

## Contents

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## 12 Landscape and Visual

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### 12.1 Introduction

This chapter of the EIAR consists of an appraisal of the proposed N6 Galway City Ring Road, hereafter referred to as the proposed road development, under the heading of landscape and visual aspects.

This chapter initially sets out the methodology followed in carrying out the appraisal (**Section 12.2**), describes the existing landscape and visual environment (**Section 12.3**), and summarises the main characteristics of the proposed road development that are of relevance to landscape and visual aspects (**Section 12.4**). The evaluation of impacts of the proposed road development on the landscape and visual environment are described (**Section 12.5**), measures are proposed to mitigate these impacts (**Section 12.6**), and residual impacts are described (**Section 12.7**). The chapter concludes with a summary (**Section 12.8**) and reference section (**Section 12.9**).

This chapter has utilised the information gathered during the constraints and route selections studies for the proposed road development to inform the landscape and visual impact appraisal. **Sections 4.7, 6.5.5 and 7.6.5** of the **Route Selection Report** considered the landscape and visual constraints within the scheme study area and compared the potential landscape and visual impacts of the proposed route corridors respectively. These assessments and sections of the Route Selection Report contributed to the design of the proposed road development which this chapter assesses.

### 12.2 Methodology

#### 12.2.1 Introduction

Landscape has two separate but closely related aspects. The first is **visual impact**, *i.e.* the extent to which new development can be seen in the landscape. The second is **impact on landscape character**, *i.e.* effects of new development on the fabric or structure of the landscape.

The visual impact assessment considers visual receptors along the proposed road development. The majority of receptors involve residential properties, however, cultural and heritage properties, community facilities, *e.g.* churches, amenities and recreational facilities, open spaces, walkways, and other viewers within the environment are also considered.

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 uses and built environment and their interaction to create specific patterns that are distinctive to particular localities. Therefore, aspects such as landscape character and landscape designations are also considered in the description of the receiving landscape.

### 12.2.2 Legislation and Guidelines

The methodology has regard to Sections 50(2) and 50(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
- EPA: Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports, 2017
- EPA: Draft Advice Notes for Preparing Environmental Impact Statements, Consultation 2015
- LI/IEMA: Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, 2013
- NRA: Environmental Impact Assessment of National Road Schemes - A Practical Guide
- NRA: A Guide to Landscape Treatments for National Road Schemes in Ireland
- NRA: Guidelines on the Implementation of Landscape Treatments on National Road Schemes in Ireland
- NRA: Guidelines for Protection and Preservation of Trees, Hedgerows and Scrub Prior to, during and Post Construction of National Road Schemes
- NRA: Design Manual for Roads and Bridges

### 12.2.3 Data Sources and Consultations

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 specialists in the project team in terms of the design for the proposed road development and with particular respect to aspects such as Archaeological, Architectural and Cultural Heritage, Biodiversity, Noise and Vibration, Human Beings and Construction Activities.

### 12.2.4 Scheme Study area and Baseline Data Collection

The landscape setting for the proposed road development covers a wide corridor comprising a part rural, part peri-urban and part suburban landscape extending from west of Bearna Village around the north and east of Galway City to a tie-in with the existing N6 between Dougishka and Coolagh-Briarhill.

Baseline data collection involved reviewing desktop information including statutory planning documents, landscape character assessments and other landscape and visual related publications and sources in order to identify likely significant and sensitive landscape and visual receptors. The findings of the desktop data collection stage was augmented, refined and verified during a series of survey visits, undertaken at different times during the year, to the landscape corridor of the proposed road development. This allowed for identification of visual receptors,

landscape features, vegetation, and for analysis of local landscape and visual character.

### 12.2.5 Impact Assessment Methodology

The significance criteria as set out in the EPA Guidelines have been used for the purpose of this assessment, see **Table 12.1** Landscape and Visual Impact Assessment Criteria. The criteria have been modified to take account of the current Draft EPA Guidelines (2017) and other references used in the assessment methodology.

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. Therefore, landscape assessments take account of the receiving environment, its character and features, as well as landscape planning designations and listings.

Views from properties are all considered on an equal basis without varying degrees of significance or sensitivity. All properties located within 200m of the centreline of the proposed road development are considered, together with any property outside of 200m, which for reasons of openness, or otherwise, are considered to have potential for significant impact. For the most part, properties outside 200m of the centreline of the proposed road development that have no potential for impact have not been included in the assessment. While these properties may have sight of the proposed road development, due to a combination of distance, context, elevation or intervening topography, the proposed road development comprises a small element of the overall panorama and will not give rise to an adverse impact. Visual impact from properties other than residences is also considered and as such, schools, community facilities and recreational and other amenities are also included.

Visual assessments for properties are tabulated in the Visual Impact Schedule (VIS) Tables in **Appendix A.12.1** and are illustrated on the Landscape and Visual figures (Refer to **Figures 12.1.01 to 12.1.14**). The properties are numbered using sequential chainage-based references in approximate geographical order from west to east along the proposed road development.

Visual impacts are assessed at three key stages:

**Construction Stage:** considers the period of active construction of the proposed road development up to completion of the works.

**Pre-establishment Stage:** considers the period of initial operation of the proposed road development where new landscape measures are unlikely to provide effective mitigation. All works, including new boundaries, barriers, screens, seeding, *etc.* are complete and while planting will be in place, it would require a period of time to establish as effective mitigation. The impact is assessed in the year the proposed road development would open to traffic.

**Post-establishment Stage:** considers the impact after such time as proposed planting has established and is providing effective landscape and visual mitigation.

This usually requires a period of five to seven years after planting. The impact is assessed c.15 years after the proposed road development would open to traffic.

**Table 12.1: Classification of Significance of Impacts**

		Existing Environment Significance / Sensitivity			
		High	Medium	Low	Negligible
Description of Impact Character / Magnitude / Duration / Probability/ Consequences	High	Profound	Very Significant	Significant / Moderate	Moderate / Slight
	Medium	Very Significant / Significant	Significant / Moderate	Moderate	Slight / Not Significant
	Low	Significant / Moderate	Moderate / Slight	Slight / Not Significant	Not Significant / Imperceptible
	Negligible	Slight / Not Significant	Not Significant	Not Significant / Imperceptible	Imperceptible

These impacts<sup>1</sup>, which in quality may be positive, neutral or negative/adverse, are described as follows:

- **Imperceptible:** An effect capable of measurement but without noticeable consequences
- **Not significant:** An effect which causes noticeable changes in the character of the environment but without noticeable consequences
- **Slight:** An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
- **Moderate:** An effect that alters the character of the environment in a manner that is consistent with existing and emerging trends
- **Significant:** An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment
- **Very Significant:** An effect which, by its character, magnitude, duration or intensity significantly alters the majority of a sensitive aspect of the environment
- **Profound:** An effect which obliterates sensitive characteristics

In terms of **duration**, effects are considered as follows:

- **Brief:** lasting up to one day
- **Temporary:** lasting up to one year
- **Short-term:** lasting one to seven years
- **Medium-term:** lasting seven to fifteen years

<sup>1</sup> It should be noted that throughout this chapter of the EIAR, the terms impact and effect are interchangeable and should be read to have the same meaning.

- **Long-term:** lasting fifteen to sixty years
- **Permanent:** lasting over sixty years

Further aspects including do-nothing, worse-case, cumulative, interactive, indirect and residual impacts are also considered, where appropriate, in the assessment.

## 12.3 Receiving Environment

### 12.3.1 Landscape Context and Character

#### 12.3.1.1 General

Galway City is situated on the River Corrib, a short c.6km river linking Lough Corrib in the north to Galway Bay in the south. The historic city and the city core is centred on the southern extent (mouth) of the river but the city has also extended significantly both eastwards towards Oranmore and westwards towards Bearna. While city expansion to the north has been constrained by Lough Corrib, development has extended along the corridors of the various national, regional and local roads that radiate out west, northwest, northeast and east from the city centre.

The landscape along the proposed road development is divided into two distinct sections by the River Corrib at Dangan/Menlough. The west side of the river valley (along the existing N59 Moycullen Road) is also the boundary of a clear geographical divide between the underlying granite geology to the west and limestone to the east.

In general, the landscape to the west of the river is characterised by a pattern of irregular shaped, undulating enclosed fields delineated by drystone granite walls. Stretches of Blanket bog are also common and many fields, particularly in the vicinity of Bearna, are increasingly overgrown with scrub and bramble.

The landscape to the east is characterised by a pattern of larger, usually rectangular fields of improved grassland. The notable exceptions to this are the overgrown and wooded demesne landscape of Menlo Castle, the areas of bare Limestone pavement with surrounding dense hazel scrub, and the presence of large limestone quarries at Coolough (Lackagh Quarry) and at Ballygarraun/Pollkeen (Roadstone Quarry, off the N83 at Twomileditch).

The landscape within the city and north along the wider River Corrib corridor is low-lying typically being lower than 30m above ordnance datum (OD). Within the extended city, the landscape rises gradually to the east to circa 70m OD at Briarhill (Dougishka) where the local high point is topped by a reservoir. To the west of the N6/Bóthar na dTreabh, Dougishka includes established residential estates (Garrán Ard, Maigh Rua, Garran Íseal, Sraith Fhada, An Sean Bhaile) – many of which openly overlook the existing N6/Bóthar na dTreabh. To the east the landscape is open, rural and increasingly flat with limestone walls. The village of Coolagh-Briarhill lies to the immediate north of the existing N6 approach to the city.

To the northeast, the landscape undulates over shallow valleys and low ridges towards Lough Corrib. The ridges at Ballygarraun/Pollkeen and

Ballindooley/Coolough are topped with limestone quarries and exposed limestone pavement and limestone walls are also a feature of the wider area from Ballindooley through to Menlough. Much of this area is covered with hazel scrub with limited tree cover. The villages of Castlegar and Coolough-Menlough retain a distinctive village character despite the increasing expansion of the city into their immediate context.

The ruin of Menlo Castle and its associated grounds provide an attractive landmark feature on the east side of the river close to where it leaves Lough Corrib. Menlough Village, also located on the east bank of the river, has an attractive and historic network of narrow rural roads with a dense network of individual and clustered residential properties.

North of the city the River Corrib forms a broad and attractive watercourse set within a landscape mosaic of grassland and marginal grassland, sports areas (*e.g.* National University of Galway (NUIG) Sports Campus and Glenlo Abbey Golf Course) and areas of wetland/marsh (especially at the northern reaches of the river approaching Lough Corrib) scrub and woodland plantings. The entire valley is low-lying and the immediate river valley is below 10m OD.

West of the River Corrib, the landscape rises to the northwest of the city where a local high point at Tonabrocky (111m OD) is marked with telecommunication masts. From Tonabrocky the landscape falls gradually south and southwest to the coastal corridor extending either side of Bearna Village.

A large lake, Lough Inch, is located circa 1.5km northwest of Bearna Village. Large areas of bogs/peatlands are located west/northwest of Bearna, including around Lough Inch and at Tonabrocky Bog further north.

Extensive residential development is a particular feature along the R336 Coast Road and along other local roads in the wider area around Bearna Village.

Extensive residential, community and mixed developments is also a feature along the N59 Moycullen Road corridor extending northwest from the city. This includes developments such as Dangan Business Park, the NUIG Sports Campus and the hotel and golf course resort at Glenlo Abbey.

### 12.3.1.2 Landscape along Proposed Road Development

The overall length of the proposed road development is c.17.54km and includes for other new and re-aligned link roads and realigned sections of existing roads, as well as for over 2.2km of N59 Link Road from Bushypark on the existing N9 Moycullen Road in the north, to the Ragoon Road in the south. Refer to **Chapter 5, Description of Proposed Road Development** for further details.

The route of the proposed road development skirts the peri-urban landscape that lies between the developed western, northern and eastern suburbs of the city and the surrounding rural hinterland. Many sections of the route of the proposed road development are overgrown with blackthorn, gorse and hazel scrub and bramble.

The landscape along the initial western section of the proposed road development is a rugged lowland landscape of small fields, marginal grassland, extensive and

increasing areas of scrub, granite stone walls in a variety of condition, and residential development prominently located along the main and local roads throughout.

To the northwest the route of the proposed road development passes through Cappagh, Mincloon, Letteragh and Barnacranny on the exposed lower southern slopes of ground that rises gradually towards Tonabrocky Hill.

To the north of the city, the route of the proposed road development leaves high ground at Dangan, which includes extensive residential and recreational/sports development, and crosses the wide lowland valley of the River Corrib before moving onto gradually rising ground east of Menlo Castle. The ivy-covered castle ruin, located north of the proposed crossing location is a prominent landmark feature along the river corridor.

To the northeast the route of the proposed road development crosses the rolling drumlin and valley landscape between Coolough (and Lackagh Quarry), Ballinfoile and Castlegar. The route passes immediately south of Ballindooley Lough and through a residential area at Castlegar. The route is north of the defined settlement area of Castlegar Village, as identified on the Land Use Zoning and Specific Objectives Map of Galway City Development Plan 2017-2023. Residential development is a prominent feature in the existing landscape both where the proposed road development crosses the N84 Headford Road at Ballindooley and passes through Castlegar.

To the east of the city, the route of the proposed road development passes to the immediate east of Galway Racecourse before turning south and east around the village of Coolagh-Briarhill to tie-in to the existing N6 and the R446 Bother na dTreabh south of the village and east of Dougishka.

The main landscape features along the proposed road development include the diversity of ecological/landscape and cultural areas, the mosaic of open grassland, limestone pavement, marsh, wetland, river corridor/lake edge, scrub/and occasional tree plantings; the presence of significant recreational and sports grounds (including Galway Racecourse and NUIG Sports Campus) and other open spaces; and the overall high quality of the landscape – especially along the River Corrib corridor and east through to Ballindooley. These features add to overall diversity and interest of the landscape as well as to its sensitivity and significance.

As noted while there are extensive areas of scrub, including gorse and blackthorn to the west and hazel and blackthorn to the northeast, the plantings are generally low and the landscape is often visually open and tree and woodland planting is notably limited along the proposed road development. The presence of mature trees and blocks of trees is most notable within the River Corrib valley, including around residential and sports facilities on the west bank of the river and on rising ground east of Menlo Castle on the east bank.

Given the city edge location, the presence of residential properties is a notable and prominent visual feature along the entirety of the route of the proposed road development. In addition, there are a variety of community and social amenities as well as rural villages located close to the proposed road development. Visual significance also applies to features of archaeological, architectural and cultural



heritage, *e.g.* Menlo Castle, Bushypark House, *etc.*, as described under **Chapter 13, Archaeological, Architectural and Cultural Heritage**.

### 12.3.1.3 Landscape Character Assessment

The Landscape and Landscape Character Assessment for County Galway<sup>2</sup> (2003) sub-divides the county into 25 large landscape character areas (LCAs). Landscape values and sensitivity ratings have also been applied to each of the LCAs. Only five of the LCAs (3, 5, 9, 11 & 12) pertain to the route of the proposed road development (refer to **Plate 12.1** and **Table 12.2**).

The western portion of the proposed road development is located within:

- Landscape Character Area 9: *Inverin to Galway City Coastline, which covers the southwestern portion of the study area in and around Bearna and City Coastline*

Thereafter continuing clockwise, the proposed route development passes through the edge of the following LCAs:

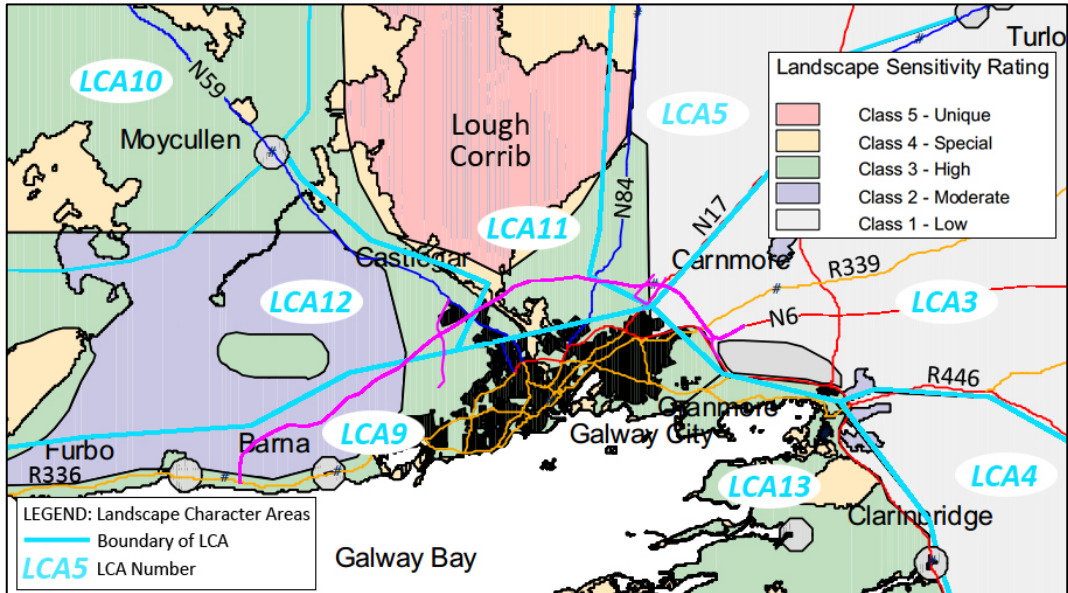
- LCA 12: *South foothills of east Connemara Mountains (west of Salthill to Rossaveel)*
- LCA 11: *Lough Corrib and environs*
- LCA 5: *Northeast Galway (Tuam environs)*
- LCA 3: *East Central Galway (Athenry, Ballinasloe to Portumna)*

The Lough Corrib LCA (11), which covers the central section of the proposed road development (north of the city), is the most sensitive, being described as ‘*wide dramatic expanse of water including many islands supporting deciduous woodland. The land ... surrounding the southern section is flat, open grassland. The landscape of the Lough and its surrounds is highly scenic and includes many facilities for visitors.*’ (Section 2.13 of Landscape and Landscape Character Assessment for County Galway).

