic spacings but averaging a min. of 1 tree per 25 linear metre. Limited tree species, such as birch and mountain ash may be included as 'whips' at 150cm in height.</p>
<p>(LTT1) Landscape Treatment Type 1 (refer to 'LTT1' on Figures 11.26 to 11.50 in Volume 3)</p>	<p>General low-canopy woodland planted at average 1.5m centres</p>	<p>Area to be planted to native or indigenous woodland. Planting shall include a proportion, totalling not less than 5% of 'Half-standard' trees (6-8cm girth & 200cm-250cm tall) and a further 5% 'Standard' trees (8-10cm girth & 250cm-300cm tall) to be used to supplement a general planting of 10% tall whips (150cm minimum) 10% whips (120 - 150cm) 25% transplants (90-120cm), and shrub plantings.</p> <p>Species to include alder, birch, blackthorn, hawthorn, hazel, holly, mountain ash, oak, Scots pine and willows as locally appropriate. Half-standard and Standard-sized trees to be alder / ash*, mountain ash and/or oak.</p>

Reference	Location	Description of Measures
(LTT2) Landscape Treatment Type 2 (refer to 'LTT2' on Figures 11.26 to 11.50 in Volume 3)	Semi-natural low-canopy woodland with limited tree species planted at average 1.5m centres	Area to be planted to native or indigenous semi-natural woodland with limited tree species. Planting shall include a proportion, totalling not less than 15% whips (120 - 150cm) 30% transplants (90-120cm) and shrub plantings. Species to include alder, birch, blackthorn, hawthorn, hazel, holly, mountain ash and willows as locally appropriate. If locally appropriate tree species may be omitted entirely.
(LTT3) Landscape Treatment Type 3 (refer to 'LTT3' on Figures 11.26 to 11.50 in Volume 3)	High-canopy Woodland planted at average 1.5m centres	Area to be established as native semi-natural high-canopy woodland containing higher percentage oak and/or Scots pine. Planting shall include a proportion, totalling not less than 5% of 'Half-standard' trees (6-8cm girth & 200cm-250cm tall) and a further 5% 'Standard' trees (8-10cm girth & 250cm-300cm tall) to be used to supplement a general planting of 10% tall whips (150cm minimum) 10% whips (120 - 150cm) 25% transplants (90-120cm), and shrub plantings. Species to include alder, birch, blackthorn, hawthorn, hazel, holly, mountain ash, oak, Scots pine and willows as locally appropriate. Half-standard and Standard-sized trees to be ash, and/or oak and Scots Pine to be minimum 10% of planting.
(CS) Construction Screening	Specifically as indicated on Figures 11.25 to 11.50 in Volume 3	Provide for solid screening hoarding for the duration of the construction stage for those properties most particularly impacted by the works.

11.6 Residual Impacts

11.6.1 Landscape Impacts

As with all such road developments, the proposed road development, by the means of its very presence will have a permanent effect and therefore a degree of residual impact on the landscape character of its immediate corridor. Nevertheless, it is considered that with the gradual establishment of proposed landscape mitigation measures, the proposed road development will be successfully integrated within its landscape setting in the longer-term. The longer-term development of overall landscape mitigation proposals shall also have a residual positive impact in terms of increased landscape diversity and structure.

It is considered that some level of local slight to moderate residual impact will remain along the proposed road development generally, with significant residual impacts limited to the Clooncullaan Lough and Cregga landscape areas.

The proposed road development will have no residual negative impact on demesne landscapes or on landscape planning.

11.6.2 Visual Impacts

Residual landscape impacts are generally as outlined in the Visual Impact Schedule tables (Tables 11.1A to 11.1D and Table 11.2 of Appendix 11.3). After planting and mitigation measures have established and developed, the severity and prominence of visual intrusion will be gradually and increasingly mitigated, especially where the

proposed road development is in cutting; is at some distance from the impacted properties, or where such properties are already similarly influenced by the presence of the existing N5. Nevertheless, the proposed road development will – as with all such developments – also by its presence, continue to have residual visual effects for properties in proximity to the development. Notwithstanding the proposed mitigation measures, it is considered that medium and longer term profound visual impact will remain for 12 properties located along the proposed road development.

Appendix 11.1

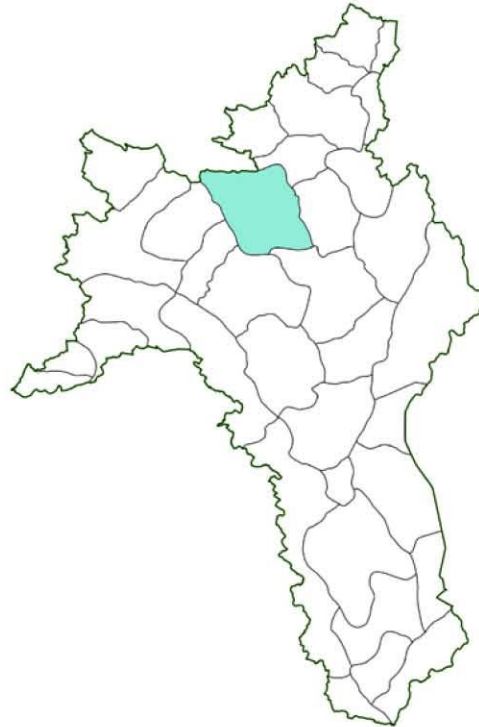
Landscape Character Assessment of Character Areas relevant to the Proposed Road Development

Roscommon LCA 20: Breedoge Bogland Basin

Key Characteristics

This LCA is located in the northern region of County Roscommon, defined by the Sligo county boundary to the north, the general catchment of the River Breedoge and landcover pattern. The landform is one of a broad shallow basin draining to the northwest serving the above mentioned river and contained by higher ground to the west and east. The Breedoge River is fed in turn by other smaller rivers including the Mantua River and the Finasclin River. The Breedoge feeds the southern extreme of Lough Gara, providing scenic views from nearby local roads. Three distinct shifts of surface vegetation are readily apparent. In the east of the LCA, landcover comprises mostly wet and dry grassland complex with low hedgerows of hawthorn and willow. There is a dramatic shift to raised bog and reclaimed raised bog in the centre of the LCA where birch and willow woodland occurs along drainage channels. This eventually gives way to drier grassland in the northwestern corner where coniferous stands and high hedgerows flank local roads. The areas of bog are very extensive as can be seen from image below. The LCA is

served by a series of regional roads (R361, R370 and R369) linking to the north-south national road (N61). The largest settlement in the LCA is the village of Ballinameen, located on dry and slightly elevated ground to the east.



The overall image is one of a broad bogland basin draining into Lough Gara in neighbouring County Sligo.

Landscape Value

This LCA has been classified as Moderate in terms of landscape value. The principle feature of interest is the vast area of bogland in the centre of the LCA, which has intrinsic ecological qualities and is remote. There is a designated Scenic View located on the N61 to the east providing a broadly panoramic and elevated view overlooking this LCA as seen below.

Forces of Change

The principle forces of change in this LCA include afforestation of bogland, encroachment of rural housing into bogland fringes and overlooking Lough Gara as well as increased marginalisation of farmland particularly to the east.

Key Recommendations

- In an area where bogland predominates the best opportunity is for alternative rural enterprises. Where applications arise they should have regard to normal planning controls with particular attention to design.



