Response to An Bord Pleanála

Kingscourt to Woodland Route Comparison Report

December 2008

Prepared for EirGrid by SOCOIN/TOBIN Consulting Engineers

TOBIN CONSULTING ENGINEERS

SOCOIN

TOBIN
Patrick J. Tobin & Co. Ltd.

Response to An Bord Pleanála

Kingscourt to Woodland Route Comparison Report

Prepared on behalf of EirGrid:
EirGrid Plc
The Oval
160 Shelbourne Road
Ballsbridge

Prepared by:
TOBIN Consulting Engineers
Block 10-4
Blanchardstown Corporate Park

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF FIGURES, VOLUME II

1 EXECUTIVE SUMMARY

1.1 TERMS OF REFERENCE

TOBIN Consulting Engineers and Socoin have been commissioned by EirGrid to prepare a Route Comparison Report for the construction of a new 400kV transmission line to connect the existing Woodland Station (400kV) (County Meath) and the site identified for the new substation in the vicinity of Kingscourt, (County Cavan) along an Eastern Route Option east of Navan. The transmission line will be built and operated to 400kV construction standards.

In a meeting with An Bord Pleanála (ABP of "the Board") on the 14th of November 2007, the Board stated any application should show full consideration and robust examination of possible routes, including options east of Navan to take into account social and environmental constraints. The Board suggested that further analysis should be carried out from east of Navan to the Coast to support the 2002 study.

The Board also advised EirGrid that consideration should be given to:

- The coast as the boundary of the study area
- Use of an existing power line corridor.

The following are the details of outcomes from previous reports completed in 2002 (as mentioned above) and 2005 for power line routing options in this area.

North East 220kV Reinforcement Project, 2002

The 2002 study refers to the Initial Feasibility Study by ESB International for ESB National Grid (now EirGrid). The Initial Feasibility Study for North East Reinforcement Project assessed a possible 220kV overhead line between the existing Louth 220kV Station to the proposed Corduff 220kV Station via a new 220kV Station near Drybridge. The 2002 Feasibility Report covers two aspects of this initial feasibility study separately. Firstly a feasibility study for the new line route is described and secondly the options for upgrading the two 220kV lines are presented. The 2002 study stated that the construction of a 220kV Double Circuit line between Corduff and Drybridge would be an extremely difficult project to develop. The use of single circuit 220kV line would improve the project viability but would still encounter very major difficulties such as widespread public opposition.

Kingscourt – Woodland 400kV Feasibility Study, 2005

Against a backdrop of changes to grid reinforcement requirements, ESB National Grid commissioned ESB International to carry out a feasibility study in 2005 for a potential 400kV power line linking the existing Woodland 400kV station in South County Meath to a proposed 400kV station in the vicinity south of Kingscourt in either counties Cavan or Meath. The new 400kV station would also be a termination point for a possible North – South 275/400kV interconnector. This report detailed the options considered for potential overhead line route

corridors between the above termination points. Feasible routes were identified, analysed and presented. The 2005 report concludes that overhead line route options currently exist and are technically feasible at the time of this study. However, crossing points are limited in some areas and projected population growth will continue to impact on route selection at road crossings. This was considered particularly prevalent around urban areas such as Navan, Trim and Kells where development is influenced by the opportunities and pressures emanating from Dublin. The report recommends that further detailed route investigation be undertaken to fully assess the route options in order to develop a preferred route option.

1.2 INTRODUCTION

Socoin & TOBIN Consulting Engineers were commissioned by EirGrid in December 2006 to prepare a "Kingscourt to Woodland Constraints Report, July 2007" for the construction of a new 400kV line to connect the existing Woodland Station (400kV) (near Dunshaughlin, County Meath) and the site identified for the new substation near Kingscourt, County Cavan. This report was effectively undertaken in order to investigate further detailed route options, as suggested in ESB International Feasibility Report of 2005. This "Kingscourt to Woodland Constraints Report" was completed in July 2007 and considers route options, from here on called Western Route Options 1, 2, 3a and 3b.

Following the Strategic Infrastructure Board (SIB) meeting in November 2007, Socoin & TOBIN Consulting Engineers were commissioned by EirGrid to prepare a supplementary "Kingscourt to Woodland Route Comparison Report" for the construction of a new 400kV line to connect the existing Woodland Station (400kV) (near Dunshaughlin, County Meath) and the site identified for the new substation near Kingscourt, County Cavan. This Route Comparison Report considers alternative eastern route options, using the coast as the boundary of the study area. This report considers these supplementary route options, from here on called Eastern Route Options A, B1, B2 and C.

Refer to Figure 2.1 "Study Area Location Map" and 3.1 "Route Options Studied", Volume II.

The following Constraints were mapped for each route option, these include:

- Community (i.e. residential & commercial buildings);
- Landscape;
- Ecology (i.e. SAC, NHA, SPA);
- Water;
- Geology; and
- Cultural Heritage.

This Report will compare the Western Route Options and the Eastern Route Options, paying particular consideration to Landscape and Cultural Heritage. Community as a constraint is always considered the most significant constraint, however this constraint could be avoided (i.e.

the transmission line could be located at least 50m from dwellings). All of the other constraints mentioned above had similar impacts for both the Western and Eastern Route Options.

Refer to Figure 3.2 for "Route Options with Constraints" in Volume II.

A number of route options within the Eastern Study Area which were considered at an early stage were discarded due to the following reasons:

- High population density to the east of the study area (towards the Irish Sea) including the town of Drogheda excluded many possible route options;
- There is widespread ribbon development in the vicinity of towns including Mornington, Bettytown, Dornacarney, Bryanstown, Baltray, Painetown and Julianstown;
- Routing of a transmission line to the east of the study area would potentially affect the visual amenity of the Brú na Bóinne Complex, an Annex 1 World Heritage Site;
- There are a number of extensive beach recreation/holiday areas such as Mosney, Laytown and Bettystown;
- There area a number of SPA/NHA areas which had to be avoided including the River Nanny Estuary and Shore SPA 004158, Boyne Coast & Estuary SAC/ NHA 01957, Laytown Dunes/Nanny Estuary pNHA, King Williams Glen pNHA and Dowth Wetland pNHA. (Refer to Figure 3.3 "Designated Conservation Areas" in Volume II)

1.3 LANDSCAPE

A desktop study of the Meath County Development Plan 2007-2013 and the County Cavan Development Plan 2003-2009 including relevant published literature was carried out. Key landscape characteristics such as vegetation, major and minor ridgelines, land uses, designations and settlement areas were mapped using Ordnance Survey 1:50,000 mapping as a background. The Constraints Report highlighted the following points:

- Four of the Woodland to Kingscourt, Eastern Route Options (A, B1, B2 and C) pass through areas highly sensitive to transmission lines for substantially longer distances than the remainder of the Route Options 1, 2, 3a and 3b (i.e. a minimum of 7.4km).
- All of the eastern route options pass in close proximity to the Hill of Slane and Brú na Bóinne, both designated as landmarks. Although, views from these landmarks are not specifically listed on the Visual Amenity Map of the Landscape Character Assessment of County Meath, it is a planning policy to protect views towards key landmarks (Policy: HER POL 87 of the Meath County Development Plan 2007-2013 (Chapter 8.4.2, Page 342) mentions the policy regarding landmarks as follows – '*To maintain scenic vistas and panoramic views from key vantage points and towards key landmarks and features within the landscape.*'). Further to that, the Hill of Slane is a well-known viewing point and a transmission line in close proximity to this viewing point is likely to affect scenic views. It is expected that a transmission line so close to two major heritage sites will have a significant landscape and visual impact.

- The Landcape Chapter concluded that the Woodland to Kingscourt, Western Route Options (1, 2, 3a and 3b) overall have less negative impact than any of the Eastern Route Options (A, B1, B2 and C).

Refer to Figure 4.1 “Visual Impact Map”, Volume II.

1.4 CULTURAL HERITAGE

To assess the potential impact of the proposed development on the Cultural Heritage of the region the following data sources were consulted:

- National Monuments – A database available through the www.heritagedata.ie website;
- Record of Monuments and Places (RMP) – databases obtained from the national monuments section of the Department of Environment, Heritage & Local Government;
- Record of Protected Structures (RPS) – datasets obtained from Meath and Cavan Local Authorities;
- National Inventory of Architectural Heritage (NIAH) – Datasets obtained from the architectural section of the DoEHLG; and
- County Development Plans were also consulted with regard to further heritage designations.

The study area for the western route options (1, 2, 3a and 3b) covers a wide area and through careful route selection it has been possible to keep a significant distance between the most sensitive archaeological landscapes of Tara and Loughcrew and the proposed transmission line development. However there is a wealth of cultural heritage sites within the landscape and although it has been possible to avoid physically impacting upon any known sites, there is the potential that sites will be visually impacted upon.

There are however several sensitive areas to the east, including the Annex 1 World Heritage Site of Bru na Boinne, the historic town of Slane and the Slieve Breagh archaeological complex, all of which are located in close proximity to the proposed eastern route options (A, B1, B2 and C). It cannot be stressed strongly enough the significance of the sites through which the proposed eastern route options would pass. The Brú na Bóinne World Heritage Site in particular is of preeminent importance, should the development proceed along any of the proposed eastern route options it would have a very high negative impact upon this extremely sensitive, internationally renowned, archaeological landscape and potentially affect it’s status as an Annex 1 World Heritage Site.

Having reviewed the available data it is not considered that any of the Eastern Route Options (A, B1, B2 and C) are appropriate for this type of development and from an archaeological

perspective the eastern route options (1, 2, 3a and 3b) would have a less negative impact upon the cultural heritage of the region.

Refer to Figure 5.1 “Archaeological & Architectural Heritage”, Volume II.

1.5 EVALUATION OF CONSTRAINTS

Chapter six of this Report details how each route option was compared and contrasted. This section will synopsise these evaluations. The classification for each section of a route option has been determined by examining the level of sensitivity of the area that it passes through. For amenity reasons, every effort was made to design route options that minimised impact on Community. Refer to Table 6.1 “Matrix Developed for Classification of Route Options”.