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<sup>2</sup> Included as Environmental Support Document to Galway County Development Plan 2015-2021 (<http://www.galway.ie/en/services/planning/developmentplansandpolicy/galwaycountydevelopmentplan2015-2021/>)

**Plate 12.1: LCAs and Sensitivity Ratings with proposed road development indicated in Pink** (source: Extract of Figure 3 of Landscape and Landscape Character Assessment of Galway County – annotated to show LCAs, LCA Numbers and alignment of proposed road development (indicated in pink))



Each of these county-wide LCAs represents a broad landscape area, and as such in the course of carrying out this assessment, the landscape along the route of the proposed road development has been further sub-divided into Local Landscape Character Units (LLCUs), which highlight more immediate and distinctive landscapes characteristics. The LLCUs are described in **Table 12.2** and illustrated on **Figures 12.2.01** and **12.2.02** Landscape Character.

While somewhat distant from the immediate line of the proposed road development, both Lough Corrib and Galway Bay are considered waters of national tourism significance<sup>3</sup>.

<sup>3</sup> Determination of Waters of National Tourism Significance and Associated Water Quality Status, Fáilte Ireland (2009)

**Table 12.2: Landscape Character Areas (LCAs) and Local Landscape Character Units (LLCUs)**

<b>LCA, Approx. Chainage &amp; Length</b>	<b>Landscape Character Area (LCA) Description, Value and Sensitivity</b>	<b>Local Landscape Character Units (LLCU)</b>	<b>LLCU Landscape Description, Value and Sensitivity</b>
<b>LCA 9</b>  Ch. 0+000 to Ch. 7+200  (c.7.2km)	<b>Inverin to Galway City Coastline:</b> The coast is flat, comprising rocks and sand merging with natural grassland, towards the R336. The coast line commands striking views of County Clare and the Aran Islands. Further inland from the R336 route, there are residential and some light industrial developments which have lowered the scenic value in this area.  <b>High Landscape Value and High Landscape Sensitivity with parallel strip of Special Sensitivity.</b>	<b>Coastal Fringe – Bearna:</b> Ch. 0+000 to Ch. 0+250 (c.0.25km)	Open grassland with sea views and granite stone walls. Increasingly coarse-grained marginal grassland with extensive scrub north of the R336.  <b>Moderate Value and High Sensitivity north of R336. High Value and Special Sensitivity south of R336.</b>
		<b>Undulating Western Lowlands:</b> Ch. 0+250 to Ch. 6+300 (c.6.05km)	Marginal coarse grassland/peatland with extensive scrub and overgrown granite stone walls.  <b>Moderate Value and Moderate Sensitivity.</b>
<b>LCA 12</b>  Ch. 7+200 to Ch. 7+700  (c.0.5km)	<b>South foothills of east Connemara Mountains:</b> The landscape of the foothills is undulating heath and scrubland with regular rocky outcrops. The area is generally undeveloped and have expansive views in a southerly direction across Galway Bay towards County Clare.  <b>Medium Landscape Value and approximately half High Landscape Sensitivity and half Special Sensitivity.</b>	<b>Open Western Uplands:</b> Ch. 6+300 to Ch. 8+000 (c.1.7km)	Increasingly open and elevated landscape on rising slopes. Some granite stone walls and limited hedgerows.  <b>High Value and High Sensitivity.</b>
<b>LCA 11</b>  Ch. 7+700 to Ch. 13+100  (c.5.4km)	<b>Lough Corrib and Environs:</b> Lough Corrib is a wide, dramatic expanse of water including many islands supporting deciduous woodland. The land around the northern part of the Lough is undulating heath bog and coniferous forestry whereas the land surrounding the southern section	<b>West Galway Suburbs:</b> Ch. 8+000 to Ch. 8+800 (c.0.8km)	Elevated lands dominated by residential (and some other) development.  <b>Moderate Value and Moderate Sensitivity.</b>
		<b>Institutional City Lands:</b> Ch. 8+800 to Ch. 9+100 (c.0.3km)	Amenity, recreational and sports-related lands – with open public access.

LCA, Approx. Chainage & Length	Landscape Character Area (LCA) Description, Value and Sensitivity	Local Landscape Character Units (LLCU)	LLCU Landscape Description, Value and Sensitivity
	<p>is flat, open grassland. The landscape of the Lough and its surrounds is highly scenic and includes many facilities for visitors.</p> <p><b>Outstanding Landscape Value and Unique Landscape Sensitivity with pockets of High and Special Sensitivity.</b></p>	<p><b>Corrib River Valley:</b> Ch. 9+100 to Ch. 9+900 (c.0.8km)</p> <p><b>Limestone Lowlands:</b> Ch. 9+900 to Ch. 11+200 (c.1.3km)</p>	<p><b>High Value and Special Sensitivity.</b></p> <p>Broad lowland river with large expanse of slow-moving water fringed by mosaic of wetland, amenity, grassland and woodland landscapes. Accentuated by presence of significant castle ruin.</p> <p><b>High Value and Unique Sensitivity.</b></p> <p>Scrub dominated areas of limestone pavement, grassland and stone walls.</p> <p><b>High Value and Special Sensitivity.</b></p>
<p><b>LCA 5</b></p> <p>Ch.13+100 to Ch.14+200 (1.1km)</p>	<p><b>Northeast Galway:</b> Landscape is flat, fertile pastoral land bound with field hedgerows. There is little or no coniferous forestry or deciduous woodland. There are no areas of particular scenic value.</p> <p><b>Low Landscape Value and Low Landscape Sensitivity with pockets of Moderate Sensitivity.</b></p>	<p><b>Undulating Limestone Lowlands:</b> Ch. 11+200 to Ch. 14+100 (c.2.9km)</p>	<p>Prominent rolling drumlin ridges and valley grassland landscape with hedgerows. Large limestone rock quarries on open ridges and lough with surrounding wetlands in valley.</p> <p><b>High Value and High Sensitivity.</b></p>
<p><b>LCA 3</b></p> <p>Ch.14+200 to Ch.17+540 (3.34km)</p>	<p><b>East Central Galway:</b> The landscape is flat, coarse grassland, occasional clumps of coniferous forestry between 1–3km<sup>2</sup> in size, fields defined principally by stone walls. There are no areas of particular scenic value although the stone walls are quite distinct.</p>	<p><b>East Galway Suburbs:</b> Ch. 14+100 to Ch. 14+500 (c.0.4km) &amp; Ch. 15+400 to Ch. 16+000 (c.0.6km)</p> <p><b>Galway Racecourse:</b> Ch. 14+500 to Ch. 15+400 (c.0.9km)</p>	<p>Lands dominated by residential and business park development.</p> <p><b>Moderate Value and Moderate Sensitivity.</b></p> <p>Flat open landscape and significant city and region amenity.</p> <p><b>High Value and Special Sensitivity.</b></p>

<b>LCA, Approx. Chainage &amp; Length</b>	<b>Landscape Character Area (LCA) Description, Value and Sensitivity</b>	<b>Local Landscape Character Units (LLCU)</b>	<b>LLCU Landscape Description, Value and Sensitivity</b>
	<b>Low Landscape Value and Low Landscape Sensitivity with pockets of Moderate Sensitivity.</b>	<b>Open Limestone Lowlands:</b> Ch. 16+000 to Ch. 17+540 (c.1.54km).	Increasingly flat open grassland landscape with limestone walls and occasional mature trees.  <b>High Value and Moderate Sensitivity.</b>

### 12.3.1.4 Galway City Development Plan 2017-2023

The provision of the proposed road development is an integrated part of the Galway Transport Strategy (GTS). The GTS, and hence the proposed road development has been incorporated into both Galway City Development Plan 2017-2023 and Galway County Development Plan 2015-2021 as varied.

The provision of the proposed road development as part of the integrated GTS is a stated objective of Galway City Development Plan. This objective is supported in particular by Policies 3.3, 3.4, and 3.7 as well as by the Specific Objectives outlined under Section 3.10 of the Plan. The corridor of the proposed road development is also expressed on the Land Use Zoning and Specific Objectives Map of Galway City Development Plan and described as ‘N6 Galway City Ring Road (N6 GCRR)’.

In terms of land use zoning in the Galway City Development Plan it is stated that the *‘strategic objectives which include the plan commitments to preserve the N6GCRR Preferred Route Corridor and the associated land requirements will take priority over other land uses and objectives.’* (page 14, Galway City Development Plan 2017-2023).

In terms of landscape and visual considerations, Chapter 2 of the Galway City Development Plan addresses **Housing and Sustainable Neighbourhoods** and sets out various policies and specific objectives to develop, enhance, protect and regenerate existing and proposed residential areas, including those within the outer suburbs (Section 2.5) and established suburbs (Section 2.6). Section 2.10 of Galway City Development Plan addresses **Village Envelopes/Areas**, and recognises four village settlement areas with distinct characters within the Plan area. These are Menlough, Castlegar, Coolagh-Briarhill and Coolagh-Menlough as shown on **Figures 12.3.01** and **12.3.02**. Policy 2.10 seeks to strengthen the character of these villages and to protect and enhance their amenity and identity.

Chapter 4 of Galway City Development Plan sets out the policies and objectives in relation to **Natural Heritage, Recreation and Amenity**. This Plan identifies the green network of the city and the spaces that comprise this network (refer to Table 4.1 of Plan and to **Plate 12.2** of this chapter of the EIAR). The network is promoted and supported by Policy 4.1.

The network includes **protected spaces** (i.e. SACs, SPAs, NHAs, pNHAs and local biodiversity areas); **blue spaces** (Coastal area, River Corrib, canals and other waterways, Lough Corrib and lakes, enclosed marine and wetlands); **green spaces** (citywide and city centre parks and neighbourhood parks); **community spaces** (greenways, recreational facilities and playgrounds, and protected views of special amenity value and interest); and **open spaces** (which includes institutional open space, recreation and amenity zoned lands and agricultural and high amenity lands).

This green network includes the River Corrib, lands at Menlo Castle, Galway Racecourse, NUIG Sports Campus, Cappagh Park, Ballinfoile Park, Ballindooley Lough as well as agricultural and high amenity zoned lands.

**Plate 12.2** and **Plate 12.3** provide an overlay of the proposed road development onto the green network and green spaces/park network respectively. Further detail is also provided on **Figures 12.3.01** and **12.3.02**: Landscape Planning Aspects.

Section 4.4 of Galway City Development Plan discusses **Green Spaces** and Figure 4.4 of the Plan (refer to **Plate 2.3**) identifies the extent of parks within the city area.

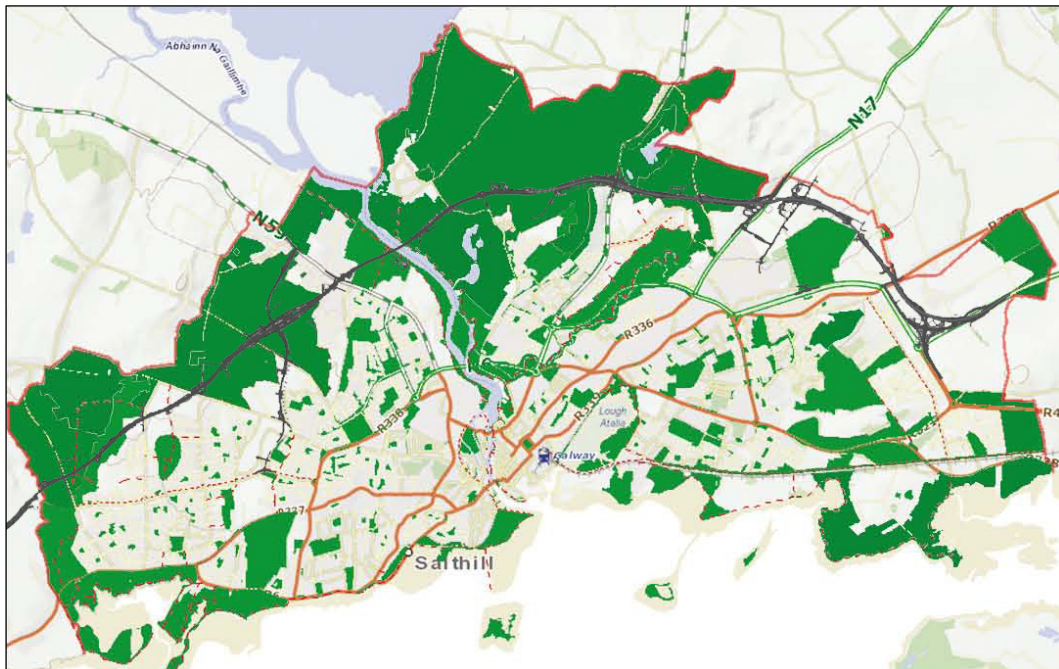
To the northwest and north, most of the lands outside of the developed city are identified as part of the green network. The majority of the proposed road development is located within these areas.

These are also shown on **Figures 12.3.01** and **12.3.02: Landscape Planning Aspects**, which indicates that the proposed road development crosses lands zoned for 'recreational and amenity use' along the Bearna Stream (Ch. 5+230 - between Cappagh and Ballymoneen Roads) and at NUIG Sports Campus (Ch. 8+900) on the west side of the River Corrib. The proposed road development also crosses a large area of land zoned for agriculture and high amenity on the east side of the River Corrib.

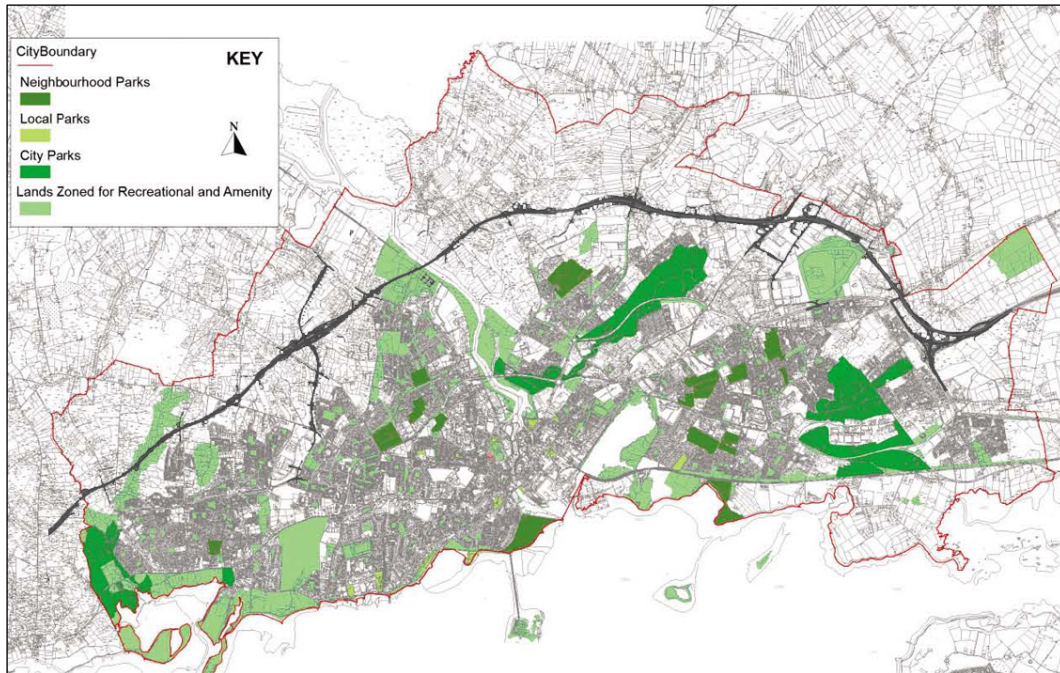
Section 4.4.1 **Urban Woodland Parks and Trees** and Policy 4.4.1 seeks to manage, develop and integrate existing trees and hedgerows, including on development sites.

Section 4.5.1 **Greenways and Public Rights of Way** promotes the development of such linkages, including through the NUIG campus on the west bank of the River Corrib. The proposed road development would cross this greenway and other such links proposed to the northwest of the city (refer to **Figures 12.3.01** and **12.3.02**).