Extensive bogland of heather and grasses with distant coniferous afforestation

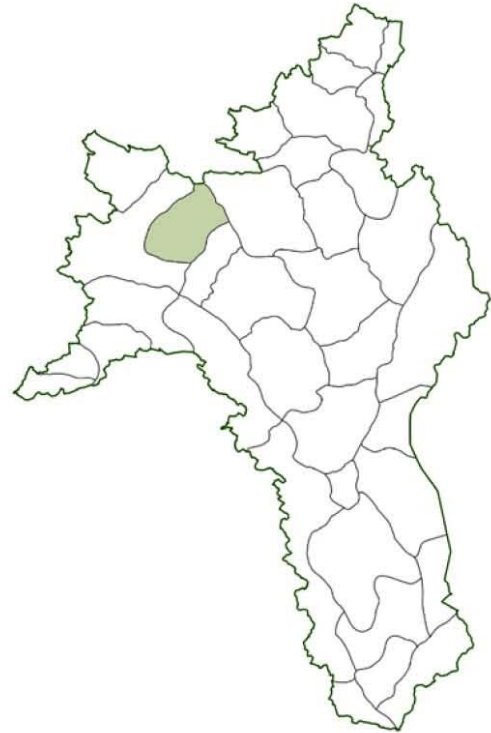


Panoramic view at dusk from the N61 heading south (LCA 20 visible to right of view)

Key Characteristics

This LCA is located in the northwest of County Roscommon, defined by its relatively elevated position overlooking wetter areas of bogland to the northwest. Its landcover contrasts strongly with the extensive areas of bog located to the southwest. Landform comprises a broad elevated and rounded plateau sweeping gradually to lower ground to the north in the vicinity of Lough Gara. This area of raised ground climaxes at Mullaghnashee where elevated and panoramic views are provided of the surrounding landscape. The largest river in this LCA is the Carricknabraher River which flows northeast eventually connecting to Lough Gara. Landcover comprises a complex of raised bogland on higher ground near Mullaghnashee and otherwise a patchwork of both wet and dry grassland throughout the remainder of the LCA. The quality of farmland improves from the southwest to the northeast, with the lower lands north of the busy N5 comprising well drained pasture lands. Aside from the N5, the LCA is served by the R361 and a dense network of local roads. The principle settlement in the LCA is Frenchpark, a town that appears to be rapidly expanding.

Of cultural heritage interest is Frenchpark Demesne located north of the N5 and the burial place of Douglas Hyde, first President of Ireland in a nearby graveyard.



The overall image of this LCA is of dry and elevated undulating farmland with pockets of cultural interest.

Landscape Value

This LCA is of Moderate landscape value, much like its neighbouring LCAs to the east and west. The main features of special value include the elevated views available from the summit of Mullaghnashee and the cultural heritage interest in the Douglas Hyde burial place and the adjacent Frenchpark Demesne with its walled estate grounds, parkland landscape and folly. The abovementioned Carricknabraher River is important from a fisheries perspective.

Forces of Change

The N5 is due to be realigned in the medium term, with route selection studies currently underway. Whichever direction the revised route will take, the new road will bring about significant change in the character of the northern end of this LCA. The likelihood is for increased demand for alternative rural enterprise buildings. The village of Frenchpark is currently undergoing rapid expansion and this was raised as an issue of concern in the focus group meetings. Care should be taken that this expansion does not compromise the heritage value of the parkland landscape of Frenchpark Demesne located to the west of the village. There is a scattering of rural dwellings elsewhere.

Key Recommendations

- Applications for new development including residential and alternative rural development should have regard to design guidelines. In particular policies should protect the water quality of the Carricknabraher River, the walled estate grounds of French Park Demesne and the scenic views at Fairymount.



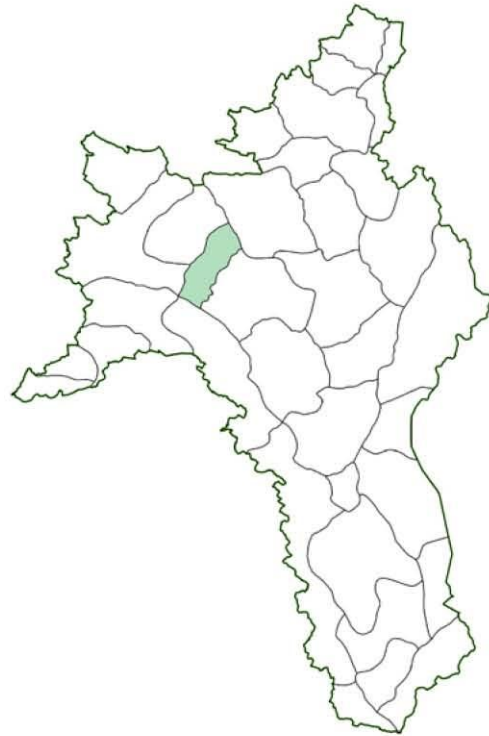
View north from elevated ground at Fairymount

Roscommon LCA 27: Castlerea Raised Bogland

Key Characteristics

This LCA is one of the smallest LCAs in the county located towards the northwest of County Roscommon with a very striking character. The Castlerea Raised Bogland is predominantly a plateau which drops off very gradually along the southeastern edge to a swath of dry grassland providing a very strong contrast in terms of colour and texture. There are no major rivers in this LCA, however an orthogonal drain runs on an northeast-southwest axis before shifting at right angles to join to the Owennaforeshe River. Landcover is greatly influenced by the dominance of bog, comprising almost exclusively heather and grass. There is very little afforestation, except perhaps at the outer fringes to the northeast and southwest. There are almost no houses in or around the bogland and the only settlement is the village of Ballangare to the northeast. The eastern boundary of the LCA is defined in the most part by the N5. Otherwise, the

LCA is served by regional road R361 to the north and a local road to the south.



This LCA has a very distinctive image of a remote, isolated and tranquil bogland.

Landscape Value

This landscape character area is of High value due to the extent of bogland, the sense of remoteness and tranquility and the contrast provided with its broad surrounds. It was mentioned by a number of attendees at the focus group meetings as a special place to 'get away from it all'. The area of bogland in this LCA is highly valued for its natural heritage, designed as an NHA, SPA and cSAC.

Forces of Change

The N5 mentioned above is due to be realigned in the medium term, which could potentially involve shifting the axis of the road inside this LCA. It is important that appraisal of alternative routes takes into consideration the special quality of the core bog area as described above. There currently appears to be a low threat from single rural dwellings in and around the bogland itself, although some development has taken place towards the west. Any increase in afforestation would impact on the sense of openness.

Key Recommendations

- This landscape character area would be very vulnerable to change, especially in the central bogland area. Care should be taken not to permit housing that would erode the sense of remoteness and special tranquility that currently prevails in the central bogland.