Woodland to Kingscourt, Western Route Options: On analysis of Figure 6.1, it is apparent that all of the route options evaluated could be viable as they have similar characteristics when classified considering the relevant constraints as buildings, heritage, landscape, conservation areas, subsoils and surface water. The average length of the four route options is 58.15km. (Refer to Figure 6.3) In balance however, Route Option 3a and Route Option 3b both appear to be the preferred route options, as they have very similar merits. The Route Options 3a and 3b have the shortest lengths of “Very High Sensitivity” classifications, less “High Sensitivity” than Route Option 2, and only slightly more “High Sensitivity” than Route Option 1. They also have significantly less “Medium Sensitivity” compared to the other route options, and they have the lowest overall impact when all of the factors are taken into account.

In addition, these route options are about 54.9km long, which is significantly shorter than the other route options. Route Option 1 is 63.02km long and Route Option 2 is 59.69km in length. This would mean that the impacts associated with the transmission lines would be spread over a shorter distance in Route Options 3a and 3b.

Woodland to Kingscourt, Eastern Route Options: On analysis of Figure 6.2, it is apparent that these route options are not as viable as the Woodland to Kingscourt, Western Route Option as all of the route options (A, B1, B2 and C) have a long length of line which is “Very High Sensitivity” classifications, rating from 6.58km (Route A and B1) to 8.54km (Route C). This “Very High Sensitivity” is due mainly to the fact that these routes converge on the River Boyne near Slane. Route Options A, B1, B2 and C more importantly potentially affect the visual amenity of the Brú na Bóinne Complex an Annex 1 World Heritage Site. The average length of the four route options is 64.39km, which is longer than the westerly Kingscourt to Woodland route options.

From the analysis it is apparent that the Woodland to Kingscourt, Western Route Options (1, 2, 3a and 3b) are the best options for the erection of 400kV transmission line.

All of the Western Route Options evaluated could be viable as they have similar characteristics when classified. The average length of the four route options is 58.15km. (Refer to Figure 6.3) In balance however, Route Option 3a and Route Option 3b both appear to be the preferred route options. Route Options 3a and 3b have the shortest lengths of "Very High Sensitivity" classifications and "Very high, high or medium sensitivity" viewsheds are not crossed by this route option. Of these options 3b is considered the best route option, as its impact on relevant constraints as buildings, heritage, landscape, conservation areas, subsoils and surface water is the lowest. The length of line is shorter than the other route options, therefore the environmental footprint is minimised.

Refer to Figure 6.1 & 6.2 for "Classified Route Options with Constraints & Classified Route Options", Volume II.

2 BACKGROUND AND TERMS OF REFERENCE

TOBIN Consulting Engineers and Socion have been commissioned by EirGrid to prepare a Route Comparison Report for the construction of a new 400kV transmission line to connect the existing Woodland Station (400kV) (County Meath) and the site identified for the new substation in the vicinity of Kingscourt, County Cavan along an Eastern Eastern Route Option, east of Navan. The transmission line will be built and operated to 400kV construction standards.

In a meeting with An Bord Pleanála on the 14th of November 2007, the Board stated that any application should show full consideration and robust examination of possible routes, including options east of Navan to take into account social and environmental constraints. EirGrid was advised to carry out further analysis on possible routes from East of Navan to the Coast to support the Initial Feasibility Study from 2002 by ESB International, the Kingscourt to Woodland Feasibility Report completed by ESB International in 2005 and the Constraints Report completed by TOBIN from Kingscourt to Woodland in July 2007.

The Board also advised EirGrid that consideration should be given to:

- The coast as the boundary of the study area
- Use of an existing transmission line corridor.

North East 220kV Reinforcement Project, 2002

The 2002 study refers to the Initial Feasibility Study from 2002 by ESB International for ESB National Grid. The Initial Feasibility Study for North East Reinforcement Project assessed a possible 220kV overhead line between the existing Louth 220kV Station to the proposed Corduff 220kV Station via a new 220kV Station near Drybridge. The 2002 Feasibility Report covers two aspects of this initial feasibility study separately. Firstly a feasibility study for the new line route is described and secondly the options for upgrading the two 220kV lines are presented. The 2002 study figured that the construction of a 220kV Double Circuit line between Corduff and Drybridge would be an extremely difficult project to develop. The use of single circuit 220kV line would improve the project viability but would still encounter major difficulties, such as widespread public opposition.

Kingscourt – Woodland 400kV Feasibility Study, 2005

Against a backdrop of changes to grid reinforcement requirements ESB National Grid commissioned ESBI to carry out a feasibility study in 2005 for a potential 400kV line linking the existing Woodland 400kV station in South County Meath to a proposed 400kV station in the vicinity south of Kingscourt in either counties Cavan or Meath. The new 400kV station would also be a termination point for a possible North – South 275/400kV Interconnector. This report detailed the options considered for potential overhead line route corridors between the above termination points. Feasible routes were identified, analysed and presented. The 2005 report concludes that overhead line route options currently exist and are technically feasible at the time of this study.

However, crossing points are limited in some areas and projected population growth will continue to impact on route selection at road crossings. This was considered particularly prevalent around urban areas such as Navan, Trim and Kells where development is influenced by the opportunities and pressures emanating from Dublin. The report recommends that further detailed route investigation be undertaken to fully assess the route options in order to develop a preferred route.

Socoin & TOBIN Consulting Engineers have been commissioned by EirGrid in December 2006 to prepare a Constraints Report for the construction of a new 400kV line to connect the existing Woodland Station (400kV) (near Dunshaughlin, County Meath) and the site identified for the new substation near Kingscourt, County Cavan. This Constraints Report was completed in July 2007 and deals with route options, from here on called Western Route Options 1, 2, 3a and 3b.

Following the SIB meeting in November 2007, Socoin & TOBIN Consulting Engineers were commissioned by EirGrid to prepare a supplementary "Kingscourt to Woodland, Route Comparison Report" for the construction of a new 400kV line to connect the existing Woodland Station (400kV) (near Dunshaughlin, County Meath) and the site identified for the new substation near Kingscourt, County Cavan. This Constraints Report considers alternative eastern route options, using the coast as the boundary of the study area. This report considers these supplementary route options, from here on called Eastern Route Options A, B1, B2 and C.

Refer to Figure 2.1 "Study Area Location Map" in Volume II.

The purpose of this Route Comparison Report is to identify key environmental issues within the study area, in which the potential route options for the electricity transmission may have an impact. This report has been compiled based on desktop studies and site visits. The following Constraints were mapped for each route option, these include:

- Community (i.e. residential & commercial buildings);
- Landscape;
- Ecology (i.e. SAC, NHA, SPA);
- Water;
- Geology; and
- Cultural Heritage.

This Report will compare the Western Route Options and the Eastern Route Options, paying particular consideration to Landscape and Cultural Heritage. Community as a constraint is always considered the most significant constraint, this constraints could be avoided (i.e. the transmission line could be located at least 50m from dwellings). All of the other constraints mentioned above had similar impacts for both the Western and Eastern Route Options.

Refer to Figure 3.2 "Route Options with Constraints" in Volume II.

Potential route options identified during the desktop study were further studied during site visits, which included driving the route options to check all road and river crossings and to note any potential conflicts with the desktop study.

This report has been principally compiled by TOBIN Consulting Engineers. TOBIN Consulting Engineers have in turn appointed the following specialist sub consultants, who have also contributed to this report:

- Moore Group (Cultural Heritage); and
- Scott Wilson (Landscape).

The Route Comparison Report is compiled in two volumes:
Volume 1: Main Text; and
Volume 2: Constraint Maps.

3 PROJECT DESCRIPTION

3.1 SITE LOCATION

There are eight route options analysed in this report, these include four options for each of the locations mentioned below:

1. Woodland to Kingscourt, Western Route Options, (1, 2, 3A and 3b)
2. Woodland to Kingscourt, Eastern Route Options, (A, B1, B2 and C)

Woodland to Kingscourt, Western Route Options (1, 2, 3A and 3b) relate to the existing route corridor options explained and analysed in the Constraints Report, July 2007. The study area chosen is situated in a north-south axis between the existing Woodland 400kV substation in County Meath and a proposed substation near Kingscourt County Cavan. The study area is bounded to the north by Kingscourt town in County Cavan, to the south by Woodland substation in County Meath. The area is bound to the east by the Hill of Tara and the town of Navan and to the west by the towns of Trim and Athboy. Settlement locations within the study area include Athboy, Dunshaughlin, Kells, Navan, Nobber, Moynalty, Mullagh and Trim.

Woodland to Kingscourt, Eastern Route Options (A, B1, B2 and C), similar to above the study area is situated in a north-south axis between the existing Woodland 400kV substation in County Meath and a proposed substation near Kingscourt County Cavan. The study area is bounded to the north by Kingscourt town in County Cavan, to the south by Woodland substation in County Meath. The area is enclosed on the west by the Hill of Tara and the town of Navan and on the east by the Irish Sea. Settlements within the study area include Ratoath, Dunshaughlin, Slane and Nobber. This Report was requested by the Board following the Pre Application Meeting in November 2007.

3.2 METHODOLOGY

The methodology for this Route Comparison Report consisted of a desktop study and site visits as detailed below.

3.2.1 Desktop study

The initial task associated with this project was to define the study area based on the recommendations from An Bord Pleanála and the 2002 Feasibility Study. The study area is dominated by a number of features including the River Boyne and Brú na Bóinne Complex. Initial route options were marked on a map, avoiding these features, together with towns and villages. For amenity reasons, every effort was made to design route options that minimised impact on Community.

A number of general line route options were mapped and assessed and a desktop study was produced, which detailed the major physical and environmental constraints that may hinder a route option. Typical constraints included designated areas, areas of archaeological & architectural significance, scenic routes, vulnerable and sensitive landscapes along with all developments and infrastructure. It was established that the initial route option to the east of the study area along the existing 220kV power line was not feasible due to the number of one off buildings in this area.