**Plate 12.2: Green Network (within City Area) overlain with the proposed road development** (source: Figure 4.1 from City Development Plan with proposed road development overlain in black)



**Plate 12.3: Park Network (within City Area) overlain with the Proposed Road Development** (source: Figure 4.4 from City Development Plan with proposed road development overlain in black)



Section 4.5.3: **Views of Special Amenity Value and Interest**, identifies panoramic (V.1 to V.9) and linear protected views (V.10 to V.19). The location of the views are shown on **Figures 12.3.01** and **12.3.02** and views relevant to the proposed road development are listed in **Table 12.3**.

**Table 12.3: Selected Panoramic Protected Views and Linear Protected Views**

Panoramic Protected Views	
V.1	Panoramic views of the city and the River Corrib from Circular Road
V.2	Views from Dyke Road and Coolagh Road encompassing the River Corrib and Coolagh fen
V.6	Panoramic views of the city, and the Terryland Valley from parts of the Castlegar-Ballindooley Road
V.7	Views encompassing Lough Corrib from parts of the Quarry Road and Monument Road
Linear Protected Views	
V.10	Views from Galway-Moycullen Road (N59) of the River Corrib
V.14	Views northwards encompassing the River Corrib and adjoining lands from Quincentenary Bridge
V.19	Views encompassing Ballindooley Lough from parts of the Headford Road

Section 4.6.2: **Agricultural Lands** discusses general agricultural lands (zoned A) and high amenity agricultural lands (zoned G). The latter areas are illustrated on **Figures 12.3.01** and **12.3.02** and indicate that the proposed road development crosses this high amenity designation on the east side of the River Corrib. Policy



4.6.2 aims to prevent development that would give rise to environmental pollution or injury to general amenities, and also restricts the location of structures (other than structures with essential links to the waterway and public utilities) within ten metres of the River Corrib, in G zoned lands.

Section 4.7 of the plan sets out further **Specific Objectives** in relation to Natural heritage, Recreation and Amenity. These include:

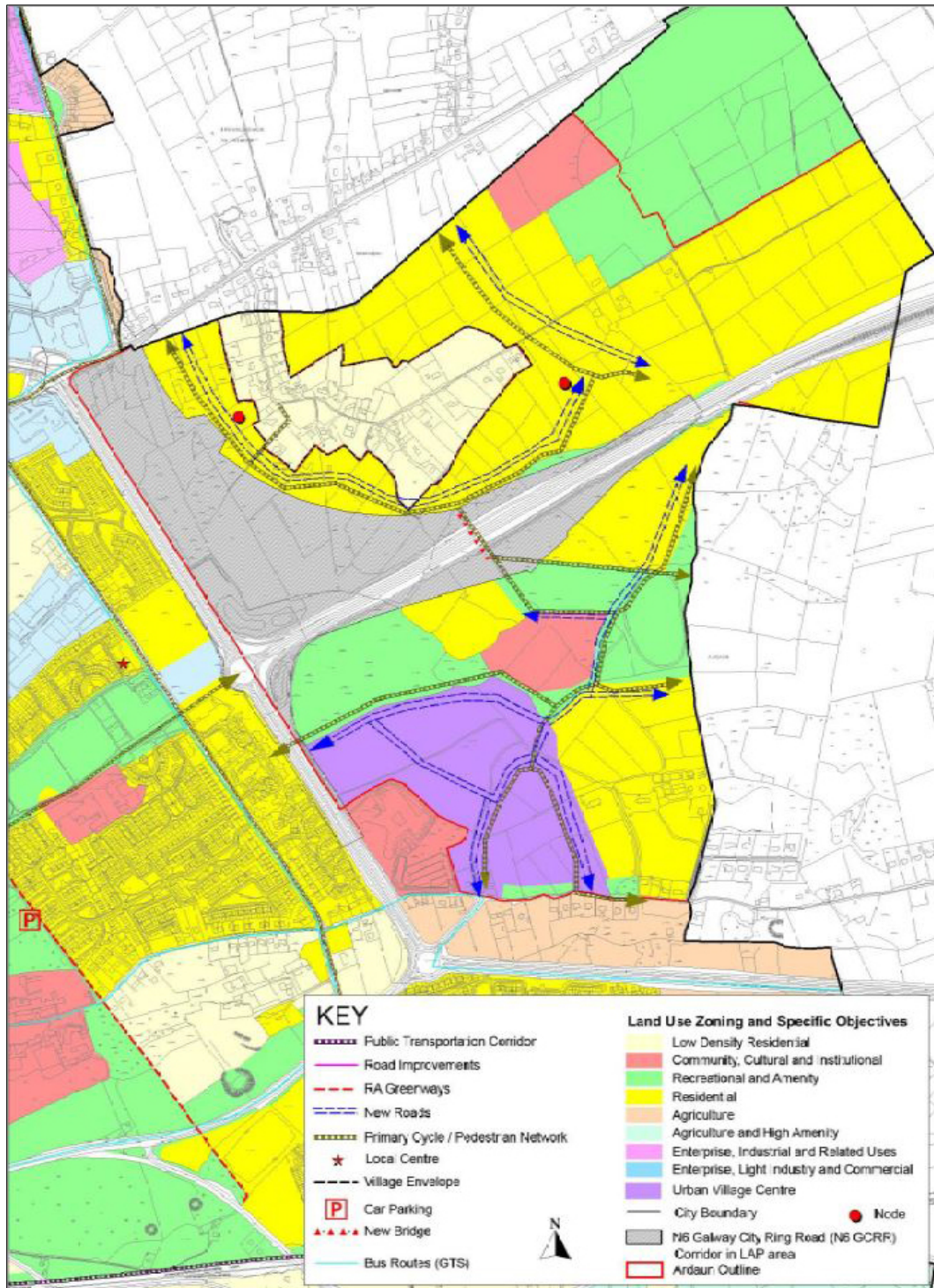
- A medium/long term objective to explore the potential for developing lands adjacent to Menlo Castle incorporating Menlough Woods as a park.
- A medium/long term objective to develop a walk along the eastern side of the River Corrib from the Dyke Road to the pier at Menlough.

Section 9.11 of Galway City Development Plan addresses **Light Pollution** and Policy 9.11 seeks to Ensure the design of external lighting minimises the incidence of light pollution, glare and spillage into the surrounding environment and has due regard to the visual and residential amenities of surrounding areas.

### 12.3.1.5 Ardaun Local Area Plan 2018-2024

The western section of the existing M6/N6 Galway to Dublin Motorway and the eastern end of the proposed road development falls within the area covered by the Ardaun Local Area Plan (LAP). The LAP acknowledges that the '*N6 Galway City Ring Road route corridor reservation traverses the north-western section of the area*' (refer to Section 4 Ardaun Local Area Plan, page 8) and does not include development proposals within the corridor of the proposed road development. The Draft LAP proposes major development in the area, including new residential and commercial developments on c.81 hectares of an overall LAP area of c.164 hectares. The Draft LAP envisages significant changes to the landscape and visual setting of the area, which will be delivered on a phased basis over a long period of time.

**Plate 12.4: Ardaun LAP – Land Use Zoning** (source: Figure 23 from Ardaun Local Area Plan 2018-2024)



### 12.3.1.6 Galway County Development Plan 2015-2021

The Galway Transport Strategy (GTS) and the proposed road development are incorporated within Galway County Development Plan, as varied, and discussed in detail in Sections 5.3.4 and 5.3.4.6 of the Plan respectively. The GTS and the proposed road development are supported by Land Use Integration and Sustainable Transportation Policies TI-2 and TI-8 and Objectives TI-1 and TI-15.

In terms of landscape and visual considerations, Chapter 9 of Galway County Development Plan sets out policies and objectives in relation to **Heritage, Landscape and Environmental Management**. The strategic aims of the Plan (page 148) are to:

- To promote appropriate enhancement of the built and natural environment as an integral part of any development
- To promote a reasonable balance between conservation measures and development needs in the interests of promoting orderly and sustainable development
- To protect the landscape categories within the county and avoid negative impacts upon the natural environment
- To promote appropriate enhancement of the natural environment as an integral part of any development

Section 9.3 of Galway County Development Plan sets out General Heritage Policies, while Sections 9.4, 9.5, 9.6 and 9.7 relate to **Built Heritage, Architectural Heritage, and Archaeological Heritage**.

Objective AH 9 – ‘Local Landscape and Place Assessment’ supports local communities and residents in analysing character of local places and promotes its regeneration for the use and enjoyment of locals and visitors.

Objective AH 10 – ‘Designed Landscapes’ addresses surviving designed landscapes and promotes the conservation of their essential character, both built and natural.

Section 9.9 of Galway County Development Plan sets out a range of **Natural Heritage and Biodiversity** Policies and Objectives, which seek to protect, conserve and enhance the natural heritage and biodiversity of designated and non-designated sites, ecological networks and linear features such as hedgerows, stonewalls, water resources, geological and geomorphological systems, bats and bat habitats, eskers, the coastal zone, inland waterways, riparian zones and soil and groundwater; to promote green infrastructure; to implement national and county heritage plans and biodiversity plans; to support measures for prevention, recording and eradication of invasive species; to promote the use of native species; and to take account of Management Plans prepared for European sites by the National Parks and Wildlife Service (NPWS).

Objective NHB 11 – ‘Trees, Parkland/Woodland, Stonewalls and Hedgerows’ seeks to: protect important trees and hedgerows; to promote the use of native species; and to retain natural boundaries, including stone walls and hedgerows,

wherever possible or to replace with a similar boundary where removal is unavoidable.

Sections 9.10 and 9.11 of Galway County Development Plan sets out Policies and Objectives in relation to **Landscape Conservation and Management** and to the consideration of landscape character, and where appropriate, to the preservation and enhancement of character, views and prospects, amenities of places and features of natural beauty or interest.

Section 9.10 of Galway County Development Plan notes that County Galway has been sub-divided into 25 **Landscape Character Areas (LCAs)**, each of which has been attributed landscape values and sensitivity ratings. As landscape character relates to both county and city administrative areas this is discussed in further detail in **Section 12.3.1.2** of this chapter.

Section 9.12 and 9.13 of Galway County Development Plan refers to **Focal Points and Views** and to Objective FPC 1 – Development Management, which seeks to preserve focal points and views as listed in Map FPV1 of Galway County Development Plan. It is noted that this objective shall be balanced against the need to develop key infrastructure to meet the strategic aims of the Plan, and have regard to the zoning objectives of serviced development land within Galway Metropolitan Area.

Focal Points/Views Map FPV1 (of Galway County Development Plan) indicates that there are 5 focal points/views on or close to the proposed road development (Refer to **Figures 12.3.01** and **12.3.02**). These are:

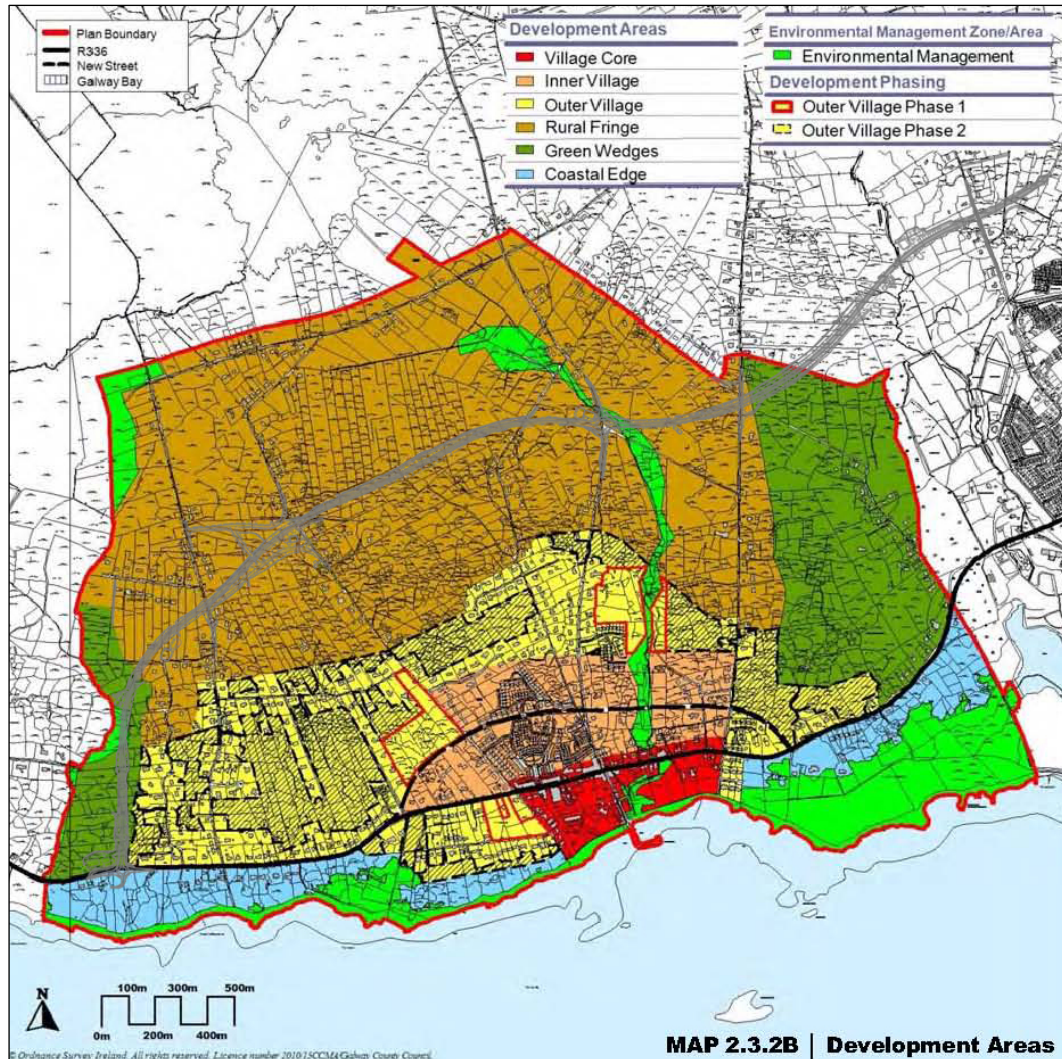
- 71 – View of Headland Illaunafamona (700m+ from proposed road development).
- 72 – View of the sea from north of Bearna (750m section of proposed road development (Ch. 2+600 to Ch. 3+350) passes through northern extent of area from which view is identified).
- 73 – View of Lough Inch from the surrounding Third Class Roads (proposed road development passes immediately south of area from which view is identified)
- 74 – View of North Clare Coast (westernmost 2.85km section of proposed road development (Ch. 0+000 to Ch. 2+850) crosses into eastern portion of area from which view is identified).
- 75 – View of Loch Bhain Ui Choine
- 76 – View of Lough Corrib (1.45km section of proposed road development (Ch. 8+200 to Ch. 9+650) passes through southern end of area from which view is identified).

### **12.3.1.7 Bearna Local Area Plan 2007-2017**

Section 2 of the Bearna Local Area Plan sets out the policies and objectives in relation to **Development Strategy**. Sub-section 2.3.2 discusses Land Use Strategy and identifies landscape designations. The designations are overlain with the proposed road development on **Plate 12.5**. The designations/land use objectives include:

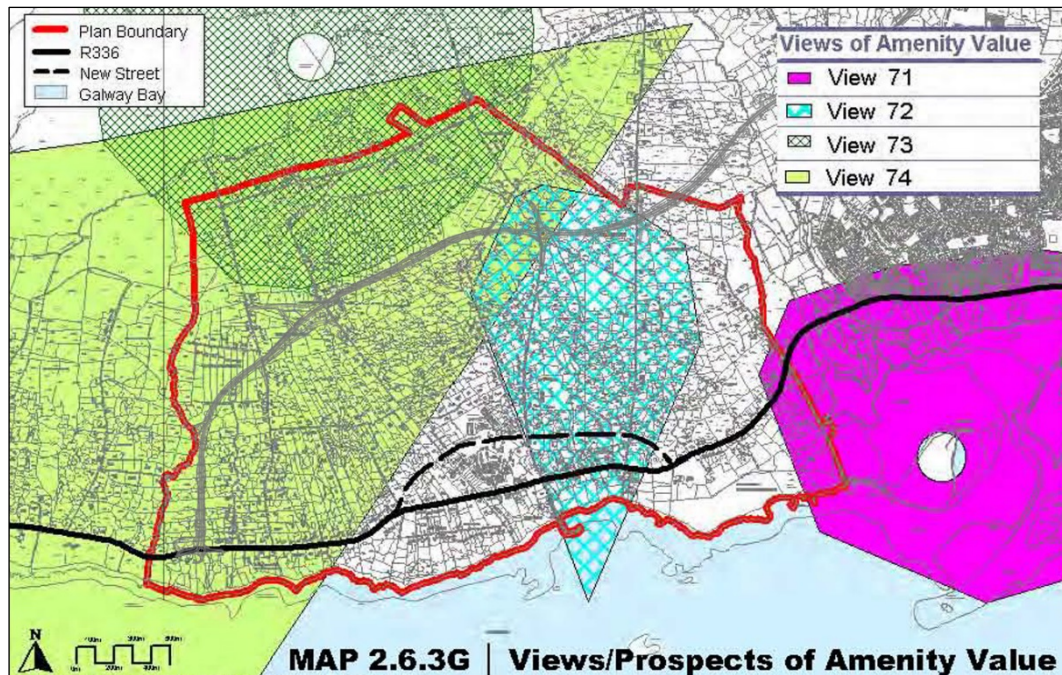
- Objective LU6: ‘Rural Fringe Area’, which seeks to protect the rural landscape north of Bearna from inappropriate and ribbon development. This area is also described in more detail in Sub-section 3.4 of the Bearna Local Area Plan. The proposed road development passes through centre of the rural fringe area.
- Objective LU7: ‘Green Wedges Area’, which seeks to retain areas adjacent to Sruthán Na Libeirtí (west) and Barna Woods (east) as green landscape wedges separating Bearna from Na Forbacha in the west and from Galway City to the east. These areas are also described in more detail in Sub-section 3.5 of the LAP. The proposed road development passes north south through western green wedge along Sruthán Na Libeirtí.
- Objective LU8: ‘Coastal Edge Area’ seeks to protect the coastal edge and high amenity area and retain potential for recreation, amenity, conservation and visual amenity. This area is also described in more detail in Sub-section 3.6 of the Bearna Local Area Plan. The proposed road development ties in to existing R336 at northern boundary of coastal edge area.
- Objective LU9: ‘Environmental Management Zone/Area’ seeks to protect areas with high biodiversity, landscape, amenity, and/or flood risk potential. These areas are also described in more detail in Sub-section 3.7 of the Bearna Local Area Plan. A c.150m section of the proposed road development passes through an environmental management zone/area along the Sruthán Na Libeirtí (Ch. 0+500). A further short section (c.100m) of the proposed road development at the proposed Bearna East Roundabout also crosses a narrow section of a second environmental management zone/area located along the Trusky Stream (Ch. 2+800).