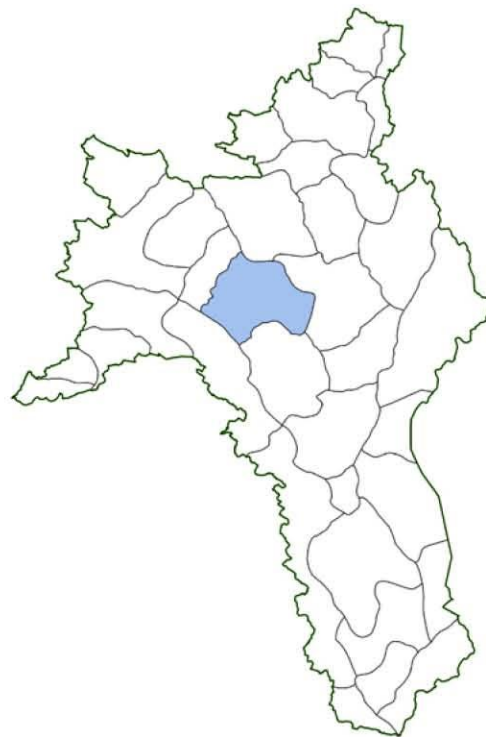
Panorama of extensive and remote bogland views

Roscommon LCA 28: Tulsk and Rathcroghan Plateau

Key Characteristics

This LCA is located in the centre of the northern half of County Roscommon and is generally higher and drier than the neighbouring LCAs. The character area rises to the summit of a hill at Rathkineely (161m ASL), with a slightly lower hill to the east at Rathcroghan Cross Roads (125m ASL). This landscape is also distinguished from its surrounds due to the visually striking concentration of archaeological monuments located therein comprising mounds ringforts, ring barrows, ancient roads and field systems, megalithic tombs, souterrains. The principle feature of public attraction is the large mound located on the west side of the N5 Ballaghaderreen Road and located approximately in the centre of the overall archaeological complex. This site is signposted and has a small car park and information sign. Driving or walking through this LCA gives a strong impression of a very rich heritage, one that dates from the Early Prehistoric Period right the way through into the Early Medieval Period (AD400-AD800). It is best known as a major royal settlement (the seat of the legendary Queen Maeve). It is also described as a location of a great cemetery, an assembly site and an inauguration site of the Kings of Connaught. The LCA is therefore one of the most important archaeological and historical landscapes not just in County Roscommon but in fact on a national scale.

The landscape here is reasonably well drained, comprising tightly grazed grassland with stone walls and low hedgerows. There are opportunities for long distant views, particularly from the ring fort at Rathcroghan as well as further west at Toberrory. The N5 passes through this LCA connecting otherwise to a network of local roads and farm lanes. The only settlement in this character area is the historical town of Tulsk located in the east. This town is strategically positioned on a major crossroads between the east west N5 and the north-south N61. There is a visitor centre there.



The overall image of this LCA is of an ancient landscape extremely rich in heritage and full of curious and memorable human-made landscape features.

Landscape Value

This landscape is of Exceptional value and is one of just two landscapes in the entire county which have been classified as such. The rich archaeological heritage to be discovered in this LCA is of national significance and this is fully appreciated not only by scientists and academics but also by the people of Roscommon. In the three focus group meetings the Rathcroghan area was time and time again highlighted as a jewel in the Roscommon landscape. Rathcroghan is one of the four 'royal sites' that feature prominently in early Irish literature (along with Tara, Navan and Knockaulin) particularly in the epic Cattle Raid of Cooley, the *Táin Bó Cúailgne* which was initiated there.

Forces of Change

The N5 is due to be realigned in the medium term and this could bring about the most significant shift in the character of this LCA depending upon its ultimate routing. The existing N5 passes immediately adjacent to several of the monuments that form the Rathcroghan archaeological complex and detracts considerably from the visitor experience due to the intrusion of noise and the irritation of constant traffic winding its way through Roscommon. When the traffic is diverted away from this road there is huge potential to significantly improve the quality of the experience of Rathcroghan. It is therefore essential that future applications for development along this road takes into account the exceptional heritage value of this area.

Other forces of change include afforestation particularly on wetter farmland, as well as some single rural dwellings (although this is not as pronounced as in other parts of Roscommon).

Key Recommendations

- It should be an objective of the Council to give special recognition to the exceptional heritage value of the Rathcroghan archaeological complex. All applications for development within the vicinity should require an Impact Assessment to ensure the protection of Rathcroghan.
- There are issues of public access within the archaeological complex. It should be an objective of the Council to fulfill the recommendations of the Conservation Plan for the Rathcroghan Archaeological Complex and any subsequent reports.



View from the Rathmore mound at Rathcroghan



View overlooking the Carns archaeological site towards Slieve Bawn in the far distance

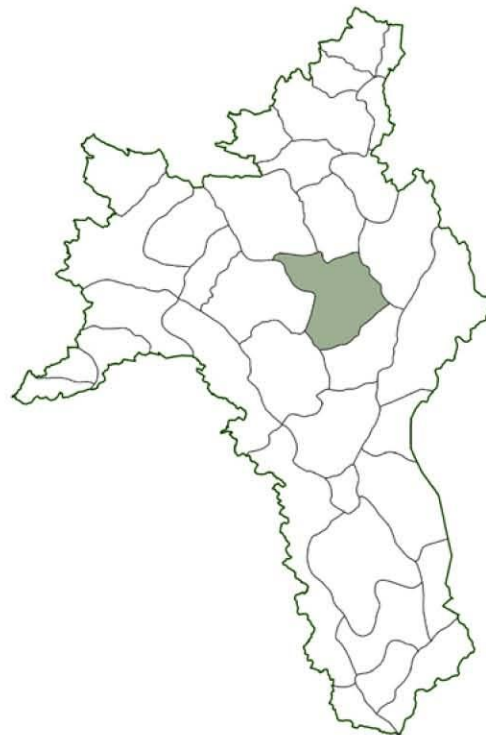


View of the inauguration site for Kings of Connaught, the main Rathcroghan archaeological site.

Key Characteristics

This landscape character area is located in the northern half of County Roscommon. It is a relatively large LCA and is defined by a series of rounded hills to the east, an area of high ground to the west at Rathcroghan and otherwise by the clustering of lakes and turloughs. These turloughs combine with the rolling drumlin hills to create the essence of the character of this landscape. The drumlin hills are aligned on a northeast to southwest axis and fade out to flatter ground in the western half of the LCA. The hills determine the drainage pattern which flows northeast in the direction of the Shannon corridor. There are several lakes and turloughs in this landscape and they combine with the low hills to create a distinctive and very strong character. The landscape changes throughout the year as the turloughs fill and empty, creating a very dramatic seasonal effect. The sight of hedgerows descending gradually underwater is a curiosity and must draw a strange look from passers-by not familiar with the character of this most fluid landscape. The pattern of drumlins also has a major influence on the landcover in this LCA with higher ground comprising mostly well drained dry grassland and lower ground typically comprising reclaimed blanket bog and wetland. This combination of the bright green hills and russet dips and valleys is striking. The largest settlement in this LCA is the town of Strokestown. The town was planned around Strokestown Park House (1720-1740) and is a fine example of an estate

town. It is an impressive town not least for its unusually wide main street and the axial relationship created between the grand entrance to Strokestown House in the east and the elevated church to the west. Strokestown House is currently undergoing major improvement works and will be of significant tourist importance once completed. Of heritage value is the Famine Museum in Strokestown as well as the birth place of the renowned poet Percy French at Cloonyquin. The main street currently serves the N5. The other main road in this LCA is the R61 to the west along with the regional road R366 which passes close to the eastern edge of this area.



Overall image of this landscape is one of a rolling wetland with a strong cultural node at Strokestown.