A number of route options within the Eastern Study Area up for early consideration were discarded due to the following reasons:

- High population density to the east of the study area (towards the Irish Sea) including the town of Drogheda excluded many possible route options;
- There is widespread ribbon development in the vicinity of towns including Mornington, Bettytown, Dornacarney, Bryanstown, Baltray, Painetown and Julianstown;
- Routing of a transmission line to the east of the study area would potentially affect the visual amenity of the Brú na Bóinne Complex an Annex 1 World Heritage Site;
- There are a number of extensive beach recreation/holiday areas such as Mosney, Laytown and Bettystown;
- There area a number of SPA/NHA areas which had to be avoided including the River Nanny Estuary and Shore SPA 004158, Boyne Coast & Estuary SAC/ NHA 01957, Laytown Dunes/Nanny Estuary pNHA, King Williams Glen pNHA and Dowth Wetland pNHA. (Refer to Figure 3.3 ‘Designated Conservation Areas” in Volume II)

It should be noted that all of the Eastern route options A, B1, B2 & C pass in close proximity to Brú na Bóinne, and the Hill of Slane. Following from the mapping of all major constraints, a number of revised route options emerged as shown on Figure 3.1 “Route Options Studied” in Volume II.

To aid in the identification of residential dwellings and commercial buildings, GeoDirectory digital data was purchased. This provides the grid coordinates and use (residential, commercial, or both) of each postal address within the study area, except for known urban areas, which were already

highlighted as constraints. The dataset was imported into a Geographic Information System (GIS) as a set of point features and a buffer zone of 60m around each point was created. This buffer distance was chosen to allow for an approximate building size plus a 50m space around each building, as required by EirGrid. Note that the GeoDirectory was not purchased for towns and villages, as these areas are not suitable for this type of development and were already excluded from the study.

The route options were subject to site visits in order to verify the information gathered during the desktop study.

3.2.2 Site Visits

Site visits of the study area were undertaken in order to supplement existing mapping and information obtained during the desktop survey, and in particular to:

- Assess optimum crossing of roads, rivers and other obstacles (transmission lines etc.);
- Identify existing dwellings and recreational facilities;
- Identify existing commercial / industrial properties and concerns;
- Verify Scenic View Points;
- Verify Forestry areas (based on 1:50,000 mapping);
- Identify churches and schools;
- Assess the topography (identify steep areas unsuitable for erecting pylons in and hills to hide transmission lines behind); and
- Assess Planning Site Notices.

Roads near the route options were driven and all crossings points on roads were checked for sufficient clearances from existing dwellings or other possible constraints. In the event of narrow crossings the distance was measured between dwellings to check that the route options could be located at least 50m from dwellings. Also noted were any developments that were in progress and planning site notices. The locations of these were collected using a handheld GPS. All driveways or avenues that routes crossed were assessed and alternative route options were suggested where it would be possible to avoid crossing these.

In the event of the initial crossing point proving to be unavailable due to new developments or located close to schools, playing pitches etc., alternative crossing points were investigated in the immediate vicinity and details noted. All road and river crossings viewed were noted and the comments were given a number and mapped onto GIS for use in further refinement of the route options. Visual inspections were also taken at the River Boyne crossing points, general areas of high visibility, and potential substation sites.

After evaluating the data gathered from the site visits and the desktop study, further modifications and refinement to the line route options were completed. Refer to Figure 3.2 “Route Options with Constraints”, Volume II.

The highly populated area in the east of the study area, including the town of Drogheda and the Brú na Bóinne Complex, an Annex 1 World Heritage Site west of Drogheda, excluded many possible route options further to the east of the Study Area.

From the initial desk work assessment it was considered that Landscape and Archaeological and Architectural Impacts, should be dealt with in detail, given that Brú na Bóinne, Newgrange, Knowth, Dowth, the Hill of Slane the Hill of Tara are located within the study area. These two constraints are discussed in more detail in the following chapters

See Figure 3.1 below for a flow chart of stages in the identification of three route options for further assessment.

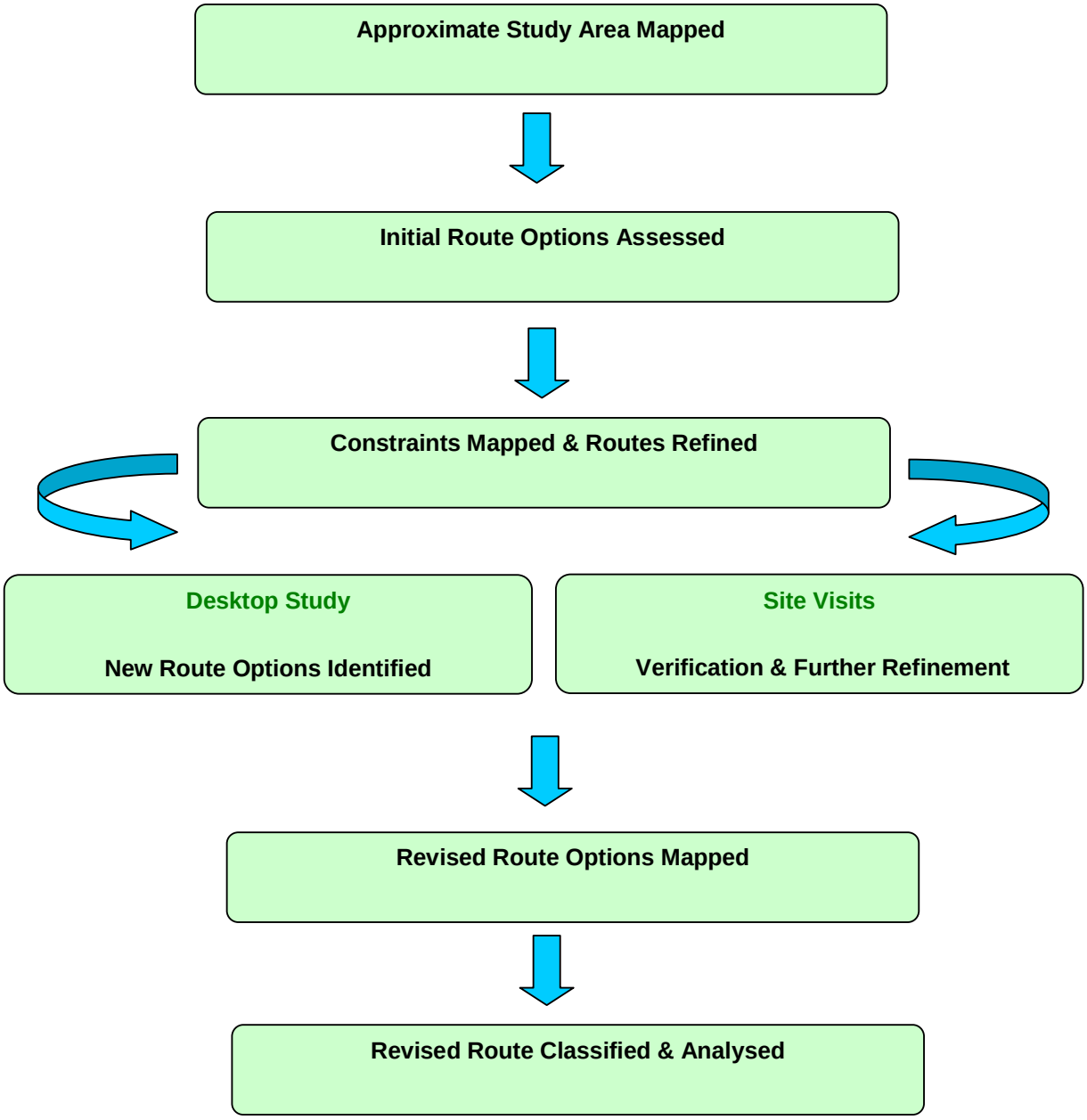


Figure 3-1 Flow Chart of Works Completed

3.2.3 Conclusions

Potential route options were identified from the initial desktop study constraints mapping exercise. These route options were determined by avoiding major constraints and areas of high population density.

The initial route options were modified after site visits, and potential crossing points have been identified. It should be noted that these potential route options have only been verified by a site visit and not detailed site investigations.

It is accepted that by the nature of this development, the erection of transmission lines will be visible in the landscape, but with careful route selection and pylon placement its impact can be reduced. The landscape through which the proposed route would pass is generally of a high quality where landscape character and visual amenity are potentially sensitive to change from a development of this nature. This study area is particularly sensitive as Brú na Bóinne, Newgrange, Knowth, Dowth, the Hill of Slane the Hill of Tara are all located within the study area.

4 LANDSCAPE

4.1 INTRODUCTION

This chapter of the report describes the existing visual and landscape constraints to the design of the proposed Kingscourt to Woodland EirGrid transmission line, within the defined study area. This includes the mapping of any designated areas, mapping of the landscape character and landuse within the study area. It also includes a listing of important views and of sensitive receptors to the construction of a transmission line. Due to the size of the study area this assessment was carried out as a desk study only. This chapter will compare the impacts on landscape of both the Western Route Options (1, 2, 3a & 3b) and the Eastern Route Options (A, B1, B2 & C).

Refer to Figure 4.1 "Visual Impact Map", Volume II.

4.2 METHODOLOGY

4.2.1 Desktop Study

A desktop study of the Meath County Development Plan 2007-2013 and the County Cavan Development Plan 2003-2009 including relevant published literature was carried out. Key landscape characteristics such as vegetation, major and minor ridgelines, land uses, designations and settlement areas were mapped. This was carried out using Ordnance Survey Ireland (OSi) mapping.

4.2.2 Site Visit

A visual survey was not carried out at this stage.

4.3 EXISTING ENVIRONMENT

4.3.1 Designations

A number of designations relating to landscape and visual constraints are listed in the Meath County Development Plan 2007-2013 and the County Cavan Development Plan 2003-2009.

These are listed below:

County Meath:

Key Viewpoints

A number of Key Viewpoints are indicated within the study area on the Visual Amenity Map of the Meath Landscape Character Assessment, which accompanies the Meath County Development Plan 2007-2013. Refer to Visual Amenity Map in Appendix 4.1.