**Plate 12.5: Development Area Map from Bearna LAP overlain with proposed road development (in Grey)**



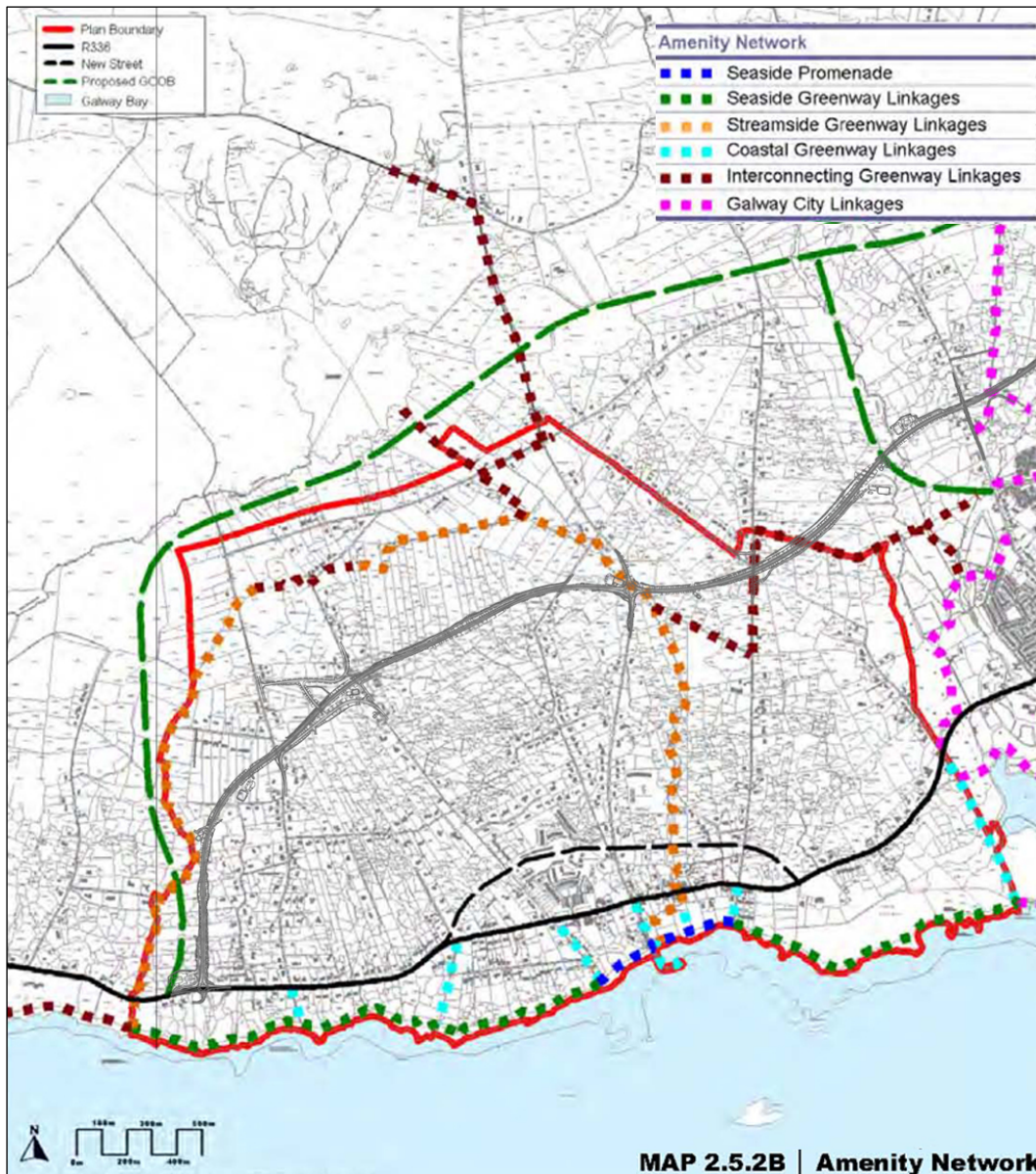
Policy 2.4.2B and Objectives VD12 to VD17 of the local area plan, which relate to **Landscape, Open Space, Views and Prospects**, seek to enhance green networks, integrate new development with the landscape, and landscape features, including streams, trees and hedgerows, and promote ecological landscaping. Objective VD14 Views and Prospects reflects the policy of Galway County Development Plan in relation to the protection of Views 71, 72, 73 and 74 as discussed under **Section 12.3.1.3** above (refer to **Plate 12.6** and **Figures 12.3.01** and **12.3.02** also).

**Plate 12.6: Prospects Map from Bearna LAP overlain with proposed road development (in Grey)**



Policy 2.5.2B and Objectives CF13 to CF19 of the local area plan relate to the **Amenity Network**. In particular Objectives CF15 and CF17 seek to promote streamside greenway linkages, loops and interconnections along Trusky Stream and Sruthán Na Libeirtí and on to a potential future coastal amenity park/promenade. These objectives are further supported by Objective CF18 which promotes the use of existing boreens and field or property boundaries or other routes as appropriate/agreed to improve the amenity network. The proposed road development crosses streamside greenways and interconnecting greenway linkages – refer to **Plate 12.7**.

**Plate 12.7: Amenity Network Map from Bearna LAP overlain with proposed road development (in Grey) (Note: Route of previous N6 Galway Outer Bypass (2006) is shown in dashed green line)**



Policy 2.6.3D and Objectives NH10 to NH13 of the local area plan, which relate to the **Nature Conservation and Biodiversity**, address designated and non-designated sites, tree protection, interconnectivity and the retention, replacement of natural boundaries, including stone walls.

Likewise, Policy 2.6.3F and Objectives NH19 to NH22 of the local area plan, which relate to the **Field Patterns, Hedgerows and Stone Walls**, also address retention, where possible of field patterns and boundaries, including hedgerows and stone walls.

Policy 2.6.3I and Objectives Nh32 to NH35 of the local area plan relate to **Landscape Character and Views**; to the landscape value and sensitivity of such character; to designated views and prospects, and to the scenic qualities of the



coastal zone (particularly 50m either side of the coastal road). Objective NH32 also notes potential for consideration of designation of this coastal zone as an Area of Special Amenity or as a Landscape Conservation area. The tie-in of the proposed road development with the existing R336 falls within the stated corridor of 50m to either side of the coast road. This area has not been designated as an Area of Special Amenity or as a Landscape Conservation area.

Policy 2.6.3J and Objectives NH36 to NH44 of the local area plan relate to the **Coastal Zone**, and to its sensitivities, protection and conservation, as well as to its potential for amenity/linkages/walkways.

### 12.3.1.8 Gaeltacht Local Area Plan 2008-2018

In an overall sense, the Gaeltacht LAP reiterates the landscape and visual considerations and objectives as set out in the Galway County Development Plan 2015-2021. In particular, Environmental Policies PL1, PL2 and PL3 refer to landscape and Policy OHE5 addresses biodiversity and ecological networks. Part of the proposed road development falls within District F Imeall Na Cathrach/An Eachréid, which abuts and surrounds Galway City. The Plan notes that *“It is the area under greatest pressure from City growth and must cope not only with the changes to its language and culture but with the constant demand for infrastructure and services which this now peri-urban area.”*

### 12.3.1.9 Historic Gardens and Designed Landscapes

The National Inventory of Architectural Heritage (NIAH) records properties under Historic Gardens and Designed Landscapes. The properties listed are given a historic feature richness index rating (FRI) ranging between 0 to 16 depending on the quality of the extant features and the state of their preservation. Where no, or 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 the original layout of the historic garden and/or designed landscape. Nevertheless, even where a lower rating has been recorded, individual features may continue to have local 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 significant features of the original landscape design intent and structure.

The properties listed in **Table 12.4** lie on or close to 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. Historic demesnes with houses that have potential for visual impact have also been assessed, together with all other properties, within the visual impact schedule in **Appendix A.12.1** and within **Section 12.5.3.6** and **Section 12.5.4.6** of this chapter. A more detailed consideration of all aspects of architectural and cultural heritage is provided under **Chapter 13, Archaeological, Architectural and Cultural Heritage**.

**Table 12.4: Historic Gardens and Designed Landscapes located along the Proposed Road Development (PRD)**

<b>Figure Ref.</b>	<b>Name and location relative to PRD:</b>	<b>FRI Index</b>	<b>NIAH Comments &amp; Principal Retained Features</b>
P008-043 ( <b>Figure 12.1.12</b> )	Bushypark House demesne.  Mainline of PRD over 600m+ from house. Proposed N59 Link Road North ties into existing N59 Moycullen Road along southern demesne boundary.	2	NIAH Comments: Main features substantially present - peripheral features unrecognisable. Much of the structural footprint of the designed landscape shown on the 1836 - 1846 OS map is visible in aerial photography but features are in a degraded condition.  Note: The principal structure, 'Bushypark House', is still extant and is listed as a protected structure. Some limited residential development has taken place within the demesne lands.
N/A	Ashley Park demesne.  300m+ from PRD.	1	NIAH Comments: Virtually no recognisable features. Housing has been constructed on this site. Virtually no features of the designed landscape shown on the 1836 - 1846 OS map are visible in aerial photography.
P009-001 (Dangan House – 2 <sup>nd</sup> Ed. Mapping)  ( <b>Figure 12.1.07</b> )	Dangan Cottage, Dangan House, Dangan Nunnery, Mary Ville demesnes.  (Effectively forming one combined or conjoined landscape).  PRD passes through northern portion of original conjoined demesne lands.	1	NIAH Comments: Virtually no recognisable features remain. Industrial and sporting facilities have been constructed on this site.  Note: NIAH garden survey only includes an entry for Dangan House, which, like Nunnery, on the first edition map was located on the edge of the River Corrib. Neither property survives today or are indicated on second edition mapping.  Dangan Cottage appears in the same place on both first and second edition mapping. However, the property is no longer present and a sports pitch has been constructed on the location

Figure Ref.	Name and location relative to PRD:	FRI Index	NIAH Comments & Principal Retained Features
			Mary Ville is not shown on first edition mapping, but does appear on second edition mapping, together with a new reference for Dangan House in a different location to that shown on the first edition mapping.
P009-003  (Figure 12.1.07)	Menlo Castle demesne.  PRD passes through southeast portion of original demesne – c.150m from castle ruins.	6	NIAH Comments: Main features unrecognisable – peripheral features visible. A river runs alongside this site. Much of the parkland shown on the 1836 - 1846 OS map has been divided into smaller fields.  Note: Today the principal castle structure survives as a dramatic ruin on the edge of the river (P009-003). The principal structure and its entrance are both protected structures.
PG14-016 (site of)  (Figure 12.1.14)	Ballybrit House demesne.  1km+ from PRD. City East Business Park Junction works are within demesne.	0	NIAH Comments: Virtually no recognisable features.  Note: Today the demesne is completely covered by industrial and residential development and the site of the house lies beneath Bóthar na dTreabh (N6).

### 12.3.1.10 Landscape and Visual Significance and Sensitivity

The main features of significance and sensitivity in the receiving landscape (in general west to east order) are:

- The semi-natural landscape character of marginal grasslands, scrub plantings, small stream valleys and stone walls to the west and north of Bearna Village
- Environmental Management and Open Space Areas, protected views and prospects, and proposed greenways and linkages west and north of Bearna Village
- The open rising landscape, including open space lands, northwest of Galway City
- The River Corrib corridor and its wider landscape setting, which includes the prominent ruins of Menlo Castle, as well as a diverse mosaic of semi-natural and man-influenced landscapes, riparian plantings, grasslands, scrub and woodland. Protected views and prospects and lands on east bank designated as High Amenity Agriculture

- The recreation, sports and amenity lands of NUIG Sports Campus and surrounding areas. Lands on west bank of River Corrib designated as Recreation, Open Space
- The limestone, grassland and scrub landscape with stone walls northeast of Galway City
- The wider drumlin and valley landscape setting with protected views and prospects around Ballindooley Lough
- The open recreational lands of Galway Racecourse and surrounding areas

The main features of visual significance and sensitivity in the receiving landscape (in a general west to east order) are:

- The presence, prominence and visual amenity of residential property and development in general, especially at the:
  - west and north of Bearna, at Foráí Maola Road, at Troiscaigh Road and at Ann Gibbons and Bearna to N59 Moycullen Road
  - west/northwest of the city, at Aille Road, Cappagh Road, and Ballymoneen
  - northwest of the city, at Ragoon Road and Clybaun Road, Letteragh Road and at Chloch Scoilte.
  - to either side of the N59 Moycullen Road north of the city, at Knocknafroska, Barnacranny, Upper Dangan and Aughnacurra and also at Ballagh and Bushypark
  - north/northeast of the city, at Bóthar Nua, Seanbóthar
  - northeast of the city, at N84 Headford Road and at Hynes' Bóithrín, Spellman's Bóithrín and School Road and setting of Castlegar Village
  - east of the city, at N83 Tuam Road, Racecourse Avenue, Ballybrit Crescent, and the village of Coolagh-Briarhill
- The location of a number of protected views and prospects.
- The visual amenity associated with NUIG Sports Campus.
- The visual amenity associated with the River Corrib corridor, including the setting of Menlo Castle.
- The visual amenity associated with Galway Racecourse.

## 12.4 Characteristics of the Proposed Development

A detailed description of the proposed road development and construction activities are provided in **Chapter 5, Description of Proposed Road Development** and **Chapter 7, Construction Activities**.

The main characteristics of the proposed road development of relevance to the landscape and visual assessment are outlined under construction and operation phases in the following.

### 12.4.1 Construction Phase

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

- Site mobilisation and establishment, tree and vegetation removal, fencing of lands, provision of site compounds
- Removal of properties, boundaries, amenities
- Normal landscape disturbance and activity, including removal of topsoil, general earthworks and operation of construction traffic
- Construction of significant earthworks, including cuttings and rock cuttings (< 3m deep) and embankments (< 3m high)
- Construction of the new road, link roads and associated local road re-alignments, including provision of noise barriers, lighting, gantries signage, *etc.*
- Construction of new structures, including under and overbridges, culverts, a c.650m long bridge crossing of the River Corrib and its valley, a c.310m length of viaduct, and 2 separate sections of tunnel – one of c.270m length at Lackagh Quarry, and a second of c.240m length at Galway Racecourse.
- Demolition and modification of part of NUIG Sports Pavilion, provision of new sport pitches at NUIG Sports campus and provision of re-organised stabling and parking facilities at Galway Racecourse.
- Other related works, including diversion of existing services, provision of new services, provision of attenuation and wetland ponds, drainage facilities, new road boundaries and landscape works, *etc.*

### 12.4.2 Operational Phase

The main characteristics of the operation stage of the proposed road development that have potential for landscape and visual impact are:

- The presence and operation (traffic) of the road and its proximity to residential, amenity and other property
- The prominence of embankments and cuttings in the landscape
- The prominence of elevated structures such as bridges and the viaduct
- The presence of noise barriers, gantries signage, *etc.*

- The presence of additional roadside lighting
- The movement of traffic on the proposed road development, including on bridges, embankments, tunnel portals *etc.*

## 12.5 Evaluation of Impacts

### 12.5.1 Introduction

The proposed road development crosses a diverse rural/sub-urban edge landscape to the west, north and east of typical city development. Residential properties are a common feature along most sections of the proposed road development, particularly at the crossing of local roads west and northwest of Galway, at the crossing of the N59 Moycullen Road, at the N84 at Ballindooley, at Castlegar, and at Ballybrit, Dougishka and Coolagh-Briarhill.