Landscape Value

This character area is of Moderate landscape value. The main features of value are planned settlement of Strokestown with its associated demesne developed in the 18th century. The area is characterised by the amount of lakes and turloughs which are visually significant.

Forces of Change

The N5 is due to be realigned between Strokestown and Ballaghaderreen and this could bring about considerable change in this LCA. The existing road currently meanders on dry ground

away from lakes and turloughs and it is important that the new road makes the least possible impact on these special attributes as well as the heritage qualities of Strokestown House and grounds. Aside from this development, there is evidence of single rural dwelling development throughout this LCA but particularly concentrated on hills overlooking lakes and turloughs.

Recommendations

- Although the rolling landform may visually accommodate built development, the natural heritage value around the lakes and turloughs should constrain development. The Council should adopt an objective that recognises the lakeland nature of this LCA.
- It should be an objective of the Council to prepare, as part of the LAP review, a Design Statement in order to protect the special heritage of Strokestown.



View of the drowned drumlin landscape

Roscommon LCA 31: Scramoge River Basin

Key Characteristics

This LCA is located in the centre of Roscommon, north of Roscommon Town. It is defined to the east by the highest ridge in County Roscommon, namely Slieve Bawn which rises to a height of 262m ASL, to the north by a series of drumlin hills, to the west by a low ridge of high ground and to the south by landcover pattern. The centre of this LCA is a low basin serving the Scramoge River which drains in a northeasterly direction towards the Kilglass Lakes and onwards to the Shannon system. The Scramoge River Basin character area is thus one of the most varied of all the LCAs in this study concerning landform. The central area is a flat raised bog, surrounded by a series of reclaimed raised bogs. Higher ground is dominated by extensive areas of wet grassland with the ridge of Slieve Bawn being mostly afforested with coniferous plantations. This LCA also provides huge contrast in terms of landcover, therefore. There are no settlements in this LCA and the central bogland area provides an opportunity for tranquility and isolation. In the northeastern corner of this LCA, the N5 passes through a gap of low ground

between Slieve Bawn and a ridge running north to Kilglass. This pass creates a gateway experience and is readily appreciable to users of the N5. Aside from this road, the N61 defines parts of the western boundary of the LCA and regional road R368 passes to the north.



The overall image of this LCA is one of a low river and bogland basin flanked by an elevated forest ridge.

Landscape Value

This LCA is of Moderate landscape value. There is one extensive NHA in the centre of the area which is of ecological and habitat value.

Forces of Change

There have been quite a number of single rural dwellings built in this LCA in the recent past, likely driven by the proximity to the county town of Roscommon just a short distance to the south as well as Strokestown to the north. On higher ground, there has been a considerable amount of coniferous afforestation and this is likely to gradually creep downhill as farmers consider their land use options.

Key Recommendations

- The bogland NHA would be vulnerable to any change of any kind. There may also be potential for wind farm development on the top of Slieve Bawn due to its elevated and exposed position. Any applications for wind farms in this area should be assessed with regard to the visual impact in accordance with the national guidelines.

- It should be an objective to direct single rural dwellings to lower ground in farmland areas where there are mature hedgerows which can assist in the visual integration of such change, away from the edges of raised bogland or higher areas of land where they would be visually intrusive.



View to south overlooking raised bog with areas of coniferous plantation



View to northeast overlooking reclaimed raised bog and raised bog complex, with Slieve Bawn in the distance

Appendix 11.2
**Roscommon County Geological Site Report for the Mid Roscommon Ribbed
Moraines**

ROSCOMMON - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Mid Roscommon Ribbed Moraines
Other names used for site	
IGH THEME	IGH7 Quaternary
TOWNLAND(S)	Too many to list ... the field covers over two hundred and thirty individual townlands, across an area of 200 km²
NEAREST TOWN	Strokestown, Elphin, Tulsk
SIX INCH MAP NUMBER	16, 17, 22, 23, 28, 29, 36
NATIONAL GRID REFERENCE	190000 282000 (centre of features)
1:50,000 O.S. SHEET NUMBER	33, 40 1/2 inch Sheet No. 12

Outline Site Description

This field of ribbed moraine forms part of a small, discrete field of these features, west and northwest of Slieve Bawn. It covers an area of 10 by 20 kilometres, and includes approx. 100 ribbed moraine features.

Geological System/Age and Primary Rock Type

The ribbed moraines are formed on bedrock which is Lower Carboniferous limestone. The features themselves are Quaternary in age, having been deposited at the base of the ice sheet moving northwest to southeast during the maximum period of the last Ice Age.

Main Geological or Geomorphological Interest

These ribbed moraines each contain many superimposed drumlins on their crests, and the area has traditionally been known as the southwesternmost extreme of the 'Drumlin Belt'. The ribbed moraines can only be seen using digital elevation modelling (DEM) and satellite imagery owing to their size.

This ribbed moraine field is not only unusual in its small size and 'discreteness' (comparatively for these types of landform), but being interspersed with deep peat means the features are quite striking. It forms the perfect 'ribbed' topography.

The features are generally 6km-8km long and 1km or so wide, with individual superimposed drumlins being c. 1km long and 400m-500m wide. They attain a maximum height of about 35m and are usually 25m or so in elevation.

Site Importance – County Geological Site

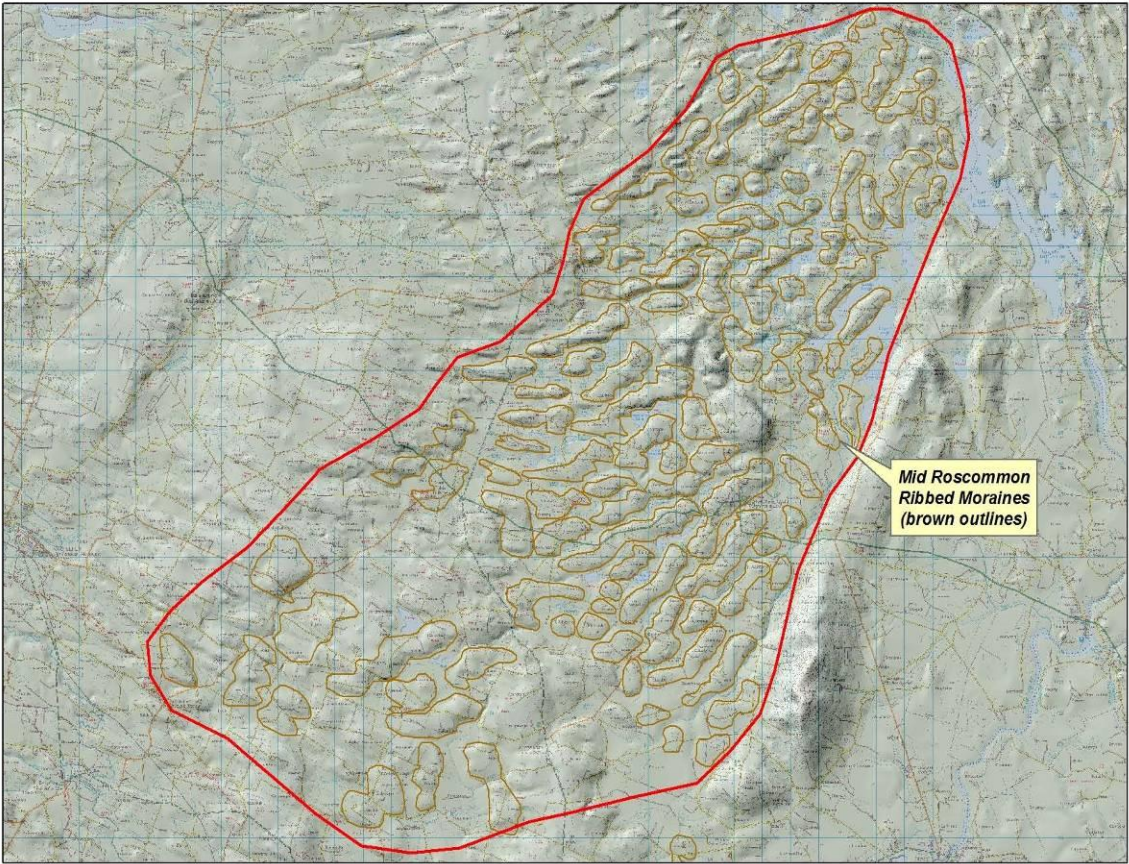
This is one of the finest fields of discrete ribbed moraines in the country.