The views listed include panoramic views to but not from Brú na Bóinne, from the Hill of Tara and from the People's Park in Kells, views of and from Skryne Church, views of Slane, views of the County Cavan hills and a number of localised short distance views. The direction and arc of the views is indicated on the above mentioned Visual Amenity Map.

There are a number of policies with regard to the visual character of County Meath in the Meath County Development Plan 2007-2013 (Chapter 8.3.2, Page 327, Chapter 8.3.3, Page 331 and Chapter 8.4.2, Pages 342, 343, 344, 345 and 350):

- **Strategic Policy: Heritage SP1 -** 'To protect the physical landscape and visual character of the County.'
- **Policy: HER POL 66** – 'To employ the full extent of the statutory provisions of the Planning and Development Acts and Regulations and all other relevant legislation including the National Monuments Act to ensure the sustained protection of landscapes of exceptional value and sensitivity and in particular to protect the rural character, setting, amenity and archaeological heritage of Brú na Bóinne and the Hill of Tara, and of the surrounding areas including the area in the vicinity of the proposed M3 motorway and its related interchanges.'
- **Policy: HER POL 67** - 'To protect the vulnerable archaeological and cultural landscape and to enhance views within and adjacent to the World Heritage Site.'
- **Policy: HER POL 86** – 'To provide adequate protection of views and vistas that contribute to the appreciation of landscape character.'
- **Policy: HER POL 87** – 'To maintain scenic vistas and panoramic views from key vantage points and towards key landmarks and features within the landscape.'
- **Policy: HER POL 88** – 'To maintain the visual integrity of sensitive and exceptional value areas.'
- **Policy: HER POL 90** – 'To protect and enhance the visual qualities of rural areas through the sensitive design of necessary development.'
- **Policy: HER POL 92** – 'To preserve the integrity of the landscape setting of important historic landscape features for the purposes of maintaining unique and unspoilt areas of landscape character, visual amenity and integrity.
- **Policy: HER POL 104** – 'To protect areas of recognised landscape importance and significant views from construction of such large-scale visually intrusive energy transmission infrastructure.'
- **Policy: HER POL 105** – 'To avoid the location of Telecommunications Antennae & Support Structures, Windfarms, Large scale enterprises, Extractive Industries and other such visually obtrusive structures or activities in fragile landscapes such as areas of Special Visual Quality or archaeological heritage, where views and/or prospects are to be preserved and in areas adjacent to National Monuments, archaeological sites or listed buildings or structures.

- **Policy: HER POL 114** – 'To protect from inappropriate development the views identified on the Landscape Character Map 05: Visual Amenity, and the views and prospects as indicated on Map 8.6.'

It is necessary to consider Brú na Bóinne as having further protection, which is afforded by its status as a UNESCO World Heritage Site, and as such is a landscape of international significance. The Meath County Development Plan 2007-2013 recognises this significance by developing policies (HER POL 66 & 67) that are specific to Brú na Bóinne in regards to effects of views to and from the site and potential development within that setting. The nature of development and its potential impact on this important landscape, in particular pylons, is discussed below in the following extract:

'The area surrounding the Brú na Bóinne World Heritage Site and the adjoining Battle of the Boyne site are of regional to international amenity and heritage importance and contains areas of the highest visual quality in the county. This area is very sensitive to all categories of new development, particularly housing, large agricultural structures, extractive industries, coniferous afforestation and pylons or other tall structures which impinge from outside the visual envelope along the valley. There are a large number of views and prospects that are sensitive to inappropriate forms of development.'

Therefore, the location of pylons and associated cabling and other infrastructure would need to be on an alignment that cannot be viewed from, or affect views to Brú na Bóinne.

A number of Landmarks are indicated within the study area on the Landmarks Map of the Meath Landscape Character Assessment, which accompanies the Meath County Development Plan 2007-2013. Refer to Landmarks Map in the Appendix 4.2.

These include the Hill of Tara, Brú na Bóinne, Skryne Church, Slane Castle, the Hill of Slane, the People's Park Lighthouse, Trim Castle, a number of other castles, a number of Copses and other features.

- **Policy: HER POL 87** of the Meath County Development Plan 2007-2013 (Chapter 8.4.2, Page 315) mentions the policy regarding landmarks as follows – 'To maintain scenic vistas and panoramic views from key vantage points and towards key landmarks and features within the landscape.'

Existing Driving Routes

The Tourist Attractions map of the Meath Landscape Character Assessment, which accompanies the Meath County Development Plan 2007-2013, shows two Existing Driving Routes within the study area Refer to Tourist Attractions Map in the Appendix 4.3.

One follows the N3 from the county boundary in the south east northwards turning west at the Hill of Tara and continuing towards the towns of Trim, Athboy and finally Kells. The second route

traverses the study area from east to west, from Drogheda, through Navan to Kells and further west from there.

There are no policies with regard to Existing Driving Routes in the Meath County Development Plan 2007-2013.

Existing Waymarked Paths and Cycle Routes

A number of Waymarked Paths and Cycle Routes traversing the study area are also marked on the Tourist Attractions map of the Meath Landscape Character Assessment. Refer to Appendix 4.3.

The marked routes run from Drogheda to Navan, further south from there to the Hill of Tara and westwards towards Trim. The routes continue northwards to Athboy and Kells and further northeast from there towards Ardee in County Louth.

There are no policies with regard to Existing Waymarked Paths and Cycle Routes in the Meath County Development Plan 2007-2013.

Indicative Routes for Potential Footpaths and Cycle Routes

Two potential routes for footpaths and Cycle Routes, located within the study area, are indicated on the Tourist Attractions Map of the Meath Landscape Character Assessment. Refer to Appendix 4.3.

One of these potential routes would leave Navan in a north-western direction towards Kells and continue further northwest from there. The other route would leave Duleek in an eastern direction along the R150 all the way to the coast at Laytown.

- **Policy: ED POL 66** of the Meath County Development Plan 2007-2013 (Economic Development, Chapter 3.3.11, Page 97) proposes the following: :– 'To facilitate the development of a series of walkways and cycleways throughout the county including signposting.'

County Cavan

Scenic Viewing Points

One scenic view relevant to the study area is listed in the County Cavan Development Plan 2003-2009. The actual viewpoint location is outside of the study area, SV 8 – Lockinleigh Gap (Schedule 2 (b), Page 70).

The description/policy with regard to Scenic Viewing Point 8 in the County Cavan Development Plan is as follows. 'East west view from elevated summit of County Road (619) at crest of Cornaseus. The views are panoramic and long-distance. Restrict development that would prejudice the development of a viewing park or obstruct views and regulate development to minimise intrusions.'

4.3.2 Landscape Character

The Meath Landscape Character Assessment, which accompanies the Meath County Development Plan 2007-2013 divides County Meath into **4 Landscape Character Types** and further into **20 geographically specific landscape character areas**.

The current County Cavan Development Plan does not include a county-wide landscape character assessment. However, the Lockinleigh Mountain High Landscape Area (HL3, Schedule 2(a), Page 69) is located in the very north-western corner of the study area. This area also contains the Lockinleigh Scenic Viewing Point.

County Meath

Landscape Character Types (LCT)

The study area falls within all of the four character types, namely **Hills and Upland Areas, Lowland Areas, River Corridors and Estuaries and Coastal Areas**.

The General Recommendations for the three affected character types include the following, which are relevant to this report:

Hills and Upland Areas

- To have due regard to the positive contribution that views across adjacent lowland areas and landmarks within the landscape make to the overall landscape character.
- To respect the remote character and existing low-density development in these LCTs.

Lowland Areas

- Preserve views of upland areas that contain the lowlands e.g. Loughcrew, Tara and Skryne

River Corridors and Estuaries

- To recognise the importance of river corridors for scenic value, recreation, ecology, history and culture.
- To preserve historic features and their landscape settings.
- To maintain attractive and unspoilt open views, particularly along estuaries where the interface between river corridors and the coast creates very attractive landscapes.
- To further define popular tourist routes such as the Brú na Bóinne drive and create links with new routes to additional areas of interest. Vehicular and pedestrian routes should be developed in tandem.

Coastal Areas

- To recognise the importance of retaining undeveloped areas of coastline, estuaries and dunes for their scenic and ecological value.
- To protect views along the coast and along the Boyne estuary.

Landscape Character Areas

Within the landscape character types, the study area covers 17 of the 20 character areas. The 17 relevant character areas range in sensitivity from low to high, and in value from low to exceptional. The most highly sensitive character areas with an exceptional value within the study area are the Boyne Valley Character Area (Area 5) and the Tara-Skryne Area (Area 12). Both are landscapes that contain elements of international importance. The descriptions of each of the Landscape Character Types are followed by a list of recommendations, some of which are in regard to landscape and visual aspects. It was not found necessary to list all these recommendations, as they are covered by the recommendations listed for the Landscape Character Types above and by the constraints mapping.

Landscape Capacity

The Meath Landscape Character Assessment rates the capacity of each of the character areas to accommodate different types of development, including overhead cables; substations and pylons. Refer to the Landscape Capacity Map of the Meath Landscape Character Assessment, also in the Appendix 4.4. Ten of the 17 character areas within the study area are rated to have a low capacity to accommodate transmission lines and four are rated to have medium capacity. The two remaining character areas are rated to have different capacities to accommodate transmission lines in different locations within the areas. Therefore one area ranges from low to high capacity and one from low to medium, depending on the location within the character area.

The likely characteristics and impacts on landscape character of the 'overhead cables, substations and communications masts' development type are described, as follows in Chapter 5 "Landscape Trends " of the Meath County Development Plan, Landscape Character Assessment Report, in the section "Capacity to accommodate change":

> *"Overhead cables, substations and communications masts are generally large and prominent features. Their impact on landscape character will be determined by their visual prominence and size as well as their location in sensitive landscapes such as archaeologically rich landscapes or areas within scenic views. The convergence of a number of overheads cables or the massing of a large substation or number of pylons will adversely affect landscape character to some extent, depending on the sensitivity of the landscape in question".*

County Cavan

Lockinleagh[1](Lough an Leagh) Mountain High Landscape Area (HL3, Schedule 2(a), Page 69)

The description/policy with regard to the Lockinleigh Mountain High Landscape Area in the County Cavan Development Plan is as follows, 'An area of upland hill country between Bailieborough and Kingscourt with open unenclosed landscape above approximately 240 metres. The area is used for hill walking recreation. The landscape is fragile and sensitive to unsympathetic development. Uses generally unrelated to established agricultural and forestry activity will be regulated to ensure the scenic amenity value is not prejudiced. The further erection of pylons will be regulated to ensure that there will be no further diminution of the visual character of the area.'