Within this landscape, the construction associated with the proposed road development will give rise to significant and profound negative impacts in terms of disturbance to the existing landscape and visual character of the area and to properties located close to the proposed road development.

While landscape and visual impacts will tend to be most pronounced during the construction and early operation stages, the proposed road development will, as with all road schemes, also have some degree of residual permanent effect on its landscape and visual environment.

### 12.5.2 Do Nothing Impact

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 other than from likely further residential and city-related development.

### 12.5.3 Potential Construction Impacts

Details of the anticipated three-year construction period of the proposed road development is set out in **Chapter 7, Construction Activities**.

Potentially impacted features and landscape and visual impacts are described on a section by section basis below. An assessment of the overall construction stage visual Impact is also discussed separately in the **Section 12.5.3.6** of this chapter. Potentially impacted properties are indicated on **Figures 12.1.01 to 12.1.14** and recorded in **Appendix A.12.1**.

#### 12.5.3.1 Ch. 0+000 to Ch. 6+300 (Landscape Character Area 9)

The following construction-related aspects give rise to potential for landscape and visual impacts within this section of the proposed road development:

- **Properties:** Ten residential properties are to be acquired with consequent impact on existing community and landscape/visual setting (refer to **Figures 12.1.01 to 12.1.05**). These are mainly located at the crossing of local roads where ribbon-style residential development is a feature along such roads.

Locally significant short-term negative impact

- **Vegetation:** Removal of vegetation is very limited and is primarily focused on areas of scrub vegetation, short sections of gappy hedgerows and occasional small trees – often around properties to be acquired (refer **Figures 12.4.01 to 12.4.05**).

No significant impact arises

- **Landscape Features:** There is substantial impact on, and removal of, stone field boundary walls. While often dilapidated and overgrown with scrub, these walls are a notable feature of this relatively open, rough-grained landscape.

Locally significant short-term negative impact

- **Embankments:** Significant embankments (i.e. >3m high) are limited in extent and scale. While some short sections of lower embankments (i.e. < 3m high) are required to cross local low points, the main sections of embankment (total c.2.55km) with approximate maximum heights are:

- Ch. 0+550 to Ch. 1+150 (up to c.6m high)
- Ch. 1+200 to Ch. 1+600 including Troiscaigh/Foraí Maola Overbridge Link (up to c.7m high)
- Ch. 1+900 to Ch. 2+250 (up to c.7m high)
- Ch. 2+800 to Ch. 3+050 (up to c.6m high)
- Ch. 3+900 to Ch. 4+000 (up to c.7m high)
- Ch. 4+100 to Ch. 4+350 (up to c.5m high)
- Ch. 4+750 to Ch. 5+000 (up to c.6m high)
- Ch. 5+950 to Ch. 6+300 (up to c.9m high)

Locally significant short-term negative impacts

- **Cuttings:** Significant cuttings (i.e. > 3m deep) are limited in extent and scale. While some short sections of shallow cut (i.e. < 3m deep) are required to cross local ridges/high points, the main sections of cut (total c.0.95km) with approximate maximum depth are:

- Ch. 3+150 to Ch. 3+900 (up to c.5m cut – rock expected at lower depths)
- Ch. 5+350 to Ch. 5+530 (up to c.9m cut – rock expected at lower depths)

Locally moderate short-term negative impacts

- **Visual Impacts:** Significant negative visual impacts arise for residential properties, especially in the crossing of local roads (at R336, Foraí Maola, Troiscaigh, Ann Gibbons, Aille, Cappagh, Ballymoneen, Rahoon and Letteragh) and at the proposed Troiscaigh/Foraí Maola Overbridge Link (Ch. 1+380). Refer to **Section 12.5.3.6** and **Figures 12.1.01 to 12.1.05**.

Overall there will be a significant short-term negative visual impact

- **Landscape Planning:** Construction of part of the proposed road development is sited within a Green Wedge Ch. 0+000 to Ch. 0+750) and also passes through

a short section of an Environmental Management Zone<sup>4</sup> (at Ch. 0+550) located along Sruthán Na Libeirtí. The construction of the proposed road development also crosses a further narrow section of an Environmental Management Zone at Trusky Stream (Ch. 2+850), as noted in the Bearna Local Area Plan.

Construction of part of the proposed road development crosses the northern edge of open space zoning (in Galway City Development Plan) east of Aille Road (Ch. 3+850); and again at Cappagh/Ballynahown/Keeraun (c.Ch. 4+700 to Ch. 5+300).

The proposed road development crosses the greenway link objectives at Trusky Stream (Ch. 2+850); at Aille Road (Ch. 3+300) and at Cappagh Road (Ch. 4+450), Boleybeg Bóithrín (Ch. 4+550) and at Keeraun Bóithrín (Ch. 5+950). Construction stage activities will result in temporary restrictions on the use of these local roads.

The construction of the proposed road development falls within the fore/middle-ground of View No. 74 - View of North Clare Coast and of View 72 – View of Sea from north of Bearna (as noted in Galway County Development Plan and Bearna LAP). Large-scale construction of the proposed road development will be visually distracting and incongruous in the foreground of the otherwise long range views.

Overall there will be a significant short-term negative landscape planning impact

- **Landscape Character:** Notwithstanding the extent of existing residential development, the construction of the proposed road development will give rise to substantial disruption of local landscape character – especially in the provision of the Troiscaigh/Foraí Maola Overbridge Link. The construction will have limited impact on the more locally sensitive Bearna Coastal Fringe – especially south of the R336 Coast Road.

The construction of proposed road development will have only slight to moderate negative impact on the overall Landscape Character Area (LCA 9).

Overall there will be a moderate to significant short-term negative impact on local landscape character

### 12.5.3.2 Ch. 6+300 to Ch. 8+000 (Landscape Character Area 12)

The following construction-related aspects give rise to potential for landscape and visual impacts within this section of the proposed road development:

- **Properties:** Three residential properties are to be acquired with consequent impact on the existing community and landscape/visual setting (refer to **Figures 12.1.05 to 12.1.06** and **Figures 12.1.12 to 12.1.13**). These are located at Letteragh (1) and at the N59 Letteragh Junction (2).

Locally moderate short-term negative impact

<sup>4</sup> for Environmental Management Zone: Refer to Objective LU9 of Bearna Local Area Plan and to Section 12.3.1.6 of this Chapter of the EIAR



- **Vegetation:** Removal of vegetation is limited and is primarily focused on areas of scrub vegetation, short sections of gappy hedgerows and occasional trees – generally around the proposed N59 Letteragh Junction (refer **Figures 12.4.05 to 12.4.06** and **Figures 12.4.12 to 12.4.13**).

Locally slight short-term negative impact

- **Landscape Features:** There is considerable impact on, and removal of, stone field boundary walls. While often dilapidated and overgrown with scrub, these walls are a notable feature of this relatively open landscape.

Locally moderate to significant short-term negative impact

- **Embankments:** Some significant embankments (i.e. > 3m high) arise. While some short sections of lower embankments (i.e. < 3m high) are also required to cross local low points, the main sections of embankment (total c.1.15km) with approximate maximum heights are:
  - Ch. 6+300 to Ch. 6+550 (up to c.12m high)
  - Ch. 6+800 to Ch. 6+950 (up to c.10m high)
  - Ch. 7+000 to Ch. 7+550 (various embankments associated with approach to and N59 Letteragh Junction - up to c.6m high)
  - Ch. 1+500 to Ch. 1+700 on N59 Link South (up to 7m high)

Locally moderate short-term negative impacts

- **Cuttings:** Some significant cuttings (i.e. > 3m deep) arise. While some other short sections of shallow cut (i.e. < 3m deep) are required to cross local ridges/high points, the main sections of cut (total c.0.85km) with approximate maximum depth are:
  - Ch. 7+550 to Ch. 8+000 (various cuttings associated with N59 Letteragh Junction - up to c.11m cut. Rock expected at lower depths)
  - Ch. 0+050 to Ch. 0+450 on N59 Link North (up to 8m cut)

Locally significant short-term negative impacts

- **Visual Impacts:** Significant negative visual impacts for residential properties, especially in the crossing of local roads at Letteragh and Ragoon and at the tie-in to the existing N59 Moycullen Road at Ballagh/Bushypark). Refer to **Section 12.5.3.6** and **Figures 12.1.05 to 12.1.06** and **Figures 12.1.12 to 12.1.13**.

Overall there will be a significant short-term negative visual impact

- **Landscape Planning:** The construction of the proposed road development falls within the context of Linear View 10 of the River Corrib from the N59 Moycullen Road and County View 76 of Lough Corrib from the Ballagh / Bushypark area. Construction of the proposed N59 Link North will be visually distracting and incongruous in the foreground of longer range elevated views of Lough Corrib in View 76. No significant impact arises for View 10.

Overall there will be a slight to moderate short-term negative landscape planning impact

- **Landscape Character:** Notwithstanding the rural/city edge nature of the landscape and the extent of residential development, the construction of the

proposed road development will give rise to substantial disruption of the open elevated local landscape character.

The construction of proposed road development will have only slight to moderate negative impact on the overall Landscape Character Area (LCA 12).

Overall there will be a significant short-term negative impact on local landscape character

### 12.5.3.3 Ch. 8+000 to Ch. 11+800 (Landscape Character Area 11)

The following construction-related aspects give rise to potential for landscape and visual impacts within this section of the proposed road development:

- **Properties:** Thirteen residential properties are to be acquired with consequent significant impact on existing community and landscape/visual setting (refer to **Figures 12.1.06 to 12.1.08**). These properties are mainly located to either side of the N59 Moycullen road at Knockadoney/Bushypark (2), Ard na Locha (3) and Aughnacurra (6) on the east bank of the River Corrib, and at Bóthar Nua (2) on the west bank. A temporary acquisition of the NUIG Sports Pavilion is also proposed to allow for modification of the building to facilitate the proposed road development.

Locally very significant/profound short-term negative impact at N59 Moycullen Road/Aughnacurra, and otherwise significant

- **Vegetation:** Substantial removal of vegetation within Aughnacurra residential estate and NUIG Sports Campus on the west bank; and southeast of Menlo Castle; and in sections across limestone landscape of Menlough/Coolough on the east bank (refer **Figures 12.4.06 to 12.4.08**). Significant impact on woodland block south of Menlo Castle is particularly notable.

Locally significant/very significant short-term negative impact

- **Landscape Features:** There is substantial impact on and removal of stone field boundary walls at Chloch Scoilte, Knockabrona and Knocknafroska all west of the N59 Moycullen Road. There is a lesser impact on stone walls through the limestone areas of Menlough/Coolough on the east side of the river.

Significant disruption and intrusion onto the recreational, amenity and sport grounds of NUIG Sports Campus; River Corrib watercourse and banks; distinctive setting of Menlo Castle; and the exposed limestone pavement areas in the east in Menlough/Coolough.

Existing sports pitches impacted at NUIG Sports Campus are to be replaced with all-weather facilities.

Locally very significant/profound short-term negative impact

- **Embankments and Structures:** Some very significant embankments (i.e. > 3m high) and structures are required through this section. The main sections of embankment (total c.1.575km) and elevated structures (including 650m long bridge) with approximate maximum heights of embankment are:

- Ch. 8+350 to Ch. 9+000 (up to c.8m high). Embankment includes bridge over existing N59 Moycullen Road and significant sections of high retaining walls through retained residential areas
- Ch. 8+850 to Ch. 9+500 Major elevated bridge structure across River Corrib and immediate landscape setting
- Ch. 9+500 to Ch. 10+100 Eastern tie-in to River Corrib Bridge (up to 18m high)
- Ch. 10+105 to Ch. 10+425 Viaduct over limestone pavement
- Ch. 10+425 to Ch. 10+550 (up to c.10m high)
- Ch. 11+500 to Ch. 11+800 (up to 9m high – but located on excavated floor of Lackagh Quarry)

#### Locally profound short-term negative impact

- **Cuttings and Structures:** Cuttings are very limited through this section, and lead mainly to the proposed tunnel into Lackagh Quarry.

The main sections of cut (total c.0.4km) and other structures with approximate maximum depth of cuttings are:

- Ch. 10+950 to Ch. 11+150 (cutting leading to Lackagh Quarry - up to c.8m cut. Rock expected at lower depths) Ch. 11+150 to Ch. 11+350 Tunnel into Lackagh Quarry

#### Locally slight / moderate short-term negative impacts

- **Visual Impacts:** Profound negative visual impacts for residential properties, especially to either side of N59 Moycullen Road; through NIUG Sports Campus; at crossing of River Corrib, including at Menlo Castle; as well as at Bóthar Nua and Seanbóthar on east bank of River Corrib. Construction of the bridge, associated embankments and viaduct will have a significant visual impact and give rise to city-wide attention and interest in the process. Refer to **Section 12.5.3.6** and **Figures 12.1.06 to 12.1.08**.

#### Overall profound short-term negative visual impact

- **Landscape Planning:** The construction of the proposed road development crosses recreation and amenity zoned lands on west bank of River Corrib; and High Amenity Agricultural lands on east bank.

The proposed river crossing is within context of County View 76 of Lough Corrib from the Dangan area. Construction of proposed bridge and associated earthworks will be visually prominent, distracting and incongruous in View 76.

#### Overall profound short-term negative landscape planning impact

- **Landscape Character:** Construction of the bridge and associated works especially on east bank will have a significant impact on the local landscape character of this broad river valley landscape, on its feature castle ruin and on the semi-natural setting of the east bank. The proposed viaduct rises on to the locally elevated east side of the river valley corridor and as such the construction of the structure will be visible from more elevated locations on the west bank of the river.

#### Overall very significant/profound negative impact on local landscape character

### 12.5.3.4 Ch. 11+800 to Ch. 14+200 (Part of Landscape Character Area 11 as well as Landscape Character Area 5)

The following construction-related aspects give rise to potential for landscape and visual impacts within this section of the proposed road development:

- **Properties:** Twenty-five residential properties are to be acquired with consequent significant impact on existing community and landscape/visual setting (refer to **Figures 12.1.08 to 12.1.10**). These properties are mainly located along the N84 Headford Road at Ballindoooley/Castlegar (14) Castlegar Village (8) and N83 Tuam Road (3).

Locally profound short-term negative impact at Castlegar and local significant impact at N84 Headford Road and elsewhere

- **Vegetation:** Limited removal of vegetation around residential areas at N84 Headford Road and Castlegar and along other limited sections (refer **Figures 12.4.08 to 12.4.10**).

Locally slight to moderate short-term negative impact

- **Landscape Features:** There is moderate impact on and removal of stone field boundary walls through Castlegar.

Locally moderate short-term negative impact

- **Embankments and Structures:** Series of embankments. The main sections of significant embankment (i.e. > 3m high) and elevated structures with approximate maximum heights of embankment (c.1.0km overall) are:
  - Ch. 11+950 to Ch. 12+500 (up to c.14m high). Embankment includes bridge over existing N84 Headford Road
  - Ch. 13+650 to Ch. 14+150. Embankment (up to 12m high) includes bridge over existing N83 Tuam Road

Locally very significant short-term negative impact

- **Cuttings and Structures:** Various significant cuttings (i.e. > 3m deep) through this section – including deep cutting southwards out of Lackagh Quarry (Ch. 11+800 to Ch. 11+950).

The main sections of cut (total c.1.0km) with approximate maximum depth are:

- Ch. 11+800 to Ch. 11+950 (cutting out of Lackagh Quarry - up to c.18m cut. Rock expected through most of depth)
- Ch. 12+550 to Ch. 12+850 through ridge at Castlegar (up to 7m deep – rock at lower levels)
- Ch. 13+050 to Ch. 13+600 through ridge at Castlegar (up to 12m deep – rock at lower levels)

Locally very significant short-term negative impacts

- **Visual Impacts:** Very significant/profound negative visual impacts for residential properties, especially to east of crossing of N84 Headford Road and through Castlegar generally. Refer to **Section 12.5.3.6** and **Figures 12.1.08 to 12.1.10**.

Overall profound short-term negative visual impact

- **Landscape Planning:** The protected historic settlement of Castlegar Village lies to the south of the proposed road development.

The landscape surrounding Ballindooley Lough immediately north of the proposed road development is designated as High Amenity Agriculture.

The construction of the proposed road development falls within the context of protected views V6 and V19.

Overall moderate - significant short-term negative landscape planning impact

- **Landscape Character:** Construction of proposed embankments, cuttings as well as a c.650m long bridge structure and a c.320m long viaduct structure will have a substantial impact on the rolling hill and valley nature of the local landscape character.