Management/promotion issues

This is an excellent site in terms of macro-scale Quaternary subglacial geomorphology. The features are too large to undertake any conservation efforts on their part, but the landscape itself is noteworthy and should be promoted as unique amongst landscape elements within the Roscommon County Development Plan and in Landscape Characterisation.



A view across some of the mid Roscommon ribbed moraine from Lisduff, east of Elphin, looking north.



Appendix 11.3

Description of Properties, Impacts, Mitigation Measures and Predicted Visual Impacts

Mitigation: Refer to Section 11.5 Mitigation Measures of Chapter 11 of the EIAR. GLM refers to general landscape mitigation measures as described in Chapter 11 of the EIAR. Specific mitigation measures refer to specific proposals as described in Table 11.11 of Chapter 11 of the EIAR and set out on Landscape and Visual Impact/Mitigation Figures (Figures 11.26 to 11.50). Additional mitigation measures are also noted on the Figures and in Section 11.5 Mitigation Measures of Chapter 11 of the EIAR.

Table 11.1A App-A: Section A

Property	Mitigation	Construction	Pre Establishment	Post Establishment
A01-001	BHT1	Moderate	Slight	Imperceptible
A01-002	BHT1	Moderate	Slight	Imperceptible
A01-003	BHT1	Moderate	Slight	Imperceptible
A01-004	BHT1	Significant	Moderate	Slight
A01-005	BHT2	Imperceptible	Imperceptible	Imperceptible
A01-006	BHT1; LTT1	Slight	Imperceptible	Imperceptible
A01-007	BHT1; LTT1	Slight	Imperceptible	Imperceptible
A01-008	BHT1; LTT1	Slight	Imperceptible	Imperceptible
A01-009	BHT1; LTT1	Slight	Imperceptible	Imperceptible
A01-010	BHT1; LTT1	Slight	Imperceptible	Imperceptible
A01-011	BHT1; LTT1	Moderate	Slight	Imperceptible
A01-012	BHT1; LTT1	Significant	Moderate	Slight
A01-013	BHT1	Moderate	Slight	Imperceptible
A01-014	BHT1; SPT2	Significant	Moderate	Moderate
A01-015	BHT1; SPT2	Significant	Moderate	Slight
A01-016	BHT1; SPT2	Significant	Moderate	Slight
A02-001	BHT1	Imperceptible	Imperceptible	Imperceptible
A02-002	BHT1	Imperceptible	Imperceptible	Imperceptible
A02-003	BHT1; LTT1	Moderate	Slight	Imperceptible
A02-004	BHT1; SPT2; LTT3	Moderate	Slight	Imperceptible
A02-005	BHT1; SPT2; LTT3	Significant	Moderate	Slight
A02-006	Acquired	N/A	N/A	N/A
A02-007	BHT1; SPT2; LTT1	Significant	Significant	Moderate
A02-008	BHT1; SPT2; LTT1	Moderate	Slight	Imperceptible
A02-009	BHT1; LTT1	Moderate	Slight	Imperceptible
A02-010	BHT1; LTT1	Moderate	Slight	Imperceptible
A02-011	BHT1; LTT1	Significant	Moderate	Slight
A02-012	Not Used	N/A	N/A	N/A
A02-013	LTT3	Moderate	Slight	Imperceptible
A02-014	BHT1; LTT3	Moderate	Slight	Imperceptible

Property	Mitigation	Construction	Pre Establishment	Post Establishment
A02-015 Douglas Hyde Centre	BHT1; LTT3	Significant	Moderate	Slight
A02-016	BHT1; SPT2	Moderate	Slight	Imperceptible
A02-017	N/A	-	-	-
A02-018	N/A	Slight	Slight	Imperceptible
A02-019 Not a Residence	BHT1; SPT2	N/A	N/A	N/A
A02-020	CS; BHT1; LTT1; SPT2	Profound	Significant	Significant
A02-021	CS; BHT1; SPT2	Significant	Significant	Moderate
A02-022	BHT1; SPT2; LTT1	Moderate	Slight	Imperceptible
A02-023	BHT1; SPT2; LTT1	Moderate	Slight	Imperceptible
A02-024	BHT1; SPT2; LTT1	Moderate	Slight	Imperceptible
A02-025	BHT1; SPT2; LTT1	No Impact	No Impact	No Impact
A02-026	BHT1; SPT2; LTT1	No Impact	No Impact	No Impact
A02-027	BHT1; SPT2; LTT1	No Impact	No Impact	No Impact
A02-028	BHT1; SPT2; LTT1	No Impact	No Impact	No Impact
A02-029	BHT1; SPT2; LTT1	No Impact	No Impact	No Impact
A02-030	BHT1; SPT2	No Impact	No Impact	No Impact
A02-031	BHT1; SPT2	No Impact	No Impact	No Impact
A03-001	BHT1; SPT1	Significant	Moderate	Slight
A03-002	BHT1; SPT1	Significant	Moderate	Slight
A03-003	BHT1; SPT1	Imperceptible	Imperceptible	Imperceptible
A03-004	BHT1; SPT1	Imperceptible	Imperceptible	Imperceptible
A03-005	BHT1	Slight	Slight	Imperceptible
A03-006	N/A	No Impact	No Impact	No Impact
A03-007	BHT1	Imperceptible	Imperceptible	Imperceptible
A03-008	BHT1	Imperceptible	Imperceptible	Imperceptible
A03-009	BHT1	Imperceptible	Imperceptible	Imperceptible
A04-001	N/A	No Impact	No Impact	No Impact
A04-002	BHT1	Slight	Slight	Imperceptible
A04-003	N/A	No Impact	No Impact	No Impact
A04-004	BHT2; LTT1; SPT2; DA	Profound	Significant	Moderate
A04-005	LTT1; DA	Significant	Slight	Imperceptible
A04-006	LTT1; DA	Moderate	Imperceptible	Imperceptible
A04-007	LTT1; DA	Moderate	Imperceptible	Imperceptible
A05-001	BHT1; BHT2; LTT1	Moderate	Moderate	Slight
A05-002	BHT1; BHT2; LTT1	Slight	Slight	Imperceptible