4.3.3 Land Use

The Land Use Map of the Meath Landscape Character Assessment, refer to Appendix 4.5, shows that the vast majority of the land use within the study area is Agriculture. Other than that there are small patches of Urban Settlement, Broad Leaved Woodland, Coniferous Forest, Mineral Extraction and Landfill, Mixed Woodland, Natural Grassland, Peat Bogs and Transitional Woodland Scrub.

There are no detailed descriptions of land use in the County Cavan Development Plan. For the purpose of this report it is assumed that the land use within the parts of the study area covering County Cavan would be similar to the use described above for County Meath – generally Agriculture.

4.3.4 Important views / Sensitive Receptors

The following is a list of the locations/areas with the most sensitive receptors:

- Private Properties (including residential properties, hotels, golf courses etc.);
- Public Properties (e.g. schools, parks);
- Roads (national, regional, county and local roads);
- Footpaths/Walking Routes; and
- Lakes/Rivers (also designated as vulnerable in the Development Plan).

[1] The HL3 site has been given two names under the Cavan Development Plan, as both Lough an Leagh Mountain High Landscape Area (HL3) as mapped, and Lockinleigh Mountain high Landscape Area (HL3) as described in Schedule 2(a) appear to be the same.

4.4 POTENTIAL IMPACTS AND IDENTIFICATION OF CONSTRAINTS

This chapter is to be read in conjunction with the Figures 4.1 “Visual Impact Map”, Volume II.

4.4.1 Potential Impact on Designations

Constraints in Relation to Key Viewpoints

The constraints for all viewpoints within the study area (Counties Meath and Cavan) were mapped. Apart from a number of exceptions, the views were generally mapped as being of very high sensitivity within 2km of the viewpoint, high sensitivity between 2 and 3km from the viewpoint, medium between 3 and 4km from the viewpoint and as being of low sensitivity for available views beyond 4km. The viewshed/angles of the County Meath views were fixed according to the angle shown and description given on the Visual Amenity Map of the Landscape Character Assessment.

For the one relevant view in County Cavan the description of the view given in Schedule 2 (b) of the Development Plan was used in order to fix the viewshed/angles for the constraints mapping. Below are a number of recommendations to be followed with regard to each viewpoint-sensitivity rating. It should be noted that where the viewsheds of medium and high sensitivity cannot be entirely avoided, appropriate detailed design will reduce adverse visual impact:

- **Very highly sensitive views** – These areas must be avoided if at all possible.
- **Highly sensitive views** – These areas should be avoided, if possible.
- **Medium sensitive views** – The transmission line could be located within these areas, however, the detailed route design must be carried out carefully.
- **Low sensitive views** – The transmission line can be located within this area but should be designed carefully.

The most important/sensitive views were found to be to and from the Hill of Tara and the Church at Skryne, panoramic views from the People’s Park at Kells, and views of the back of Brú na Bóinne visible from the main road.

Constraints in Relation to Landmarks

In order to ensure that the potential impact on landmarks is kept to a minimum it was decided to locate a buffer zone of a 1km radius around these features. These buffer zones are to be avoided, if possible. If this cannot be achieved, a detailed visual survey should be carried out to establish suitable routing of the transmission line. The exception to this is the buffer zone around Brú na Bóinne which was decided at a radius of 4km. This buffer zone was chosen because as outlined in section 3.4.1 of this Constraints Report, at 4km and beyond from a viewpoint, views are of low sensitivity. The routing of a transmission line within this buffer zone however, must be avoided if possible.

Constraints in Relation to Existing Driving Routes

In order to ensure that the potential impact on Existing Driving Routes is kept to a minimum it was decided to locate a buffer zone of 1km on each side of these roads. These buffer zones are to be avoided, if possible. It is acknowledged however that roads cannot be completely avoided and the detailed design in those areas should therefore be carried out carefully.

Constraints in Relation to Existing Waymarked Paths and Cycle Routes

In order to ensure that the potential impact on Existing Waymarked Paths and Cycle Routes is kept to a minimum it was decided to locate a buffer zone of 1km on each side of these routes. These buffer zones are to be avoided, if possible. It is acknowledged however that routes cannot be completely avoided and the detailed design in those areas should therefore be carried out carefully.

Constraints in Relation to Indicative Routes for Potential Footpaths and Cycle Routes

In order to highlight the potential impact on potential Footpaths and Cycle Routes it was decided to locate a buffer zone of 1km on each side of these routes. These buffer zones should be avoided, if possible.

4.4.2 Potential Impact on Landscape Character

County Meath

Constraints in relation to Landscape Character Types/Landscape Character Areas/Landscape Capacity

As described in section 4.3.2 above the Landscape Capacity Map of the Meath Landscape Character Assessment rates the capacity of each Landscape Character area in County Meath to accommodate transmission lines.

For the purpose of this report and the constraints mapping, the following recommendations are made:

- **High Capacity Areas = Areas of low sensitivity to transmission lines** - The transmission line can be routed through this area but should be designed carefully.
- **Medium Capacity Areas = Areas of medium sensitivity to transmission lines** - The transmission line could be routed through these areas; however, the detailed route design must be carried out carefully.
- **Low Capacity Areas = Areas of high sensitivity to transmission lines** - These areas should be avoided, if possible.

It is acknowledged that the routing through high sensitivity area cannot be avoided in the case of the proposed transmission line. The detailed design of those sections of the transmission line within high sensitivity areas has to be carried out very carefully, in order to make use of any screening vegetation. The length of the transmission line traversing these areas should be kept to an absolute minimum.

County Cavan

Constraints in relation to the Lockinleigh (Lough an Leagh) Mountain High Landscape Area (HL3, Schedule 2(a), Page 69)

This area has been mapped, although it lies mostly outside the proposed study area. The mapped constraints for County Cavan Scenic Viewing Point 8 (Lough an Leagh Gap), refer to section 4.4.1 above and Figure 4.1 "Visual Impact Map" Volume II, cover this area.

As outlined in the description/policy for this area, the further erection of pylons will be regulated to ensure there is no further diminution of the visual landscape within this area.

4.4.3 Potential Impact on Landuse

Agriculture

Agriculture represents the major landuse within the study area. Generally, it can be said that the sensitivity to transmission lines of this landscape type is low to medium, as mature hedgerows along the field boundaries have a high potential to screen the transmission line in many views. Provided that the structures of the transmission line are located on the boundaries rather than in the middle of the fields the visual and landscape impact of the transmission line will be low on this landuse.

Broad Leaved Woodland, Coniferous Forest and Mixed Woodland

The landuse of some areas within the study area is described as Broad Leaved Woodland, Coniferous Forest and Mixed Woodland. While these wooded areas would have great potential to screen views of the transmission line, traversing the woodlands themselves should be avoided, as the required clearing would have a major visual impact.

Transitional Woodland Scrub

The sensitivity to transmission lines of this landuse type is rated as medium due to some existing tall vegetation. With careful siting the visual impact of the transmission line can be kept to a minimum.

Natural Grassland, Peat Bogs

The sensitivity to transmission lines of these two uses is high due to the absence of tall vegetation for screening purposes. Routing of the transmission line through these areas should be avoided. If this cannot be avoided, the siting of structures should be carried out very carefully in order to avoid/minimise negative visual impact of the transmission line.

Urban landuse, Mineral Extraction and Landfill

The proposed transmission line will avoid built up areas, Mineral Extraction and Landfill Areas.

4.4.4 Potential Impact on Important views/Sensitive Receptors

In order to minimise the potentially high impact on Important Views/Sensitive Receptors the following recommendations should be implemented as much as possible.

Private and Public Properties

Transmission lines should be kept away from inhabitable properties as much as possible (aspirational distance 50m) and structures should be placed behind screening vegetation, where possible.

Roads

The number of road crossings, in particular of National and Regional roads, should be kept as low as possible. Where crossings cannot be avoided a good crossing angle (90º) should be achieved. Structures should be kept away from roads and/or should be placed behind screening vegetation where possible.

Footpaths/Walking Routes

Crossing over popular footpaths/walking routes should be avoided, where possible. Where crossings cannot be avoided a good crossing angle (90º) should be achieved. Structures should be kept away from footpaths and/or should be placed behind screening vegetation.

Rivers/Lakes

Crossing over/running nearby rivers/lakes should be avoided, where possible. In order to ensure that the potential impact on the larger rivers and on lakes is kept to a minimum it was decided to locate a **'high sensitivity" buffer zone** around these areas. These buffer zones cover **40m on each side of the rivers** and **200m from the shore of the lakes**. It should be noted that the 'high sensitivity' zone along the rivers refers to the large pylons supporting the transmission line, as it is acknowledged that it would be impossible to avoid all rivers completely, and that they may need to be traversed by the line.

4.5 EVALUATION OF ROUTE CORRIDOR AND CONCLUSIONS

4.5.1 Evaluation of Route Corridors

The eight potential route options (Western Route Option 1, 2, 3a & 3b and Eastern Route Options (A, B1, B2 & C) are compared below on their potential impact on some of the areas of high sensitivity listed in section 4.4 above (some of the constraints would require further, more detailed investigation and are therefore not listed in this table). Please note that some of the Route Options are split into two separate options over a certain length (i.e. Route 3 into 3a and 3b, Woodland to Kingscourt, Western Route Options, and Route B into B1 and B2, Woodland to Kingscourt, Eastern Route Options). For the purpose of this report these route options will be assessed as two separate options.