Overall significant/very significant negative impact on local landscape character

### 12.5.3.5 Ch. 14+300 to Ch. 17+540 (Landscape Character Area 3)

The following construction-related aspects give rise to potential for landscape and visual impacts within this section of the proposed road development:

- **Properties:** Three residential properties are to be acquired with consequent minor impact on existing community and landscape/visual setting (refer to **Figures 12.1.10, 12.1.11 and 12.1.14**). These properties are located along Racecourse Avenue and the R339 Monivea Road.

Locally slight short-term negative impact

- **Vegetation:** Limited removal of scrub vegetation west of Coolagh-Briarhill (refer **Figures 12.4.10, 12.4.11 and 12.4.14**).

Locally slight short-term negative impact

- **Landscape Features:** There is substantial impact on and removal of stone field boundary walls at Ballybrit and Coolagh-Briarhill. The proposed road development crosses the line of an old mass path at Parkmore (Ch. 1+010 on Parkmore Link Road).

Locally moderate to significant short-term negative impact

- **Embankments and Structures:** Series of embankments. The main sections of embankment (c.1.0km overall) and elevated structures with approximate maximum heights of significant embankment (i.e. > 3.0m high) are:
  - Ch. 14+200 to Ch. 14+400 (up to c.6m high). Embankments up to 15m high associated with loop link roads
  - Ch. 15+550 to End. Series of embankments up to 12m high with bridges and sections of retaining wall leading to and comprising proposed Coolagh Junction

Locally significant short-term negative impact

- **Cuttings and Structures:** Various significant cuttings (i.e. >3.0m deep) through this section – including deep cutting into Lackagh Quarry (Ch. 11+800 to Ch. 11+950).

The main sections of cut (total c.1.0km) with approximate maximum depth are:

- Ch. 14+150 to Ch. 14+950 (up to c.10m deep). Cutting leading to Galway Racecourse Tunnel
- Ch. 14+950 to Ch. 15+200 Cut and cover tunnel structure at Galway Racecourse
- Ch. 15+200 to Ch. 15+400 (up to c.8m deep). Cutting leading from Galway Racecourse Tunnel

#### Locally significant short-term negative impacts

- **Visual Impacts:** Very significant/profound negative visual impacts for residential properties, at Racecourse Avenue/Ballybrit Crescent and significant at Coolagh-Briarhill. Slight to moderate negative visual impacts at Dougishka. Refer to **Section 12.5.3.6** and **Figures 12.1.10, 12.1.11** and **12.1.14**.

#### Overall very significant short-term negative visual impact

- **Landscape Planning:** The historic settlement of Coolagh-Briarhill Village lies to the immediate northeast of the proposed road development. This village already overlooks existing smaller N6 junction.

The landscape surrounding Ballybrit is designated for Recreation and Amenity land use.

#### Overall significant short-term negative landscape planning impact

- **Landscape Character:** Construction of proposed embankments, cuttings and structures will have a substantial impact on the open recreational and amenity character of Galway Racecourse.

#### Overall significant negative impact on local landscape character

### 12.5.3.6 Visual Impact

Visual impact tends to be most pronounced during the construction phase when the initial disturbance is both unfamiliar and substantial and may often be in close proximity to properties. At the same time, effective visual mitigation may also be limited and therefore, significant negative temporary and short-term visual impacts will arise.

Construction stage impacts will arise primarily from visual disturbance and visual intrusion resulting from the initial loss of vegetation and boundary screening, from earthworks, alteration of ground levels and from normal construction activity and traffic. Issues such as noise and construction activity and the location of 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 in the Visual Impact Schedule (VIS) Table in **Appendix A.12.1**. The findings are summarised in **Table 12.5** below.

In overall terms, some 406 locations have been assessed along the proposed road development. Of these 54 residential properties will be acquired (44 of which will be demolished), together with a temporary acquisition of the NUIG Sports Pavilion, and the remaining 352 properties and landscape locations have been assessed for visual impact during construction. Refer to **Chapter, 15 Material Assets – Non Agriculture** for further details on acquisitions.

During the construction stage, 36 of the 352 locations (c.10%) will have an imperceptible impact. A further 169 locations (c.49%) will have a not significant, slight or moderate short-term impact. One hundred and five locations (c.30%) will have significant or very significant short-term visual impact. The remaining 42 locations (c.11%) will experience profound temporary or short-term negative visual impact associated with the construction stage of the proposed road development.

**Table 12.5: Visual Impacts Construction Stage**

Impact	Construction Stage
Imperceptible	36
Not Significant/Slight	79
Moderate	90
Significant	80
Very Significant	25
Profound	42
<b>Total</b>	<b>352</b>

## 12.5.4 Potential Operational Impacts

Potentially impacted features and general landscape and visual impacts are described on a section by section basis in the following. An assessment of the overall operational stage visual impact is also discussed separately in the **Section 12.5.4.6**.

### 12.5.4.1 Ch. 0+000 to Ch. 6+300 (Landscape Character Area 9)

- **Landscape Character:** In its operational phase the proposed road development, with its various sections of embankment and related road infrastructure will contrast significantly with the open exposed nature of the existing landscape, the small-scale and narrow nature of existing roads and the extent of residential development located along such existing roads. The proposed road development will tend to integrate over time within this generally small scale coarse landscape.

Lighting at the proposed R336 Coast Road and lighting from traffic will also introduce a significant new element into the landscape corridor of the proposed road development. The corridor of the existing R336 – especially along the northern side – is being increasingly developed resulting in an on-going change to its background rural character.

The introduction of short sections of roadside lighting at the proposed Bearna East Roundabout and the proposed Cappagh Road Junction will also accentuate the degree of change in the background rural landscape. Roadside lighting at the proposed Ballymoneen Road Junction will tie-in to existing roadside lighting to the immediate south along the Ballymoneen Road.

Local significant short-term and locally moderate medium-term negative impact

- **Visual Impacts:** Significant negative visual impacts will continue to arise for residential properties close to the proposed road development, especially in the crossing of local roads (at R336, Foráí Maola, Troscaigh, Ann Gibbons, Aille, Cappagh, Ballymoneen, Rahoon and Letteragh) and Troscaigh/Foráí Maola Overbridge Link. Refer to **Section 12.5.4.6** and **Figures 12.1.01 to 12.1.05**.

Overall significant short-term and locally moderate medium-term negative impact

- **Landscape Planning:** The proposed road development will have a significant impact on the Green Wedge and Environmental Management Zone located along the Sruthán Na Libeirtí, in that it impacts on a substantial portion of the designations. Nevertheless, the most significant portion of the designations are retained along the more sensitive corridor of Sruthán Na Libeirtí. The proposed road development will not have a significant impact the Environmental Management Zone at either the Trusky Stream (Ch. 2+850).

The proposed road development will not have a significant impact on the proposed large areas of open spaces east of Aille Road (Ch. 3+850); and at Cappagh/Ballynahown/Keeraun (c.Ch. 4+700 to Ch. 5+300).

The proposed road development will not have a significant impact on proposed greenway link objectives. The proposed road development will allow for and facilitate crossing and tie-in to proposed greenway link objectives at Trusky Stream (Ch. 2+850); at Aille Road (Ch. 3+300) and at Cappagh Road (Ch. 4+450); Bolebeg Bóithrín (Ch. 4+550) and at Keeraun Bóithrín (Ch. 5+950).

While traffic on the proposed road development will introduce a moving and distracting element within the foreground of protected views 72 and 74, it will not detract from the longer-range focus of the views – which is the sea and the north Clare coast. In addition, the proposed road development will open up significant new views of the coast and the sea – especially travelling from Na Foráí Maola Thair, south to the R336.

Moderate short-term and slight medium-term negative landscape planning impact

#### 12.5.4.2 Ch. 6+300 to Ch. 8+000 (Landscape Character Area 12)

- **Landscape Character:** In its operational phase the proposed road development, with its various sections of embankments and cuttings (latter especially at Ballagh/Bushypark) and major junction at Letteragh will contrast significantly with the open exposed, sometimes remote and elevated nature of the existing landscape and the small-scale and narrow nature of existing roads. Residential development is prominent along local existing local roads and the area is



increasingly under the influence of expanding city development. The proposed road development will tend to integrate over time within this increasingly urban influenced landscape.

Roadside lighting at the proposed N59 Letteragh Junction and along the proposed N59 Link Road North together with lighting from traffic will also introduce a significant new element into the landscape corridor of the proposed road development.

Roadside lighting is already present on the N59 Moycullen Road at the location proposed N59 Bushypark Junction. Likewise roadside lighting is already present between Gateway Retail Park – Ragoon Road – Rosán Glas – Bun A Chnoic, which accounts for much of the corridor of the proposed N59 Link Road South.

Significant short-term and moderate medium-term negative impact on local landscape character

- **Visual Impacts:** Significant negative visual impacts will continue to arise for residential properties, especially in the crossing of local roads at Letteragh and Ragoon and at tie-in to existing N59 Moycullen Road at Ballagh/Bushypark). Refer to **Section 12.5.4.6** and **Figures 12.1.05** to **12.1.06** and **Figures 12.1.12** to **12.1.13**.

Overall significant short-term and moderate medium-term negative visual impact

- **Landscape Planning:** The proposed road development falls within the context of Linear View 10 of the River Corrib from the N59 Moycullen Road and County View 76 of Lough Corrib from the Ballagh/Bushypark area. However, the proposed road development will not detract from the focus of the protected views (River Corrib and Lough Corrib) from these locations.

Slight short-term negative and no medium-term landscape planning impact

### 12.5.4.3 Ch. 8+000 to Ch. 11+800 (Landscape Character Area 11)

- **Landscape Character:** The proposed road development, including major new c.650m long bridge, high embankments and a c.320m long viaduct will introduce a dominant new feature into its landscape corridor. The new bridge will be prominent along the River Corrib and NIUG Sports Campus and from Menlo Castle, while the embankments and viaduct on the east of the River Corrib cross a very remote and elevated semi-natural landscape. The bridge and viaduct, and particularly traffic on the structures, will also be visible where elevated vantage points on the west side of the river allow for viewing across the River Corrib valley.

Given the existing environment, and the nature of this section of the proposed road development, integration of the development will be slow and structures such as the bridge and viaduct will permanently influence landscape character.

Other than at the portal entrance to Lackagh Tunnel and within Lackagh Quarry itself, is not proposed to provide roadside lighting along this section of the

proposed road development. Nevertheless, a level of lighting will be introduced from traffic movements particularly along elevated sections. Floodlight facilities will also be provided in association with the proposed all-weather sports pitch at NUIG Sports Campus. The floodlighting will allow for evening use of the facilities during darker evening months and will not have extended or night-time use.

Profound short-term and very significant medium negative impact on local landscape character

- **Visual Impacts:** Profound negative visual impacts will continue for residential properties, especially to either side of N59 Moycullen Road; through NIUG Sports Campus; at crossing of River Corrib, including at Menlo Castle; as well as at Bóthar Nua and Seanbóthar on east bank of River Corrib. Many properties are retained close to the elevated proposed road development both east and west of the N59 Moycullen Road (Ch. 8+300 to Ch. 8+700). This necessitates the use of retaining walls to minimise landtake and the presence of retaining structures will increase the visual impact of the development in these areas. Noise barriers are also provided along sections of the proposed road development. Whilst they will screen traffic, where they are located on the top of an embankment they will also accentuate the overall visual impact. The proposed noise barriers on the River Corrib Bridge will be transparent. Refer to **Section 12.5.4.6** and **Figures 12.1.06 to 12.1.08**.

Overall profound short-term negative visual impact and very significant medium-term impact

- **Landscape Planning:** The proposed road development crosses recreation and amenity zoned lands on west bank of River Corrib; the river itself and High Amenity Agricultural lands on east bank. While this will change the character of the area the proposed road development will not preclude on-going objectives for the landscape planning of the area.

The river crossing is not significant within the context of protected County View 76 of Lough Corrib from the Dangan area.

Significant short-term and moderate medium-term negative landscape planning impact

#### 12.5.4.4 Ch. 11+800 to Ch. 14+200 (Part of Landscape Character Area 11 as well as Landscape Character Area 5)

- **Landscape Character:** The proposed road development, which includes two major junctions (N84 Headford Road and N83 Tuam) and significant embankments and cuttings cuts across a rolling drumlin valley landscape and is within the wider setting for Ballindooley Lough. Traffic on elevated embankments will be particularly prominent from higher ground further east/northeast. Nevertheless, the landscape corridor of the proposed road development is also being increasingly influenced by urban edge development – especially along the N84 Headford Road and N83 Tuam Road.
- This section includes for the introduction of significant extent of proposed roadside lighting across an area, which is currently outside the limit of roadside

lighting in adjoining suburban areas. Notwithstanding proximity to the developed suburbs, roadside lighting, as well as lighting associated with traffic, will have the effect accentuating the presence of the proposed road development and emphasising the degree of change in the background rural/suburban edge landscape.

Significant short-term and moderate medium-term negative impact on local landscape character

- **Visual Impacts:** Very significant/profound negative visual impacts will continue for residential properties, especially to east of the crossing on Headford Road and through Castlegar generally. Refer to **Section 12.5.4.6** and **Figures 12.1.08** to **12.1.10**.

Profound short-term and very significant medium-term negative visual impact

- **Landscape Planning:** Impact will arise for the high amenity setting of Ballindooley Lough and from the historic village settlement of Castlegar.

The proposed road development will not have a significant impact on protected views V6 and V19.

Significant short-term and moderate medium-term negative landscape planning impact

### 12.5.4.5 Ch. 14+300 to Ch. 17+540 (Landscape Character Area 3)

The following operation-related aspects give rise to potential for landscape and visual impacts within this section of the proposed road development:

- **Landscape Character:** This section of the proposed road development is set within an urban influenced landscape. Nevertheless, the significant road infrastructure will give rise to impacts on local character – especially through the open recreational and amenity character of Galway Racecourse and to a lesser degree at Dougishka and Coolagh-Briarhill – which are already impacted by the existing N6 and city development.
- While roadside lighting is proposed through this area, much of the area already lies within the suburban context of the outer city where roadside lighting is a feature of the background landscape.

Significant short-term and slight medium-term negative impact on local landscape character

- **Visual Impacts:** Very significant negative visual impacts will continue for residential properties at Racecourse Avenue/Ballybrit Crescent and to a lesser degree at Coolagh-Briarhill. Refer to **Section 12.5.4.6** and **Figures 12.1.10** to **12.1.11** and **12.1.14**.

Very significant short-term and moderate medium-term negative visual impact

- **Landscape Planning:** Proposed road development passes through the edge of the recreation and amenity zoned landscape of Galway Racecourse and to the

west and south of the historic village settlement of Coolagh-Briarhill Village already overlooks existing smaller N6 junction.

Moderate short-term and slight medium-term negative landscape planning impact

#### 12.5.4.6 Visual Impact

On completion of construction, aspects such as earthworks, construction activity and disturbance are removed as impacting features. Nevertheless, impacts will continue to arise from the presence of the proposed road development which will remain prominent in the landscape until such stage as landscape proposals established and become effective. As such, operational-stage visual impacts 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 located 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 continue to arise from the physical built presence of the proposed road development, including its significant structures, elevated embankments, deep cuttings, 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. In open views, 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.

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 17, 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 includes for realignments/tie-ins to existing national, regional and local roads, together with drainage works and accommodation measures, all of which have potential for localised visual impacts. Local road realignment is important as many residential properties tend to be located along such roads and local direct impacts can arise.

A full schedule and description of visual impacts on properties is set out in the Visual Impact Schedule (VIS) Tables in **Appendix A.12.1** and on **Figures 12.1.01 to 12.1.14**. The findings are summarised in **Table 12.6** below.

In the pre-establishment stage 71 of the 352 locations (c.20%) will have an imperceptible impact. A further 166 locations (c.47%) will have a slight or moderate short-term impact. Eighty-five locations (c.24%) will have significant or very significant short-term visual impact. The remaining 30 locations (c.9%) will

experience profound short-term negative visual impact associated with the presence and early operation stage of the proposed road development. Refer to **Figures 12.1.01 to 12.1.14** for locations of properties.

As landscape measures establish and mature the level of visual impact will gradually recede so that in the post-establishment stage some 152 locations (c.43%) will have an imperceptible impact. A further 145 locations (c.41%) will have a slight or moderate medium-term impact. Thirty-two locations (c.9%) will have significant or very significant medium-term visual impact. The remaining 23 locations (c.7%) will continue to experience profound medium and longer-term negative visual impact associated with the proposed road development. Refer to **Figures 12.1.01 to 12.1.14** for locations of properties.

The properties with on-going significant and very significant visual impact are either located in more remote and rural areas and are in proximity to the proposed road development, or are in suburban areas and are located directly adjacent to the proposed road development.

**Table 12.6: Summary of Visual Impacts**

Impact	Construction Stage	Pre-establishment Stage	Post-establishment Stage
Imperceptible	36	71	152
Not Significant/Slight	79	82	74
Moderate	90	84	71
Significant	80	67	32
Very Significant	25	18	0
Profound	42	30	23
<b>Total</b>	<b>352</b>	<b>352</b>	<b>352</b>

#### 12.5.4.7 Photomontages

Photomontages have been prepared of the proposed River Corrib Bridge and for other areas along the route of the proposed road development.