Table 11.1B App-B: Section B

Property	Mitigation	Construction	Pre Establishment	Post Establishment
B10-001	BHT1; BHT2; LTT1	Slight	Slight	Imperceptible
B10-002	BHT1; SPT1	Slight	Slight	Imperceptible
B10-003	BHT1; SPT1	Slight	Slight	Imperceptible
B10-004	SPT1; LTT1	Significant	Significant	Significant
B10-005	N/A	No Impact	No Impact	No Impact
B10-006	N/A	No Impact	No Impact	No Impact
B11-001	N/A	No Impact	No Impact	No Impact
B11-002	N/A	No Impact	No Impact	No Impact
B12-001	BHT1; SPT1	Moderate	Moderate	Slight
B12-002	BHT1; SPT1	Slight	Imperceptible	Imperceptible
B12-003	BHT1; SPT1	Imperceptible	Imperceptible	Imperceptible
B12-004	BHT1; SPT1	Slight	Imperceptible	Imperceptible
B12-005	BHT1; SPT1; LTT1	Moderate	Imperceptible	Imperceptible
B12-006	BHT1; SPT1; LTT1	Slight	Imperceptible	Imperceptible
B12-007	BHT1; SPT1; LTT1	Significant	Slight	Imperceptible
B12-008	BHT1; LTT1	Significant	Moderate	Slight
B12-009	BHT1; LTT1	Significant	Moderate	Moderate
B12-010	BHT1; LTT1	Slight	Slight	Imperceptible
B13-001	BHT1; SPT1; LTT1	Significant	Significant	Slight
B13-002	BHT1; LTT1	Significant	Significant	Slight
B13-003	BHT1; LTT1	Moderate	Slight	Imperceptible
B13-004	BHT1; LTT1	Moderate	Slight	Imperceptible
B13-005	BHT1; LTT1	Slight	Imperceptible	Imperceptible
B13-006	BHT1; LTT1	Slight	Imperceptible	Imperceptible
B13-007	BHT1; LTT1	Slight	Imperceptible	Imperceptible
B13-008	BHT1; LTT1	Slight	Imperceptible	Imperceptible
B13-009	BHT1	Significant	Moderate	Slight
B13-010	BHT1	Significant	Moderate	Moderate
B13-011	BHT1	Significant	Moderate	Slight
B13-012	BHT1	Significant	Significant	Significant
B13-013	CS; BHT1; SPT1	Profound	Profound	Profound
B14-001	BHT1; BHT2; SPT1; LTT2	Significant	Moderate	Slight
B14-002	BHT2; SPT1; LTT1; DA	Moderate	Moderate	Moderate
B14-003	BHT2; SPT1; LTT1; DA	Moderate	Moderate	Slight

Property	Mitigation	Construction	Pre Establishment	Post Establishment
B15-001	BHT2; SPT1; LTT1; DA	Moderate	Moderate	Moderate
B15-002	BHT2; SPT1; LTT1; DA	Moderate	Moderate	Slight
B15-003	N/A	No Impact	No Impact	No Impact
B15-004	N/A	No Impact	No Impact	No Impact
B15-005	BHT1; SPT2	Slight	Slight	Imperceptible
B15-006	CS; BHT1; SPT1; SPT2; DA	Profound	Profound	Profound
B15-007	N/A	No Impact	No Impact	No Impact
B16-001	N/A	No Impact	No Impact	No Impact
B16-002	N/A	No Impact	No Impact	No Impact
B16-003	N/A	No Impact	No Impact	No Impact
B16-004	N/A	No Impact	No Impact	No Impact
B16-005	N/A	No Impact	No Impact	No Impact
B17-001	CS; SPT1; LTT1; DA	Profound	Significant	Slight
B17-002	CS; SPT1; LTT1; DA	Profound	Profound	Profound
B17-003	CS; BHT1; SPT1; LTT1; DA	Profound	Profound	Profound
B17-004	CS; BHT1; SPT1; LTT1	Profound	Significant	Moderate
B17-005	CS; BHT1; SPT1; LTT1	Significant	Moderate	Slight
B17-006	N/A	Imperceptible	Imperceptible	Imperceptible
B17-007	N/A	Imperceptible	Imperceptible	Imperceptible
B17-008	DA	Significant	Moderate	Imperceptible
B19-001	N/A	No Impact	No Impact	No Impact
B19-002	BHT1; LTT1	Slight	Slight	Imperceptible
B19-003	BHT1; LTT1	Slight	Slight	Imperceptible
B19-004	BHT1; LTT1	Slight	Slight	Imperceptible
B19-005	BHT1; LTT1	Significant	Moderate	Slight
B19-006	BHT1; LTT1	Profound	Significant	Moderate
B19-007	Acquired	N/A	N/A	N/A
B19-008	BHT1; SPT1	Significant	Significant	Moderate
B19-009	N/A	Slight	Imperceptible	Imperceptible
B19-010	BHT1	Significant	Slight	Imperceptible
B20-001	BHT1; SPT1	Significant	Moderate	Slight
B20-002	BHT1; SPT1	Significant	Moderate	Slight
B20-003	BHT1; SPT1	Significant	Significant	Slight
B20-004	BHT1; SPT2	Significant	Significant	Slight

Property	Mitigation	Construction	Pre Establishment	Post Establishment
B20-005	BHT1; SPT2	Significant	Significant	Slight
B20-006	BHT1; SPT2	Significant	Significant	Slight
B20-007	BHT1; SPT1; SPT2; DA	Significant	Significant	Slight
B21-001	BHT1; SPT1; SPT2; DA	Significant	Significant	Slight
B21-002	BHT2; SPT1; DA	Significant	Significant	Moderate
B21-003	BHT2; SPT1; DA	Profound	Profound	Significant
B21-004	BHT1	Moderate	Slight	Imperceptible
B21-005	BHT1;SPT1; LTT1	Profound	Profound	Significant
B22-001	BHT1; SPT1; DA	Profound	Profound	Significant
B22-002	BHT1; SPT1; DA	Moderate	Moderate	Slight
B22-003	BHT1; SPT1; DA	Slight	Slight	Imperceptible
B22-004	BHT1; SPT1; DA	Imperceptible	Imperceptible	Imperceptible
B22-005	N/A	No Impact	No Impact	No Impact
B22-006	BHT1; DA	Significant	Significant	Slight
B23-001	N/A	No Impact	No Impact	No Impact
B24-001	Not used	N/A	N/A	N/A
B24-002	BHT1; SPT1	Significant	Profound	Significant
B24-003	BHT1; SPT1; SPT2	Significant	Profound	Significant
B24-004	BHT1; SPT2	Moderate	Moderate	Slight
B24-005	BHT1; SPT2	Slight	Slight	Imperceptible
B24-006	BHT1; SPT2	Moderate	Moderate	Slight
B24-007	BHT1; SPT1; SPT2	Significant	Significant	Moderate
B24-008	BHT1	Moderate	Slight	Slight
B24-009	BHT1	Imperceptible	Imperceptible	Imperceptible
B24-010	BHT1	Slight	Slight	Imperceptible
B24-011	BHT1	Significant	Profound	Significant
B24-012	N/A	No Impact	No Impact	No Impact
B24-013	N/A	No Impact	No Impact	No Impact
B24-014	BHT1	Slight	Slight	Slight
B24-015	BHT1	Slight	Slight	Slight
B24-016	BHT1	Slight	Slight	Slight
B24-017	BHT1	Slight	Slight	Slight
B24-018	BHT1	Slight	Slight	Slight
B24-019	N/A	Slight	Slight	Slight
B24-020	N/A	Slight	Slight	Slight
B24-021	BHT1	Imperceptible	Imperceptible	Imperceptible