Table 4-1 Constraints for Woodland to Kingscourt, Western Route Options (1, 2, 3a and 3b)

Constraint	Route Option 1	Route Option 2	Route Option 3a	Route Option 3b
Viewpoints – Very High Sensitivity (length of line crossing very highly sensitive viewshed)	-	-	-	-
Viewpoints - High Sensitivity (length of line crossing highly sensitive viewshed)	-	-	-	-
Viewpoints - Medium Sensitivity (length of line crossing medium sensitive viewshed)	2.3km	6.2km	-	-
Number of **Existing Driving Route, Waymarked Paths and Cycle Routes crossings**	3	4	4	4
Sensitive Areas – high sensitivity to transmission lines (length of line crossing areas of high sensitivity)	25.8km	21.0km	20.5km	20.6km
Sensitive Areas – medium – sensitivity to transmission lines (length of line crossing areas of medium sensitivity)	37.9km	38.5km	33km	32.8km
Number of (existing) **Motorway crossings**	-	-	-	-
Number of **National Road crossings**	3	3	3	3
Number of **Regional Road crossings**	8	6	4	4
Number of **County Road crossings**	28	30	28	26
Total number of Road crossings	39	39	35	33
Number of (larger) **River crossings**	4	3	2	2

Table 4-2 Constraints Woodland to Kingscourt, Eastern Route Options (A, B1, B2 and C)

Constraint	Route Option A	Route Option B1	Route Option B2	Route Option C
Viewpoints – Very High Sensitivity (length of line crossing very highly sensitive viewshed)	-	-	-	-
Viewpoints - High Sensitivity (length of line crossing highly sensitive viewshed)	-	-	-	-
Viewpoints - Medium Sensitivity (length of line crossing medium sensitive viewshed)	4.3km	4.3km	1.9km	1.9km
Number of **Existing Driving Route, Waymarked Paths and Cycle Routes crossings**	3	3	3	3
Sensitive Areas – high sensitivity to transmission lines (length of line crossing areas of high sensitivity)	34.8km	33.2km	33.2km	34.5km
Sensitive Areas – medium – sensitivity to transmission lines (length of line crossing areas of medium sensitivity)	28.5km	28.5km	32.4km	32.4km
Number of (existing) **Motorway crossings**	-	-	-	-
Number of **National Road crossings**	5	5	5	5
Number of **Regional Road crossings**	4	4	5	5
Number of **County Road crossings**	29	29	33	36
Total number of **Road crossings**	38	38	43	46
Number of (larger) **River crossings**	1	1	1	1

4.5.2 Evaluation

Generally, careful detailed design will be required, in relation to road and river crossings and locations of structures. Below is a summary of the positive and negative points of each group of four options and recommendations regarding areas requiring particular attention.

Woodland to Kingscourt, Western Route Options (1, 2, 3a and 3b)

Positive points about Route Options 1, 2, 3a & 3b

- Very high or high sensitivity viewsheds are not crossed by these route options
- Medium sensitivity viewsheds will not be crossed by routes 3a & 3b
- National Roads will only be crossed 3 times by these routes, compared to 5, 6 & 7 times by all other options.
- The total number of road crossings is generally lower than most of the other route options

Negative points about Route Options 1, 2, 3a & 3b

- Route options 2, 3a & 3b cross driving/cycling routes and waymarked paths one more time than most of the other routes
- Route Option 1 crosses large rivers 4 times compared to 1, 2 or 3 times by the other Western Route Options 2 and 3

Recommendation

If Route Options 1 or 2 are chosen, the visual impact of the line on the key viewpoints at the People's Park in Kells and the view of the Cavan Mountains would have to be evaluated in more detail on site. For all four routes, the impact on areas of high sensitivity to transmission lines would need to be evaluated on site. Minor rerouting of the lines in order to make use of screening vegetation may be required.

The locations of river crossings would also have to be checked on site (in particular for routes 1 and 2) and pylons should be kept away from these rivers as far as possible.

Woodland to Kingscourt, Eastern Route Options (A, B1, B2 and C)

Positive points about Route Options A, B1, B2 & C

- Very high or high sensitivity viewsheds are not crossed by these route options
- Route options A and B1 cross the least distance over areas of medium sensitivity to transmission lines out of all of the route options.

Negative points about Route Options A, B1, B2 & C

- Areas highly sensitive to transmission lines will be crossed for over 30km by route options A, B1, B2 and C. This is at least 7.4km more than any of the route options 1, 2 3a and 3b. The Western route options cross the areas highly sensitive to transmission lines for max. 25.8km. (Refer to Table 4.1 and Table 4.2 for further detail).
- National roads will be crossed five times
- The alignment will be within the 4km radius buffer around Brú na Bóinne
- The total number of road crossings by route options B2 and C is quite high.

Recommendation

If one of these Eastern route options was chosen, the impact on areas of high sensitivity to transmission lines needs to be checked in more detail on site, as these areas are crossed for substantially longer distances than most of the Western route options. Minor rerouting of the lines in order to make use of screening vegetation may be required.

The location of the major river crossings would also have to be checked on site and pylons should be kept away from these rivers as far as possible.

It should be noted that all of the Eastern route options A, B1, B2 & C pass in close proximity to Brú na Bóinne, and the Hill of Slane. In the case of Brú na Bóinne the Eastern route options A, B1, B2 & C would also all pass through the 4km radius buffer zone proposed as a landmark constraint. Both Brú na Bóinne and the Hill of Slane are designated as landmarks and located within a Landscape Character Area with a low capacity for pylon development. As discussed previously Brú na Bóinne is further protected by specific policies in the Meath County Development Plan due to its international importance as a World Heritage site. Although views from these landmarks are not specifically listed on the Visual Amenity Map of the Landscape Character Assessment of County Meath, it is a planning policy to protect views towards key landmarks. Views are only identified on the Amenity Map as being to Brú na Bóinne and the Hill of Slane and not from those landmarks. Policy HER POL 87 of the Meath County Development Plan 2007-2013 (Chapter 8.4.2, Page 342) mentions the policy regarding landmarks as follows – '*To maintain scenic vistas and panoramic views from key vantage points and towards key landmarks and features within the landscape.*'). Views to and within Brú na Bóinne are further protected by Policy HER POL 67 – '*To protect the vulnerable archaeological and cultural landscape and to enhance views within and adjacent to the World Heritage Site'*. Further to that, the Hill of Slane is a well-known viewing point (also marked on the OSi Map) and a transmission

line in close proximity to this viewing point is likely to affect scenic views. It is expected that a transmission line located so close to two major heritage sites with such as low capacity to absorb this type of development would have a significant landscape and visual impact and in the case of Brú na Bóinne it would be an inappropriate form of development.

4.5.3 Conclusion

- All of the Woodland to Kingscourt, Eastern Route Options (A, B1, B2 and C) pass through areas highly sensitive to transmission lines for substantially longer distances than the Western Route Options (i.e. a minimum of 7.4km). (Refer to Table 4.1 and Table 4.2 for details).
- All of the Eastern route options pass in close proximity to the Hill of Slane and Brú na Bóinne, both designated as landmarks. Although, views from these landmarks are not specifically listed on the Visual Amenity Map of the Landscape Character Assessment of County Meath, it is a planning policy to protect views towards key landmarks (Policy: HER POL 87 of the Meath County Development Plan 2007-2013 (Chapter 8.4.2, Page 342) mentions the policy regarding landmarks as follows – '*To maintain scenic vistas and panoramic views from key vantage points and towards key landmarks and features within the landscape.*'). Further to that, the Hill of Slane is a well-known viewing point (also marked on the OSi Map) and a transmission line in close proximity to this viewing point is likely to affect scenic views. It is expected that a transmission line so close to two major heritage sites will have a significant landscape and visual impact.
- Woodland to Kingscourt, Western Route Options (1, 2, 3a and 3b) overall have less negative impact than any of the Eastern Route Options.

5 CULTURAL HERITAGE

5.1 INTRODUCTION

Moore Group were commissioned to carry out a cultural heritage impact assessment on eight routes running from Woodland to Kingscourt in advance of route selection for the development of a 400kV overhead transmission line. The following chapter documents the proposed project, the existing environment at the site, the predicted impacts and an evaluation of the route options. This desk study aims to assess the potential impacts of the proposed route options on the receiving archaeological, architectural and cultural heritage within the route study area.

Within the route study area is a wealth of built heritage, from castles to cottages, including the great passage tombs of Brú na Bóinne, the complex of monuments at Slieve Breagh, planned towns and villages such as Slane, country houses, farmsteads, monastic settlements, churches, mills, canals and railways. Within this great variety of building types and uses are structures of architectural heritage significance and distinctive character that are deemed worthy of protection. The study was carried out on behalf of TOBIN Consulting Engineers for EirGrid. Cultural heritage assessment may be required as part of the planning process “in response to developments which may be located in the vicinity of archaeological monuments” (The Heritage Council. 2000).

This chapter will compare the impacts on archaeological and cultural heritage of both the Western Route Options (1, 2, 3a & 3b) and the Eastern Route Options (A, B1, B2 & C).

Refer to Figure 5.1 “Archaeological & Architectural Heritage”, Volume II.

5.2 METHODOLOGY

5.2.1 Background

5.2.1.1 Meath County Development Plan 2007-2013

The following Heritage Policies are taken from the Meath County Development Plan 2007-2013.

Archaeological Heritage Policies

- **Policy: HER POL 55** To protect archaeological sites, monuments (including their setting), underwater archaeology and peatlands, and objects within the jurisdiction of Meath County Council, including those that are listed in the Record of Monuments and Places or newly discovered sub-surface archaeological remains.
- **Policy: HER POL 56** To ensure that full consideration is given to the protection of archaeological heritage when undertaking, approving or authorising development in order to avoid unnecessary conflict between development and the protection of the archaeological heritage.