The Photomontages of the proposed River Corrib Bridge and associated infrastructural works from the surrounding landscape are included in **Appendix A.12.2**. For some locations the views are summer-time, for others the views are winter-time and for some locations both summer and winter views are used. In any case, it is clear that the density of vegetation in the local landscape means that the potential for increased winter-time visibility is not so pronounced in this landscape setting.

For each view three options are presented starting with the 'As Existing' view. Thereafter, a view is shown with the proposed road development simply 'overlaid' on the existing view. This assists the viewer in accurately locating the proposed road development in the view before it is set into the image. The final version is an 'As Proposed' view and this shows what, if any, of the proposed road development will be visible.

A feature of all of the more distant views is the extent to which the landscape visually absorbs the proposed road development and bridge. This characteristic ensures that the proposed road development will not dominate views within its wider landscape setting. As such the proposed road development and bridge is either entirely screened or only partly glimpsed in views from Quincentenary Bridge (View 1); from the Coolough-Menlough Road (Views 2, 3 & 4); from Glenlo Abbey (View 8); and from the N59 Moycullen Road in the vicinity of Bushypark House (Views 9, 10, 11 & 12); and from more southern parts of the NIUG Sports Campus (View 15).

The bridge becomes an increasingly prominent feature in closer range views, especially from the river bank (Views 6, 7, 16, 20, 21 & 22); from Menlo Castle (Views 5, 6, 20 & 21); and from the grounds of NIUG Sports Campus (Views 14, 16, 17, 18, 19). That said the wooded nature of the background river edge landscape means that the structure appears out of a wooded backdrop to openly cross the wide river in a simple single span. The effect is to maintain open views along the river corridor and to/from Menlo Castle.

The greatest impact is from the existing sports grounds of NIUG on the west bank of the river where users of the sports facilities and the river-side amenities gain direct access to the underside of this large structure.

Photomontages have also been prepared from a range of other areas along the route of the proposed road development. These views, which are included in **Appendix A.12.3**, are presented in two formats: first showing landscape works immediately after planting and second: with established planting c.15 years after planting. The views help illustrate the nature of the physical and visual changes, as well as the associated effects likely to arise as a result of the proposed road development.

### 12.5.5 Landscape and Visual Impact of related or associated developments

Other aspects of the construction and operation of the proposed road development have potential for landscape and visual impacts. Construction-related aspects such as site compounds, construction traffic on the local roads, temporary road closures and diversions, works associated with local road tie-ins, provision of footpaths and cycleways, stream diversions, culverts, drainage works, drainage ponds, service diversions, including diversion of overhead transmission lines will give rise to slight to moderate localised temporary impacts.

ESB's 110kV overhead transmission lines are to be locally modified and/or diverted at four locations namely Cappagh, Castlegar, Parkmore, and Coolagh, Briarhill, as indicated on **Figures 15.1.1 to 15.1.15** (e.g. Ch. 13+525; Ch. 14+200 to Ch. 14+450 – Parkmore Link Road Junction; Ch. 16+20 to Ch. 17+100 – Coolagh Junction). These minor modifications/diversions will give rise to imperceptible to slight landscape or visual impacts.

Minor adjustments, including short re-alignments, undergrounding, provision of new poles and local raising of existing low voltage transmissions lines (10kV, 38kV) is also proposed at a number of locations as indicated on **Figures 15.1.1 to 15.1.15** (e.g. Ch. 3+780; Ch. 3+875; Ch. 6+675; Ch. 8+250 to Ch. 8+500; Ch.

2+025 – N59 Link Road South & Parkmore Link Road). These will not give rise to adverse landscape or visual impacts. Refer to **Chapter 15, Material Assets Non-Agriculture** for further details.

As well as the mainline, the proposed road development will involve the construction of roundabouts, at-grade junctions, grade-separated junctions, local roads, tunnel service buildings and a c.30m wide wildlife overbridge at Castlegar (Ch. 12+700).

East of the River Corrib roadside lighting is to be provided at the main junctions between the R336 Bearna West Roundabout and the N59 Letteragh Junction; along the full length of the N59 Link Road South, including around the Gateway Retail Park Junction; along the full length of the N59 Link Road North, including at the Bushypark Junction on the N59 Moycullen Road. Roadside lighting is already present along the part of the corridor of the N59 Link Road South between Gateway Retail Park – Ragoon Road – Rosán Glas and Bun A Chnoic. Roadside lighting is also already present along the N59 Moycullen Road at Bushypark.

West of the River Corrib roadside lighting is to be provided at the Lackagh Tunnel Portal; along the full length of the mainline of the proposed road development from Lackagh Tunnel, via the N84 Headford Road Junction to the N83 Tuam Road; along the City North Business Park Link; the Parkmore Link Road; at the Galway Racecourse Tunnel Portals; and along the Briarhill Business Park Road, the Ballybrit Crescent Junction, the R339 Monivea Road, Lynch Junction, Briarhill Link, Coolagh Junction and section of R446 within the proposed road development. Roadside lighting is already present along the N83 Tuam Road, within Parkmore Business Park, along Ballybrit Crescent, along R339 Monivea Road, along Briarhill Business Park Road, and along Bóthar na dTreabh, at the Coolagh Roundabout, and for 300m east along the existing N6.

Where not already a feature of the landscape, the introduction of roadside lighting will emphasise the degree of change in the rural landscape brought about by the proposed road development and associated traffic use. In many central and eastern areas the proposed road development passes through a suburban or suburban edge landscape where roadside lighting is already a feature. The most significant area of additional roadside lighting runs from Lackagh Quarry east to the proposed N83 Tuam Road Junction.

Operational aspects such as gantries and other signs, lighting columns, noise barriers, safety barriers, boundary and other fencing are all features typical of road development. In general, such aspects will give rise to slight localised and short-term impacts, however, taller noise barriers (>2.5m) on elevated sections of embankment located to either side of the N59 Moycullen Road crossing will further accentuate already significant visual impact for residential properties in this area. Where present, noise barriers will also have a beneficial effect in reducing the visibility of traffic from nearby residential properties. Transparent noise barriers will be used on the proposed River Corrib Bridge. Tunnel service buildings are to be provided adjacent to the two tunnels at Lackagh Quarry (Ch. 11+300) and Galway Racecourse (Ch. 14+950). The former building is to be located within the excavated quarry floor and will have no landscape or visual impact. The latter building is to be provided close to the boundary with Racecourse Business Park,

where it will not give rise to landscape or visual impact. Likewise, the proposed re-organised stabling and parking at Galway Racecourse is in keeping with the surrounding context and will not give rise to adverse landscape or visual effects. Tunnel portals are associated with the two tunnels – however, these features are set into the landscape (as in Lackagh Quarry) or set low in the landscape (as at Galway Racecourse). The proposed wildlife overpass at Castlegar (Structure S12/02, Ch.12+700) will provide a wide landscape/planted bridge for connection of local habitats. The proposed new sports pitches at NUIG Sports Campus are located on existing pitches and while floodlighting is also to be provided, this is not out of place in the context of the surrounding sport campus.

## 12.6 Mitigation Measures

### 12.6.1 Introduction

Consideration was given to avoidance of significant landscape and visual impacts during the route corridor selection and during the design process for the proposed road development. 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 NRA/TII guidance documents:

- Guidelines for the Creation and Maintenance of an Environmental Operating Plan (2007)
- A Guide to Landscape Treatments for National Road Schemes in Ireland (2006)
- Guidelines on the Implementation of Landscape Treatments on National Road Schemes in Ireland (2012)
- Guidelines for the Protection and Preservation of Trees, Hedgerows and Scrub Prior to, During and Post Construction of National Road Schemes (2006)
- Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads (Revision 1, 2010)
- Standard Construction Details (2000-2017)
- Specification for Works (2000-2017)

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

Landscape mitigation proposals shall take 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 the following or in **Chapter 8, Biodiversity**, seeding and planting proposals, including species and planting type and species shall be in accordance with Chapter 6 of the Landscape Guidelines, adapted as required for local environmental and landscape conditions.



## 12.6.2 Construction Phase

During the construction stage, the Construction Environmental Management Plan (CEMP) in **Appendix A.7.5** will be finalised and adopted by the Contractor'. Adherence to the CEMP will be a contract requirement and 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 CEMP includes the mitigation set out within this chapter and incorporates these measures as part of their implementation.

Mitigation will ensure that the works will have continuous monitoring under the Construction Environmental Management Plan so as to ensure adequate protection of areas outside of the construction works.

Specific measures shall ensure that:

- Site machinery shall operate within the proposed road development construction area
- Storage areas shall be located so as to avoid impacting further on existing residential and other property, woodlands, trees, hedgerows, drainage patterns, etc.
- Solid site hoarding of minimum 2.0m in height shall be provided alongside construction works adjoining residential property or recreational amenities
- Solid hoarding or similar, of minimum 2.0m in height shall be provided along any side of a proposed construction compounds, where they are located within 100m of residential properties
- Construction compounds shall be fully-decommissioned and reinstated to their pre-construction condition at the end of the construction contract
- 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, some scope may exist 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

## 12.6.3 Operational Phase

Measures proposed to mitigate the landscape and visual impacts of the operation stage of the proposed road development are considered under Project-wide Measures and Specific Measures. Project-wide measures are described in the following section and in **Table 12.7**, while specific measures are set out in detail in **Table 12.8**. The measures are also identified on **Figures 12.4.01 to 12.4.14**.

### 12.6.3.1 Project-wide Landscape Measures

Project-wide 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 existing field boundaries and hedgerows along the proposed road development. Where appropriate trees species as noted in Mitigation **Tables 12.7** and **12.8**, 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 semi-natural meadows (see Landscape Guidelines, Section 6.1: Grassland Treatments) where it is considered appropriate to have open sections along the proposed carriageway. Open sections shall allow for views to the wider landscape where they do not impinge on requirements for screening for residential properties or other amenities.

Proposals will ensure that planting is distributed along the proposed road development and the associated local road realignments and will vary from locally appropriate hedgerow reinstatement, with tree-planting, where appropriate; to wider plantings of landscape and screen planting; to the establishment of larger areas of scrub/shrub planting and new woodland for integration of the development within the wider landscape. The approach will provide a density and diversity of plantings and improve the biodiversity structure of the new landscape (see Landscape Guidelines, Section 6.2: Tree and Shrub Treatments).

Treatments will take into consideration the assessment and recommendations of **Chapter 8, Biodiversity** and will ensure that, 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-invasive, non-native plants, *e.g.* within residential areas where existing garden plantings are disturbed.

Where areas are in cut or fill, a grass or meadow sward will be established over the slope except in areas of cutting through stable rock (see Landscape Guidelines, Section 4.2: Cuttings and Embankments). 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 semi-natural grass sward. Slopes may also be seeded to wildflower grassland and hydro-seeding may be utilised for seeding of steep slopes. It is expected that significant extent of rock cutting will arise on the proposed road development. Stable rock slopes will be retained as an exposed face for natural colonisation and as a local landscape features.

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 scrub plantings and native woodland species (see Landscape Guidelines, Section 4.6: Additional Plots and Other Areas). Such planted 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 proposed these will be securely fenced and planted with locally appropriate hedgerows, shrubs and/or screen planting located along the proposed development boundary to minimise any visual impact from off road areas. However, it is noted that these features also offer the potential to provide for improved landscape diversity and habitat.

Proposed planting will generally be established using bare-root transplants, whips and feathered plants 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 the **Chapter 8, Biodiversity**. These requirements have been adapted and further detailed as appropriate to particular areas as set out in **Table 12.8**.

Where used, tree species will be selected from a list of primarily native, naturalised and indigenous species, 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 12.8**.

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 meadow will be thinly topsoiled (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.

Where lighting is proposed, the 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 DMRB TD 34-91. The detailed lighting design shall be completed in a manner, which will minimise glare and will ensure that light-spill effect is minimised.

In specific locations barriers and/or earth bunds may 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 17, Noise and Vibration** outlines the assessment of noise impact and the requirements for such mitigation.

**Table 12.7: Project-wide Landscape and Visual Mitigation Elements and Treatments** (Note Proposed Road Development has been abbreviated to PRD in the following table)

Reference	Description of Measures
Cut slopes on mainline, link roads and local roads	<p>Cut slopes 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 slopes shall be seeded to a low maintenance non-agricultural grassland or to a diverse grass/wildflower sward, as appropriate. Steep slopes may be hydro-seeded.</p> <p>Where exposed, stable rock cuttings / slopes will be retained as a landscape feature along the proposed road corridor.</p>
Embankments on mainline, link roads, and local roads	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 slopes shall be seeded to a low maintenance non-agricultural grassland or to a diverse grass/wildflower sward, as appropriate. Steep slopes may be hydro-seeded.
Verges & Roundabouts on mainline, link roads, and local roads	Verges will 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 or gently flowing gradients, with minimum 200mm topsoil. Areas shall be stone buried or raked will be free of rubble and stones over 25mm diameter. Verges and roundabouts will be seeded to low-maintenance seed mix.
Ponds, swales, 'V-drains' etc.	<p>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 grass/wildflower sward, allowing for natural development over time. Steep slopes on pond edges and 'V-drains' may be hydro-seeded.</p> <p>Areas around ponds shall be a diverse landscape of low maintenance grassland/species-rich grass wildflower sward and plantings of scrub planting and/or low-canopy woodland and shrub planting. Hedgerows of blackthorn and hawthorn, hazel</p>

Reference	Description of Measures
	<p>and holly, without tree species, shall be established along non-roadside boundaries.</p> <p>Non-palisade type fencing (e.g. paladin or timber and anti-climb netwire fencing) shall be secure pond areas.</p>
Noise barriers / bunds	<p>Where possible hedgerow scrub and shrub planting and/or low-canopy woodland 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.</p> <p>Low-canopy and/or shrub planting of native species shall be established on the off road face of bunds. The planting shall include ash*, birch, blackthorn, elder, hawthorn, hazel, holly, rowan and/or willow species as appropriate. Plants shall be 90 to 120cm in height at planting.</p> <p>* <b>Note:</b> Due to the risk of Ash Dieback (<i>Chalara fraxinea</i>) and until further notice, ash (<i>Fraxinus</i> species) is no longer approved by the TII for planting schemes. This does not impact on the use of Mountain ash – also known as rowan (<i>Sorbus aucuparia</i>).</p> <p>Transparent noise barriers will be used on the River Corrib Bridge</p>
Plants and planting areas	<p>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.</p> <p>Full planting area will be free of stones over 50mm in diameter.</p>
Grass areas	<p>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.</p>
Unauthorised access, parking and/or encampment	<p>Landscape proposals shall avoid creating areas considered as being suitable for unauthorised parking and shall use landscape proposals to deter and prevent such use.</p>
Remnant areas	<p>Any post-construction remnant lands shall be treated to a diverse range of grassland and/or planting proposals to include a minimum 30% planting, amended as locally appropriate. The remaining area shall be treated as locally appropriate low maintenance grass/species-rich sward.</p>

### 12.6.3.2 Specific Landscape Measures

Specific mitigation measures are set out on **Figures 12.4.01 to 12.4.14** and in **Table 12.8**. 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.

All of the following specific mitigation measures will be taken account of in the detailed design and implementation of landscape measures:

- 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 of the proposed road development
- Locations where rock is encountered in cuttings. Such rock faces may be retained as geological features of the corridor of the proposed road development
- The location and integration of noise barriers within the landscape design
- Clearance zones (TD19 - Safety Barrier Standards)
- Sight-lines, including at junctions and to carriageway signage, *etc.*

A series of significant retaining walls, and a bridge over the N59 Moycullen Road, are proposed in the Dangan area between Ch. 8+300 and Ch. 8+670. This is both an existing residential area and a gateway into the city. Where feasible reinforced earth retaining wall approaches will be incorporated so as allow for a green landscape finish to all or part of the retaining structures. A limestone finish will be used where structural walls are required and for the abutments of the proposed bridge over the N59 Moycullen Road. The stone will consist of natural limestone, matching the character of the local stone, with a strong horizontal axis of between 5 to 1 and 7 to 1 (*i.e.* horizontal to vertical dimension).