Property	Mitigation	Construction	Pre Establishment	Post Establishment
B24-022	BHT1	Imperceptible	Imperceptible	Imperceptible
B24-023	BHT1	Imperceptible	Imperceptible	Imperceptible
B24-024	N/A	No Impact	No Impact	No Impact
B24-025	N/A	No Impact	No Impact	No Impact
B24-GY Graveyard	BHT1	Significant	Significant	Moderate
B24-Mon Monument	BHT1	Moderate	Moderate	Slight

Table 11.1C App-C: Section

Property	Mitigation	Construction	Pre Establishment	Post Establishment
C30-001	BHT1; SPT1; LTT1	Profound	Profound	Significant
C31-001	BHT1; SPT1; LTT3	Moderate	Moderate	Imperceptible
C31-002	BHT1; SPT1; LTT3	Moderate	Moderate	Imperceptible
C32-003	BHT1	Imperceptible	Imperceptible	Imperceptible
C32-004	BHT1	Imperceptible	Imperceptible	Imperceptible
C32-005	BHT1	Imperceptible	Imperceptible	Imperceptible
C32-006	BHT1	Imperceptible	Imperceptible	Imperceptible
C32-007	BHT1; SPT1	Imperceptible	Imperceptible	Imperceptible
C32-008	BHT1; SPT1	Imperceptible	Imperceptible	Imperceptible
C32-009	BHT1; SPT1	Moderate	Moderate	Slight
C32-010	BHT1; SPT1; LTT3	Imperceptible	Imperceptible	Imperceptible
C32-011	BHT1; SPT1; LTT2 Semi-derelict cottage	Profound	Profound	Profound
C33-001	BHT1; SPT1; LTT3	Significant	Moderate	Slight
C33-002	BHT1; SPT1	Significant	Moderate	Slight
C33-003	BHT1; SPT1	Profound	Profound	Profound
C33-004	SPT1	Profound	Profound	Profound
C33-005	BHT1; SPT1	Profound	Profound	Profound
C33-006	BHT1; SPT1	Profound	Profound	Significant
C33-007	BHT1; SPT1	Profound	Profound	Significant
C33-008	BHT1; SPT1	Profound	Profound	Significant
C34-001	N/A	No Impact	No Impact	No Impact
C34-002	N/A	No Impact	No Impact	No Impact
C34-003	N/A	No Impact	No Impact	No Impact
C34-004	N/A	No Impact	No Impact	No Impact
C34-005	N/A	No Impact	No Impact	No Impact
C34-006	N/A	No Impact	No Impact	No Impact
C34-007	BHT1	Imperceptible	Imperceptible	Imperceptible

Property	Mitigation	Construction	Pre Establishment	Post Establishment
C34-008	BHT1; SPT1; LTT2	Slight	Slight	Slight
C34-009	BHT1; LTT1	Slight	Imperceptible	Imperceptible
C34-010	N/A	No Impact	No Impact	No Impact
C35-001	CS; BHT1;SPT1; LTT1	Profound	Profound	Profound
C35-002	BHT1;SPT1; LTT1	Profound	Significant	Significant
C35-003	BHT1; SPT1; LTT1	Significant	Moderate	Slight
C35-004	BHT1; SPT2; LTT1	Significant	Moderate	Slight
C35-005	BHT1; SPT2; LTT1	Significant	Moderate	Slight
C35-006	BHT1; SPT1; LTT1	Moderate	Moderate	Slight
C35-007	BHT1; SPT1; LTT1	Moderate	Moderate	Slight
C35-008	BHT1; SPT2	Significant	Moderate	Slight
C35-009	BHT1; SPT2	Significant	Moderate	Slight
C35-010	BHT1; SPT2	Significant	Moderate	Slight
C35-011	BHT1; SPT2	Significant	Moderate	Slight
C35-012	BHT1; LTT1	Significant	Moderate	Slight
C35-013	BHT1; LTT1	Significant	Moderate	Slight
C35-014	Acquired	N/A	N/A	N/A
C36-001	BHT1; LTT1	Significant	Moderate	Slight
C36-002	BHT1; BHT2; LTT1	Significant	Significant	Significant
C36-003	BHT1; BHT2; LTT1	Significant	Significant	Moderate
C36-004	N/A	No Impact	No Impact	No Impact
C37-001	BHT2	Significant	Significant	Moderate
C37-002	BHT2	Significant	Significant	Moderate
C37-003	BHT2	Significant	Significant	Moderate
C37-004	BHT2; LTT1	Significant	Significant	Moderate
C38-001	BHT1; LTT2	Moderate	Moderate	Slight
C38-002	BHT1; LTT2; LTT3	Imperceptible	Imperceptible	Imperceptible
C38-003	BHT1; LTT2; LTT3	Imperceptible	Imperceptible	Imperceptible
C38-004	BHT1; LTT2; LTT3	Imperceptible	Imperceptible	Imperceptible
C38-005	BHT2; LTT1; LTT3	Imperceptible	Imperceptible	Imperceptible
C38-006	Old Farmhouse BHT2; LTT2	Significant	Significant	Moderate
C39-001	BHT2; LTT1; LTT3	Slight	Slight	Imperceptible
C39-002	BHT2; LTT1; LTT3	Imperceptible	Imperceptible	Imperceptible
C39-003	BHT2; LTT1; LTT3	Imperceptible	Imperceptible	Imperceptible
C39-004	BHT1	Imperceptible	Imperceptible	Imperceptible
C39-005	BHT1	Imperceptible	Imperceptible	Imperceptible

Property	Mitigation	Construction	Pre Establishment	Post Establishment
C39-006	BHT1	Imperceptible	Imperceptible	Imperceptible
C39-007	BHT1	Imperceptible	Imperceptible	Imperceptible
C39-008	BHT1	Slight	Slight	Imperceptible
C39-009	BHT1	Slight	Slight	Imperceptible
C39-010	Not Used			
C39-011	BHT2; LTT2	Significant	Significant	Significant
C40-001	BHT1; SPT1; LTT1	Profound	Profound	Profound
C40-002	BHT1	Moderate	Slight	Imperceptible
C40-003	BHT1	Moderate	Slight	Imperceptible
C40-004	BHT1	Moderate	Slight	Imperceptible
C40-005	BHT1	Moderate	Slight	Imperceptible
C40-006	BHT1	Moderate	Slight	Imperceptible
C40-007	BHT1	Slight	Slight	Imperceptible
C40-008	BHT1	Slight	Imperceptible	Imperceptible
C40-009	BHT1	Slight	Imperceptible	Imperceptible
C40-010	BHT1	Slight	Imperceptible	Imperceptible
C40-011	BHT1	Slight	Slight	Imperceptible
C40-011	BHT1	Slight	Slight	Imperceptible
C40-012	BHT1	Slight	Slight	Imperceptible
C40-013	BHT1	Slight	Slight	Imperceptible
C40-014	BHT1	Moderate	Slight	Imperceptible
C40-015	BHT1; LTT1	Significant	Significant	Moderate
C40-016	BHT1; LTT1	Significant	Significant	Moderate
C40-017	BHT1; SPT1; LTT1	Significant	Significant	Moderate
C40-018	BHT1; SPT1; LTT1	Moderate	Slight	Imperceptible
C40-019	BHT1; SPT1; LTT1	Moderate	Slight	Imperceptible
C40-020	BHT1	Slight	Imperceptible	Imperceptible
C40-021	BHT1	Slight	Imperceptible	Imperceptible
C40-022	BHT1	Slight	Imperceptible	Imperceptible
C40-023	BHT1	Imperceptible	Imperceptible	Imperceptible
C40-024	BHT1	Imperceptible	Imperceptible	Imperceptible