- **Policy: HER POL 57** To ensure that all development proposals affecting sites specified in the Record of Monuments and Places or Zones of Archaeological Potential are referred to the Prescribed Bodies (as set out in the Planning and Development Regulations 2001 - 2007, as amended) and to have regard to the advice and recommendations of the Prescribed Bodies in relation to undertaking, approving or authorising development.
- **Policy: HER POL 58** To ensure that when an unrecorded archaeological object or site is discovered, any works that threaten the object or site are immediately suspended and that the appropriate Government agency is informed.
- **Policy: HER POL 59** To protect important archaeological landscapes in co-operation with the appropriate Government agency.
- **Policy: HER POL 60** To seek the preservation in situ (or at a minimum, preservation by record) of all archaeological sites or objects and their settings.
- **Policy: HER POL 61** To require the retention of surviving medieval plots and street patterns in the villages and towns of Meath and to record evidence of ancient boundaries, layouts, etc. in the course of development.
- **Policy: HER POL 62** To protect historical burial grounds within Meath and encourage their maintenance in accordance with conservation principles.
- **Policy: HER POL 63** To encourage and promote the appropriate management and enhancement of the County's archaeological heritage.
- **Policy: HER POL 64** To protect the heritage of groups of important national monuments, inclusive of their contextual setting and interpretation, in the operation of development management.
- **Policy: HER POL 65** To employ the full extent of the statutory provisions of the Planning & Development Acts and Regulations and all other relevant legislation including the National Monuments Acts to ensure the sustained protection of landscapes of exceptional value and sensitivity and in particular to protect the rural character, setting, amenity and archaeological heritage of Brú na Bóinne and the Hill of Tara, and of the surrounding areas including the area in the vicinity of the proposed M3 Motorway and its related Interchange in the townlands of Blundelstown and Castletown Tara.

Brú na Bóinne Heritage Policies

- **Policy: HER POL 66** To protect the vulnerable archaeological and cultural landscape and to enhance views within and adjacent to the World Heritage Site.
- **Policy: HER POL 67** Pending the preparation of the LAP (see objective HER OBJ 11), it shall be the express policy within the Brú na Bóinne World Heritage Site, as shown on Map No. 8.4, to permit individual housing only to those involved locally in full time agriculture and who do not own land outside of the Brú na Bóinne World Heritage Site. In addition to satisfying a clear agricultural housing need, such development is also subject to the Development Assessment Criteria set out in Volume 1, Chapter 8, Section 3.3.2 and elsewhere in the Development Plan.

Architectural Heritage Policies

- **Policy: HER POL 68** To preserve, protect and enhance the architectural heritage of Meath.
- **Policy: HER POL 69** To seek the protection of all structures (or, where appropriate, parts of structures) within the county which are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest, which are included in the Record of Protected Structures (See Appendix V).
- **Policy: HER POL 70** To encourage the sympathetic retention, reuse and rehabilitation of protected structures and their setting. In certain cases, land use zoning restrictions may be relaxed in order to secure the conservation of the protected structure. The Planning Authority will require that all works to protected structures be carried out in accordance with conservation guidelines and best practice and that the special interest, character and setting of the building be protected.
- **Policy: HER POL 71** To protect the original structures of the Royal Canal and Boyne Navigation in association with Waterways Ireland and other relevant organisations and to ensure that development along their banks does not have a detrimental affect on the character of these canals.
- **Policy: HER POL 72** To protect the historic bridges, railway and roadside features (such as historic milestones, castiron pumps and post boxes) and street furniture of the County.
- **Policy: HER POL 73** To encourage the retention of original windows, doors, renders, roof coverings and other significant features of historic buildings, whether protected or not.
- **Policy: HER POL 74** To continue to develop the Council's advisory/educational role with regard to Heritage matters and to promote awareness and understanding of the architectural heritage.
- **Policy: HER POL 75** To adhere to the standards advocated in the Principles of Conservation published by the Department of the Environment, Heritage and Local Government in undertaking works on elements of the built heritage.

Architectural Conservation Areas

- **Policy: HER POL 76** To identify places of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest and to define them as Architectural Conservation Areas. Additional Architectural Conservation Areas may be identified and proposed during the lifetime of the Plan. The Planning Authority will require that all development proposals within an ACA should be appropriate to the character of the area, inclusive of its general scale and materials. Development proposals on sites in the vicinity of an Architectural Conservation Area will only be permitted where it can clearly be demonstrated that the development will not materially affect the character or the integrity of the Area.
- **Policy: HER POL 77** To ensure that any development, modifications, alterations, or extensions affecting a protected structure, adjoining structure or structure within an ACA

are sited and designed appropriately, and are not detrimental to the character of the structure or to its setting or the general character of the ACA.

Vernacular Architecture

- **Policy: HER POL 78** To encourage the protection, retention, appreciation and appropriate revitalisation of the vernacular heritage of Meath in both the towns and rural areas of the County.
- **Policy: HER POL 79** To preserve the character and setting (e.g. gates & gate piers, courtyards etc.) of vernacular buildings.
- **Policy: HER POL 80** To seek the retention of historic shop fronts and pub fronts as part of the streetscape of the towns and villages of Meath.

Cavan County Development Plan 2003-2009

The Cavan County Development Plan 2003-2009 notes 21 Special County Heritage Sites, "These are sites with an important value. These values form a synergy to create an area of exceptional heritage (archaeological, historical, scientific, architectural, or cultural.) All incompatible development will be restricted in order to protect the amenity, scientific and historical value of these areas."

5.2.2 Methodology

By its very nature the construction of a transmission line has a degree of flexibility in the placement of its pylons and once a route has been chosen, pylons can be positioned to avoid known archaeological sites, where possible. Therefore the major potential impact on the cultural heritage resource from this type of development is visual which is reflected in some of the Heritage Policies outlined in the Meath County Development Plan and Cavan County Development Plan. There are no guidelines published for route selection based upon the potential for visual impact on the Cultural Heritage. Guidelines for Visual Impact Assessment and the Consultation Draft of Guidelines for Planning Authorities for Landscape and Visual Impact Assessment were consulted but did not give a coherent framework for this type of route selection study.

In assessing the visual impact on the cultural heritage of the proposed development the following were considered:

- The preservation of the character of the landscape where and to the extent that the proper planning and sustainable development of the area requires it, including the preservation of views and prospects and the amenities of places and features of beauty or interest.
- The protection of structures, or parts of structures, which are of special architectural, historical, archaeological, artistic, cultural, scientific or technical interest;
- The preservation of the character of architectural conservation areas, historic urban areas.

To assess the impact of the proposed routes a two phase methodology was developed.

Phase One:
Phase one of the methodology was devised to ensure that any known cultural heritage sites would not be physically impacted upon.

All available data sets were compiled for the constraints mapping and route selection phase, these included:

- World Heritage Site - Brú na Bóinne
- National Monuments – A database available through the www.heritagedata.ie website.
- Record of Monuments and Places (RMP) – databases obtained from the national monuments section of the Department of Environment Heritage & Local Government.
- Record of Protected Structures (RPS) – datasets obtained from Meath & Cavan Local Authorities
- National Inventory of Architectural Heritage (NIAH) – Datasets obtained from the architectural section of the DEHLG.

All sites were graded based upon their sensitivity (Table 5.1) and subsequently mapped using Geographical Information System (GIS) software and ascribed buffers, allowing for easy identification of sensitive cultural heritage sites during route corridor selection. It was possible to avoid physical impact upon known archaeological sites using this method.

Table 5-1 Classification Rating & Buffers Employed

Classification	Buffer	Heritage site type
World Heritage Site	As outlined in the Brú na Bóinne Management Plan	Brú na Bóinne World Heritage Site
Very High Sensitivity	<250m from Very High feature centre point	National Monuments & significant upstanding RMP sites
High Sensitivity	<150m from High feature centre point	NIAH, RPS, high rated RMP sites
Medium Sensitivity	<100m from Medium feature centre point	Medium rated RMP sites
Medium to Low Sensitivity	<50m from Low feature centre point	Low rated RMP sites
Low Sensitivity	No Heritage Sites	No sites within the above criteria

Phase Two:
Phase two assessed the density of archaeological sites within the wider landscape surrounding the proposed routes, sites within 250 metres and 1000 metres were summarised. A further review of the sites highlighted any prominent sites (World Heritage Sites, National Monuments or clusters of sites) that lay further from the proposed routes.

5.3 EXISTING ENVIRONMENT

Landscape

The topography surrounding the route options is of rolling lowland and drumlin landscape. From the level aspect, which the general surface exhibits, the only considerable elevations are the drumlin hills in the north-western extremity of County Meath and south County Cavan and the more exceptional site of the hill of Slane. Within the physical landscape a number of rivers will be traversed including the Hurley River, The Boyne and the River Dee. Major urban centres at Dunshaughlin, Nobber, Ardee and Kingscourt are all avoided with the proposed route options. The quantity of bog is small in proportion to that of the general surface, and very unequally distributed. Land use along the proposed routes is predominantly engaged in agricultural activities.

Defining landscape character enables an understanding to be formed of the inherent value and importance of individual landscape elements and the processes that may alter landscape character in the future. The cultural aspects of the landscape cannot be divorced from its physical and visual characteristics so all of these elements are considered. In considering the most appropriate route, the visual impact on the county's rich natural and built heritage had a significant bearing.

The landscapes in County Meath and south County Cavan are constantly evolving in response to natural forces and human activity. Glacial movement shaped the topography into its present form and mans activities have been largely responsible for land cover since farming began. There have been several phases of history which have left their marks on the landscape and which are evident today as a patchwork of elements, including passage tombs and pre Christian earthworks, early Christian ecclesiastical buildings, Norman castles and walled settlements, 17th – 18th Century demesnes and field patterns and 18th – 19th Century buildings and structures. Overall the different route options avoid directly impacting on any recorded archaeological sites, however the routes do visually impact on the extended view-shed of 3 prominent archaeological landscapes at Brú na Bóinne , the Hill of Slane and the Slieve Breagh complex within the route study area. All these areas are addressed in this constraint study.

The Local Government (Planning and Development) Act, 2000, specifically, Part II, S.10, (e) and 1st Schedule, Part IV, (7) requires that every Planning Authority in making a development plan must include objectives for the; 'Preservation of the character of the landscape where, and to the extent that....the proper planning and sustainable development of the area requires it, including

the preservation of views and prospects and the amenities of places and features of natural beauty or interest.'