Landscape Measures also take account of the specific protection and mitigation measures detailed in **Chapter 8, Biodiversity**. In particular, the measures include:

- Retained habitats, trees and hedgerows on land-take boundaries, *etc.* will be fenced-off and protected during construction works
- Specific measures are proposed at a number of locations for mitigation of potential impact on Bat species. This includes:
  - the provision of artificial bat roosts – with specific planting to encourage use
  - the provision of a planted wildlife overbridge (Ch. 12+700) with tie-in planting to local hedgerows and proposed planting on the boundary of the proposed road development, which will maximise potential benefit and use
  - dense planting, with trees for improvement of connectivity along the boundary of the proposed road development:
    - west of the crossing of the L1323 Letteragh (Ch. 7+200 – Ch. 7+280)

- along embankments to either side of the proposed bridge over the River Corrib
- between the crossing of the N84 Headford Road at Ballindooley and School Road at Castlegar
- o hedgerow planting for improvement of connectivity of habitats to the east of Menlo Castle
- o hedgerow and copse planting for enhancement of foraging habitat to the north of Menlo Castle
- In order to deter Barn Owls from foraging close to the proposed road development, embankments and cuttings, other than rock cuttings or cut slopes left to naturally regenerate, will be densely planted with low growing scrub (e.g. blackthorn, hawthorn) from Ch. 8+550 to Ch. 17+500
- In order to deter Barn Owls from over flying the proposed road development, planting of closely-spaced trees (approx. 2m centres) greater than 3m in height will be established along the top of the embankments between Ch. 9+600 and Ch. 10+100
- All mitigation planting will take place at the earliest opportunity feasible during the construction stage so as to maximise establishment prior to road opening

**Table 12.8: Specific Landscape and Visual Mitigation Elements and Treatments**  
(Note Proposed Road Development has been abbreviated to PRD in the following Table)

Reference	Location	Description of Measures
6.0m wide Screen Planting	Planting at 1.0m centres for visual screening shall be of a minimum of 6m in width. The planting shall extend for a minimum of 100m to either side of any adjoining residential property or amenity. (refer to <b>Figures 12.4.01 to 12.4.14</b> )	Planting will include a dense planting at 1m centres of alder, birch, blackthorn, elder, geulder rose, holly, hawthorn, hazel, rowan, and willow species. Shrubs shall be planted at between 60 to 90cm in height.  Scots pine of minimum 60cm in height at planting shall comprise 20% of the overall plant numbers and holly at a minimum of 45cm in height shall comprise a further 15%.  Tree species, planted equally at half-standard (6-8cm girth) and standard size (8-10cm girth), shall comprise minimum 10% of the mix.
3.0m wide Screen Planting	Where space is limited 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. (refer to <b>Figures 12.4.01 to 12.4.14</b> )	Planting will include a dense planting at 1m centres of alder, birch, blackthorn, elder, geulder rose, holly, hawthorn, hazel, rowan, and willow species. Shrubs shall be planted at between 60 to 90cm in height.  Scots pine of minimum 60cm in height at planting shall comprise 20% of the overall plant numbers and holly at a minimum of 45cm in height shall comprise a further 15%.

Reference	Location	Description of Measures
		Tree species, planted equally at half-standard (6-8cm girth) and standard size (8-10cm girth), shall comprise minimum 20% of the mix.
Stone Wall Boundaries	Stone walls as indicated on <b>Figures 12.4.01 to 12.4.15)</b>	Where indicated stone walls will be replaced along impacted sections of property and road boundaries on local roads. The stone from the disturbed sections of existing walls will be retained and re-used (generally granite to west; limestone to east) where possible to reinstate these new boundaries. The boundary walls may be backed by hedgerows of locally appropriate species, i.e. blackthorn, hawthorn and holly to west and hazel, hawthorn and holly to east. Elsewhere, where stone walls are removed the stone will be retained and made available for re-use by the adjacent property owners for the construction of a new stone wall on their side of the proposed development boundary if they wish.
Boundary Hedgerow	Typical double staggered hedgerow with tree planting, where locally appropriate	<p>Primarily blackthorn (30%), hawthorn (40%) and holly (10%) hedgerow in west interspersed with other species (20%) such as elder, willow, and those found locally.</p> <p>Primarily hazel (30%), hawthorn (40%) and holly (10%) hedgerow to east interspersed with other species (20%) such as blackthorn elder, willow, and those found locally.</p> <p>Hawthorn plants shall be of c.90cm in height and planted at 50cm centres in each of two double staggered rows, 25cm apart. Other plants of c.50cm in height shall be interspersed.</p> <p>The hedgerow may be interspersed with 'half-standard-sized' (6-8cm girth) alder, birch and/or oak trees planted at random spacings but averaging a min. of 1 tree per 25 linear metre. Limited tree species, such as birch and mountain ash may also be included as 'whips' at 150cm in height.</p>
Retaining Walls and structure over the N59 Moycullen Road	Use of reinforced earth retaining systems and limestone finishes for structural elements. Retaining Wall Structures R08/01; R08/02; R08/07 & R08/04; and Bridge Structure S08/02 (Ch. 8+300 to Ch. 8+670)	<p>Where feasible reinforced earth retaining wall approaches will be incorporated so as allow for a green landscape finish to all or part of the retaining structures.</p> <p>Planting of trees shall also be provided along the base of the structure. These shall include smaller growing species such as alder, birch and rowan planted as Selected Standards (i.e. 14cm girth or greater)</p> <p>A limestone finish will be used for the external finish of the abutments for the proposed bridge over the N59 Moycullen Road and where structural walls are required. The stone will consist of natural limestone, matching the character of</p>



Reference	Location	Description of Measures
		local stone, with a strong horizontal axis of between 5 to 1 and 7 to 1 (i.e. horizontal to vertical dimension).
Bat habitat enhancement	New 2m wide tree and shrub hedgerow, with occasional planted copses located north and east of Menlo Castle.	<p>New hedgerow of native species will be established with plants at 0.5m staggered centres in each of 5 rows located 0.5m apart to sub-divide existing open fields.</p> <p>Standard-sized trees species (min 8-10cm girth, 2.4m high) will be planted at 15m staggered centres in each of the 3 central rows. Diverse range of shrub species will be planted between trees in the central rows and throughout the outer 2 rows.</p> <p>Circa 15m diameter woodland copses will be established within open fields using similar approach, densities and species.</p> <p>Planting will be protected by stock-proof fence, c.1.25m high located at 1.0m offset to either side of the outer row of the new hedgerow.</p> <p>Tree species to include alder, birch, oak, rowan, planted as standards (as above) and whips (1.25m high). Shrubs to comprise mainly blackthorn, hawthorn and hazel (combined 60%), with elder, holly, spindle, willow etc.</p> <p>Hawthorn plants shall be of between c.90cm in height and all other shrubs shall be c.60cm in height.</p>
Wildlife Overpass	Ballindooley / Castlegar Structure S12/02 (Ch. 12+700)	<p>Wildlife overpass (c.30m wide) will be landscaped to provide for connective habitat across proposed road development. Planting to consist of a central narrow grass path bounded on either side by tree-lined hedgerows of native species.</p> <p>Soil depths to vary from minimum c.45cm depth at edges to c.1.5m depth along centre-line of both hedgerows. Planted element of both hedgerow lines will be c.2m wide with standard-sized trees (min 8-10cm girth, 2.4m high) planted at 3m staggered centres in each of 2 rows in each hedgerow. Diverse range of shrub species will be planted between trees and along the line of each hedgerow.</p> <p>Planting to tie-in to proposed planting leading east and west on upper slopes of cuttings on both sides of the proposed road development. This will form a continuous hedgerow/planted network.</p>

Reference	Location	Description of Measures
		<p>Tree species to include alder, birch, oak, rowan, planted as standards (as above) and whips (1.25m high). Shrubs to comprise mainly blackthorn, hawthorn and hazel (combined 60%), with elder, holly, spindle, willow etc.</p> <p>Hawthorn plants shall be of between c.90cm in height and all other shrubs shall be c.60cm in height.</p>
Barn Owl Tree Planting	Typical double staggered treeline with dense underplanting, between Ch. 9+600 and Ch. 10+100.	<p>Deterrent tree planting to comprise alder, birch and/or rowan planted at 3m in height (min 12-14cm girth) and at 2.0m centres in each of 2 rows 1.5m apart.</p> <p>Dense low scrub planting to comprise blackthorn (50%), hawthorn (20%), hazel (10%) and holly (10%) interspersed with other species (10%) such as elder, willow, and those found locally.</p> <p>Hawthorn plants shall be of c.90cm in height and planted at 50cm centres. Blackthorn and other plants shall be of c.50cm in height and planted at 50cm centres in staggered rows, 50cm apart.</p>
Barn Owl Scrub Planting	Dense low scrub planting on all embankments and cut slopes (other than rock cuttings or cut slopes left to naturally regenerate) from Ch. 8+550 to Ch.17+540.	<p>Dense low scrub planting to comprise blackthorn (50%), hawthorn (20%) hazel (10%) and holly (10%) interspersed with other species (10%) such as elder, willow, and those found locally.</p> <p>Hawthorn plants shall be of c.90cm in height and planted at 50cm centres. Blackthorn and other plants shall be of c.50cm in height and planted at 50cm centres in staggered rows, 50cm apart.</p>
Compensatory Habitat Areas (CHA)	Along Proposed Road Development Refer to 'CHA' locations on <b>Figures 12.4.01 to 12.4.14</b>	Areas identified for compensatory habitat for mitigation of potential ecological impacts. Refer to <b>Chapter 8, Biodiversity</b> for further detail.

\* **Note:** Due to the risk of Ash Dieback (*Chalara fraxinea*) and until further notice, ash (*Fraxinus* species) is no longer approved by the TII for planting schemes. This does not impact on the use of Mountain ash – also known as rowan (*Sorbus aucuparia*).

## 12.7 Residual Impacts

### 12.7.1 Introduction

Residual Impacts are outlined separately in the following sections under Construction Phase and Operational Phase.

### 12.7.2 Construction Phase

In landscape and visual terms, proposed mitigation measures will have limited effect during the construction stage, and relate more to the orderly development, protection of landscape on and external to the landtake and to minimisation of visual disruption and impact, where possible. For this reason, it is considered that the potential negative landscape and visual impacts as outlined in **Section 12.5.3** of this chapter will continue to arise, even with mitigation, during the temporary and short-term construction phase of the proposed road development.

### 12.7.3 Operational Phase

During the initial operation stage landscape and visual impacts will continue to arise from the physical presence and operation of the proposed road development. The proposed road development will be a significant and prominent new element in the landscape – at least until such stage as landscape mitigation proposals establish and become increasingly effective. As such, initial operational-stage landscape and visual impacts will continue to be pronounced and negative in the short-term (*i.e.* pre-establishment stage). With the development of mitigation planting, the significance and severity of landscape and visual impacts will gradually abate over time.

Negative visual impact will also continue to arise for residential and other properties located close to or adjoining the boundary of the proposed road development for some time (*i.e.* post-establishment stage).

Therefore, significant or notable residual landscape impacts will continue to arise:

- Along the edge of Sruthán Na Libeirtí, Bearna
- On the open elevated landscapes of Ballagh, Ragoon, Letteragh, Barnacranny and Dangan Upper
- On the recreation sports and amenity landscape of NUIG Sports Campus
- On the lowland landscape valley of the River Corrib, and the setting of Menlo Castle
- On the limestone landscape of Menlough and Coolough
- On the rolling landscape through Castlegar, south of Ballindooley Lough

Locations of these significant landscape impacts are provided on **Figures 12.4.01 to 12.4.14**.

Significant or notable residual visual impacts will continue to arise for properties:

- At the crossing of local roads north and northeast of Bearna (Foraí Maola Road, Troscaigh Road, Ann Gibbons Road, Aille Road)
- At the crossing of local roads northwest of Galway (Cappagh Road, Ballymoneen Road, Ragoon Road and Letteragh Road)
- To either side of the crossing of the N59 Moycullen Road north of Galway (The Heath, Barnacranny, Ard na Locha, Aughnacurra and at Bushypark/Ballagh)
- On the recreation sports and amenity landscape of NUIG Sports Campus
- On the lowland landscape valley of the River Corrib, and setting of Menlo Castle
- At the crossing of Bóthar Nua and Seanbóthar north/northeast of Galway City
- At the crossing of the N84 Headford Road, at Castlegar, (including crossing of School Road) and at the N83 Tuam Road, northeast of Galway
- At Ballybrit/Parkmore, at Racecourse Avenue, Ballybrit Crescent, Monivea Road and Coolagh-Briarhill east of Galway

Details of the visual impacts are provided in **Table 12.6** above, in **Appendix A.12.1** and are indicated on **Figures 12.4.01 to 12.4.14**.

#### 12.7.4 Cumulative Impacts

This section of the chapter presents the assessment carried out to examine whether the proposed road development along with any other projects or plans could cumulatively result in a likely significant landscape and/or visual effects. The assessment has considered statutory city and county plans and associated planning registers; local area plans, including those for Bearna, Gaeltacht, and Ardaun and the Údarás na Gaeltachta' Strategic Plan.

The construction and operational stages of the proposed road development give rise to rise to significant, very significant and profound landscape and visual impacts. These impacts are generally focused within the immediate corridor of the proposed road development on the urban/rural edge of the city. To the west and north of the city much of the lands along the corridor are identified for agricultural and/or amenity uses. Further sports and amenity developments are likely within the grounds of NUIG Sports Campus on the west bank of the river. While there are some small areas of residential zoning at Ballymoneen, Ragoon, Letteragh, Ballindooley and Castlegar, development in these areas is unlikely to give rise to significant landscape and visual impacts or cumulative impacts. An area of enterprise, industrial and related zoning is indicated to the north and east of Galway Racecourse, but much of these lands are already developed within Parkmore Business Park.

The eastern end of the proposed road development falls within the area covered by the Ardaun Local Area Plan (LAP). The LAP proposes major development in the area, including new residential and commercial developments on c.81 hectares of an overall LAP area of c.164 hectares on the east side of the city. The existing M6/N6 corridor runs through the centre of the LAP area and the proposed road development ties-in to the existing road infrastructure within the LAP area. While

the LAP envisages significant changes to the landscape and visual setting of the area, it is likely that the measures proposed will be delivered on a phased basis over a long period of time. Nevertheless, depending on timing of delivery, scope exists for some limited or not significant cumulative landscape and visual impacts to arise.

The Galway Transport Strategy (GTS) also envisages further transport-related developments, including public transport and cycleway and greenway measures. However, these measures are unlikely to further adversely impact the landscape or visual setting along the proposed road development.

The Galway Harbour Port Extension project is at planning stage. However, if permitted, it is not expected that any significant cumulative landscape or visual effects will arise because of the separation distance between the proposed road development and the port location.

Other projects, such as the M17 Galway to Tuam Road Project (operational); the N18 Oranmore to Gort Road Project (operational); the N83 Tuam Bypass (operational); the M6 Motorway (operational); the M6 Motorway Service Area (pre-planning); the N59 Maam Cross to Oughterard Road Project (consented and pre-construction); and the N59 Maigh Cuilinn (Moycullen) Bypass Road Project (consented and pre-construction), are considered too distant from the proposed road development to give rise to cumulative landscape and/or visual effects.

In summary it is considered that there is limited potential for any significant cumulative impacts with other planned or potential developments and that these will not further increase the adverse or negative impacts associated with the proposed road development.

## 12.8 Summary

The proposed road development passes through a generally rural landscape on the western, northern and eastern edge of Galway City. Residential development is a prominent feature, especially along local roads from Bearna through to Letteragh; in suburban developments at Barnacranny and Dangan on north of the city; along the N84 Headford Road at Ballindooley and around the village settlement of Castlegar to the east/northeast of the city.

Some areas along the proposed road development are of very high landscape and visual quality and sensitivity - especially centred on the River Corrib and its broad lowland valley, with the riverside ruin of Menlo Castle and the high quality amenity and sports grounds of NUIG. The remote and semi-natural limestone and scrub covered landscapes of Menlough and Coolough are also of significant landscape quality and sensitivity, while Ballindooley Lough and Galway Racecourse are also of notable landscape quality.

Due to the nature of the baseline landscape, the construction and initial operational stage of the proposed road development will give rise to a range of significant, very significant and profound landscape and visual impacts, at least until such stage as the extensive landscape mitigation proposals establish and become effective. With the development of mitigation planting, the significance and severity of landscape and visual impacts will gradually abate.

Even with the development of mitigation planting, negative visual impact will continue to arise for residential and other properties located close to or adjoining the boundary of the proposed road development and where the proposed road development, including the major River Corrib Bridge, crosses sensitive landscape areas.

Therefore, the proposed road development will continue to have longer-term visual impacts for properties located immediately along the proposed road development where it is on high embankments and requires retaining walls. This is of particular note through Barnacranny/Dangan and at Castlegar as well as at dispersed locations along the proposed road development.

The proposed bridge and associated embankments and viaduct on the east bank of the river will have a permanent and significant impact on the semi-natural landscape valley and setting of the River Corrib as well as on the recreational and sports amenity of the northern end of NUIG Sports Campus.

## 12.9 References

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### **Electronic Sources**

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[www.buildingsofireland.ie](http://www.buildingsofireland.ie) – National Inventory of Architectural Heritage (NIAH) Historic Gardens and Designed Landscapes

[www.googleearth.com](http://www.googleearth.com) – Aerial photographic datasets

[www.bingmaps.com](http://www.bingmaps.com) – Aerial photographic datasets

[www.galwaycity.ie](http://www.galwaycity.ie) – Galway City Council

[www.galway.ie](http://www.galway.ie) – Galway County Council

[www.tiipublications.ie](http://www.tiipublications.ie) – TII (NRA) Publications