Table 11.1D App-D: Section D

Property	Mitigation	Construction	Pre Establishment	Post Establishment
D50-001	LTT1	Significant	Significant	Moderate
D50-002	LTT1	Significant	Significant	Moderate
D50-003	Acquired	N/A	N/A	N/A
D50-004	BHT2; LTT1	Significant	Significant	Slight
D50-005	BHT2; SPT1	Moderate	Moderate	Slight
D50-006	BHT2; SPT1	Moderate	Moderate	Slight

Property	Mitigation	Construction	Pre Establishment	Post Establishment
D50-007	BHT2; SPT1	Moderate	Moderate	Slight
D50-008	BHT1	Slight	Slight	Imperceptible
D50-009	BHT1	Slight	Slight	Imperceptible
D50-010	N/A	No Impact	No Impact	No Impact
D50-011	N/A	No Impact	No Impact	No Impact
D50-012	N/A	No Impact	No Impact	No Impact
D50-013	N/A	No Impact	No Impact	No Impact
D50-014	N/A	No Impact	No Impact	No Impact
D50-015	N/A	No Impact	No Impact	No Impact
D50-016	N/A	No Impact	No Impact	No Impact
D50-017	N/A	No Impact	No Impact	No Impact
D50-018	N/A	No Impact	No Impact	No Impact
D50-019	N/A	No Impact	No Impact	No Impact
D50-020	N/A	No Impact	No Impact	No Impact
D50-021	BHT1; SPT2	Slight	Slight	Imperceptible
D50-022	BHT1; SPT2	Slight	Slight	Imperceptible
D50-023	BHT1; SPT1; SPT2	Slight	Slight	Imperceptible
D50-024	BHT1; SPT1; LTT1	Moderate	Moderate	Slight
D50-025	SPT2; LTT1	Slight	Slight	Slight
D50-026	N/A	Slight	Slight	Imperceptible
D50-027	N/A	Slight	Imperceptible	Imperceptible
D50-028	N/A	Slight	Imperceptible	Imperceptible
D50-029	N/A	Slight	Imperceptible	Imperceptible
D50-030	N/A	Slight	Imperceptible	Imperceptible
D50-031	RA; SPT2	Moderate	Moderate	Slight
D50-032	RA; SPT2	Moderate	Moderate	Slight
D50-033	N/A	Slight	Slight	Imperceptible
D50-034	N/A	Imperceptible	Imperceptible	Imperceptible
D50-035	N/A	Imperceptible	Imperceptible	Imperceptible
D50-036	N/A	Imperceptible	Imperceptible	Imperceptible
D50-037	N/A	Imperceptible	Imperceptible	Imperceptible
D50-038	N/A	Imperceptible	Imperceptible	Imperceptible
D50-039	N/A	Imperceptible	Imperceptible	Imperceptible
D50-040	N/A	Slight	Imperceptible	Imperceptible
D50-041	BHT1; SPT2	Moderate	Imperceptible	Imperceptible
D50-042	BHT1; SPT2	Slight	Imperceptible	Imperceptible
D50-043	N/A	Imperceptible	Imperceptible	Imperceptible
D50-0GY Graveyard	BHT1; SPT2	Moderate	Slight	Imperceptible

Property	Mitigation	Construction	Pre Establishment	Post Establishment
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Property	Mitigation	Construction	Pre Establishment	Post Establishment
D51-001	CS; BHT1; SPT1; LTT1	Significant	Significant	Moderate
D51-002	BHT1; SPT1; LTT1	Moderate	Moderate	Slight
D51-SPH Strokestown Park Ho.	BHT1; SPT2; LTT1	Slight	Slight	Imperceptible
D52-001	CS; BHT1; SPT1; LTT1	Profound	Profound	Profound
D52-002	CS; BHT1; SPT1; LTT1	Profound	Profound	Significant
D52-003	CS; BHT1; SPT1; LTT1	Profound	Profound	Significant
D52-004	SPT1; LTT1	Significant	Significant	Moderate
D52-005	SPT1; LTT1	Significant	Significant	Moderate
D52-006	BHT2; SPT1; LTT2	Moderate	Moderate	Slight
D52-007	SPT1; LTT1	Profound	Profound	Profound
D52-GC Golf Club	BHT2; SPT1; LTT2	Slight	Slight	Imperceptible
D53-001 Warehouse / Office	BHT2; SPT1; LTT1; LTT2	Significant	Significant	Significant
D53-002	BHT2; SPT1; LTT1	Significant	Significant	Significant
D53-003	BHT2; SPT1; LTT1	Slight	Slight	Imperceptible
D53-004	BHT2; SPT1; LTT1	Slight	Slight	Imperceptible
D53-005	N/A	Imperceptible	Imperceptible	Imperceptible
D53-006	N/A	Imperceptible	Imperceptible	Imperceptible
D53-007	N/A	Imperceptible	Imperceptible	Imperceptible
D53-008	N/A	Imperceptible	Imperceptible	Imperceptible
D53-009	N/A	Imperceptible	Imperceptible	Imperceptible
D53-010	BHT1; SPT1; LTT1	Significant	Significant	Moderate
D53-011	BHT2; SPT1; LTT1; LTT2	Imperceptible	Imperceptible	Imperceptible
D53-012	BHT2; SPT1; LTT1; LTT2	Imperceptible	Imperceptible	Imperceptible
D53-013	LTT1	Slight	Imperceptible	Imperceptible
D53-014	LTT1	Slight	Imperceptible	Imperceptible
D54-001	BHT2	Slight	Imperceptible	Imperceptible
D54-002	BHT2	Slight	Imperceptible	Imperceptible
D54-003	N/A	Imperceptible	Imperceptible	Imperceptible

Table 11.2 App: Section Summaries

Section A	Construction	Pre-establishment	Post-establishment
Imperceptible	8	15	37
Slight	9	21	10
Moderate	19	12	4
Significant	14	4	1
Profound	2	0	0
No Impact	11	11	11
Acquired	1	1	1
Totals	64	64	64

Section B	Construction	Pre-establishment	Post-establishment
Imperceptible	8	17	34
Slight	26	24	33
Moderate	14	20	10
Significant	31	18	8
Profound	10	10	4
No Impact	19	19	19
Acquired	1	1	1
Totals	109	109	109

Section C	Construction	Pre-establishment	Post-establishment
Imperceptible	20	27	45
Slight	16	17	17
Moderate	14	18	9
Significant	23	12	7
Profound	11	10	6
No Impact	8	8	8
Acquired	1	1	1
Totals	93	93	93

Section D	Construction	Pre-establishment	Post-establishment
Imperceptible	15	26	38
Slight	22	13	10
Moderate	10	8	6
Significant	9	9	4
Profound	4	4	2
No Impact	11	11	11
Acquired	1	1	1
Totals	72	72	72