5.3.1 Historical Background

Research comprised of a paper study of all available archaeological, historical and cartographic sources. The following is based on a document search and paper study. County Meath is traditionally known as the 'Royal County' because it contained the seat of the ancient High Kings of Ireland at the Hill of Tara. Meath is said to derive from the name Midhe. He was the son of Bratha and the principal druid of the mythological clan Neimhidh. The territory is now much smaller than its extent in ancient times when it would have included southeast Cavan. Within its present boundaries are some of the most important sites in the mythology, archaeology and history of Ireland.

Prehistory

Evidence of Palaeolithic communities has yet to be confirmed in Ireland. The much-referenced flake of the Munsterian period (200,000–130,000 BP) from Mell, County Louth was probably transported here during the Midlandian glaciation (115,000–10,000 BP) by advancing ice-sheets and not human action, while other examples of early lithic assemblages are considered either natural occurrences or are from uncertain contexts (Waddell 1998, 8–9).

The earliest recorded phase of human occupation in Ireland is the Mesolithic period (7500–4500 BC) when groups of hunter-gatherers were living at subsistence level close to rivers and lakes and along the coastline, surviving on the limited flora and fauna available in the post-glacial period. They were a mobile society relying on wild resources for food, which was hunted and gathered using stone tools as well as boats, nets and traps. Settlement was in temporary and semi permanent groups of huts constructed of wood slung with hide, which may have operated as seasonal or hunting camps. Late Mesolithic material is known from County Meath at Moynagh Lough (O'Sullivan 1998, 52–53), the crannóg comprised an oval mound and was revealed as a multi-period site with activity continuing until late in the 8th century. Although some Mesolithic flints have been found along the River Blackwater and near Newgrange in County Meath, the earliest substantial evidence for human habitation in this area dates to the Neolithic period. The Cavan area has been inhabited for over 5,000 years and there is much evidence for occupation from prehistoric times throughout the county. The West Cavan area is particularly rich in archaeological sites. Throughout County Cavan many people lived on crannogs, many of which were used for hundreds of years. However, the Mesolithic period remains the most under-represented in the archaeological record for Meath and South Cavan in general and the country as a whole.

Farming was first adopted in the Middle East but spread gradually across Europe in succeeding centuries, arriving in Ireland about 4000 BC. This transition changed in Ireland from an economy based principally on hunting and foraging to one primarily of cereal cultivation and livestock rearing. Tending of crops and animals required a more sedentary lifestyle and larger permanent

settlements were built. The megalithic (from the Greek mega – large and lith – stone) monuments of the Neolithic people built as communal tombs or for ceremonial purposes, are relatively common in the landscape. New methods were adopted for shaping stone tools and the first long distance trade networks were established. As a consequence, within Meath and elsewhere, large tracts of forest cover were cleared, permanent settlements were established, pottery was first used, and elaborate burial rites were developed which centred on large communal ritual monuments. While the megalithic tombs of Brú na Boinne, Fourknocks, Loughcrew and elsewhere are the most visible and recognisable monuments of the period, a number of settlement sites are known from the county, for example, Newtown (Halpin & Gowen 1992), Creewood and Knowth (Moore 1987, 49). Neolithic artefacts are also common. The Brú na Bóinne archaeological complex is one of two UNESCO World Heritage Sites in Ireland affording an international protection for this rich archaeological landscape. The presence of two passage tomb cemeteries (Loughcrew and Brú na Boinne) as well as isolated passage tombs (including Fourknocks and the mound of the hostages at Tara), and other megalithic monuments strongly suggests that a vibrant Neolithic and early Bronze Age economy existed in this area.

As stone tools were replaced by the use of copper, later combined with tin to make bronze, the structure of society also changed over centuries. Henges were constructed in Ireland in a broad period beginning around 2000BC, and were sometimes constructed around or beside previous Neolithic megaliths. Thirteen examples have been identified in County Meath in the vicinity of passage tombs, by far the highest concentration is in the Boyne Valley of County Meath, already home to the great passage tombs of Knowth and Newgrange. The monuments take the form of flat-topped banks encompassing circular or oval spaces with entrances facing either east or west and can measure 100 to 200 metres (330 to 660 feet) across. They are frequently located on slopes or, in a small number of cases, on the bottoms of river valleys; their builders contrived to give them a prominent siting within their immediate settings. Within these henges, archaeologists have found the systematically cremated remains of animals as well as evidence of wooden and stone posts. This indicates that henges were centres for a religious cult which had its peak in the first half of the Bronze Age. While some communal megalithic monuments, particularly wedge tombs continued to be used, the Bronze Age is characterised by a movement towards single burial and the production of prestige items and weapons, suggesting that society was increasingly stratified and warlike. In late Bronze Age Ireland the use of the metal reached a high point with the production of high quality decorated weapons, ornament and instruments, often discovered from hoards or ritual deposits. It is likely that the developed communities of the Boyne Valley were among the first to incorporate metal technology and their settlements have been excavated at a number of locations across Meath, including Monknewtown and Knowth (Waddell 1998, 117), and more recently at a number of sites along the route of the M1 Drogheda Bypass. The Bronze Age period is best known perhaps for the delicate gold artefacts and elaborate pottery styles, many of which have been identified in Meath and Cavan. While we have little evidence for Bronze Age settlement in the Boyne Valley after 1800 BC, settlement flourished in the east of the county where recent excavations have uncovered numerous sites, both enclosed and unenclosed from the period 1500 BC onwards.

The Iron Age/Early Historic Period

The Iron Age however is known as a 'dark age' in Irish prehistory. Iron objects are found rarely, but there is no evidence for the warrior culture of the rest of Europe, although the distinctive La Tené style of art with animal motifs and spirals was adopted. Life in the Iron Age in Ireland seems to have been much as it was in the early historic period – mixed farmers living in or around small defended settlements known as ringforts or stone cashels. In the first centuries AD, there began an expansion of population from west of the Shannon of groups who claimed common ancestry to Niall Níogiallach, Niall of the Nine Hostages, and who came to be known as the Uí Neill, the principal dynasty of the northern half of the country in the medieval period. The Uí Neill were split between northern and southern septs, with the Southern Uí Neill consisting of Síl Áedo Sláine (The Seed of Áed of Slane) and Clann Cholmáin Máir (The Children of Colmán the Great) who held sway over the ancient kingdoms of Brega and Míde. The area between Dunboyne and Navan would have fallen within the hegemony of the Síl Áedo Sláine, whose principal residences were at Lagore, Oristown and Knowth (Byrne 2001, 87). Lewis Topographical Dictionary records the following description, "The 'Eblani,' whose territory also extended over Dublin and Kildare, are mentioned by Ptolemy as being settled in this county. According to the native divisions it formed part of one of the five kingdoms into which Ireland was partitioned and was known by the name of 'Mithe Methe, Media or Midia,' perhaps from its central situation. Other writers, however, derive its name from the Irish 'Maith' or 'Magh,' a "plain," or "level" country, a derivation indicative of its natural character. It was afterwards divided into two parts, 'Oireamhoin,' or "the eastern country," which comprised the portion now known by the name of Meath; and 'Eireamhoin,' or "the western country," comprising the present counties of Westmeath and Longford, with parts of Cavan, Kildare, and the Kings county (Offaly).....The prince of East Meath was O'Nial, hereditary chieftain of 'Caelman' or 'Clancolman,' who is distinguished in the native annals by the name of the 'southern O'Nial.' The district surrounding the hill of Taragh (Tara) was originally called 'Magh Breagh.' On this hill, called also 'Teamor,' from 'Teaghmor,' "the great house," was held the general assembly of the states of the kingdom, which met triennially, from a very early period to the end of the sixth century. Here was preserved the 'Labheireg,' or "stone of destiny," on which the monarchs of Ireland were placed at their inauguration, and which, after having been removed to Scotland, was carried away by Edward 1st, among the other trophies of his victory, to Westminster, where it still remains.

Christianity was largely accepted across the country during the period, which saw a flourishing in the production of intricate metalwork, manuscripts and sculpture under the patronage of wealthy monasteries. This was also the period that witnessed the missions of various Irish saints abroad and the establishment of a distinct Irish church. Missionaries converted the inhabitants of County Cavan to Christianity in the 6th Century. St Feidhlim founded a church at Kilmore, while St Mogue set up an abbey at Drumlane. The economy was based on farming and various legal tracts provide valuable information on the variety of land uses and the range of crops and breeds reared; archaeological excavation has generally concurred with the information in these tracts. The settlement pattern in this period was largely rural and isolated, exemplified by ringforts and crannogs. However, some ecclesiastical sites had attained considerable size and complexity

during the medieval period while the Vikings had established permanent bases at Dublin, Waterford, Limerick and elsewhere.

County Meath increased in importance in the following centuries. The fertile land, and the large numbers of cattle supported by it, ensured the wealth of the people of the area (Dunleavy-Reynolds, 1974). The Irish Annals include references to Viking raids on monasteries throughout the country. The monks at Iona, Scotland, were driven from their island retreat by Viking raids and endeavoured to complete their illuminated manuscript at Kells, to the north of the county, in 807 AD. Kells was subsequently plundered and burnt along with other ecclesiastical foundations (Edwards 1990, 173). A Viking style burial of possible native Irish was discovered in a railway cutting at Navan, to the north-east of Trim, in 1845. Excavations revealed the skeletons of two individuals, the skull of a horse, a bronze bridle bit and harness and other 8th-century ornamental work (Wilde 1849).

Meath suffered as a result of its prominence and wealth throughout the period. There were bloody clashes throughout the eight to eleventh centuries as various groups tried to achieve or consolidate power as the following entry in The Annals of the Four Masters (AFM) indicates; “An army was led by Donnchadh Mac Gillaphadraig and the Osraighi into Meath; and they burned as far as Cnoghbha and Droichead-atha” (AFM 1039.9), while some years later “an army was led by the Ulidians, Leinstermen, and foreigners, into Meath, to demand the hostages of the men of Breagha. Their hostages were put to death by Conchobhar Ua Maeleachlainn, together with Toirdhealbhach Ua Cathasaigh; after which the forces burned the country, both churches and fortresses” (AFM1049.9). Bhreathnach (1999, 16) highlighted this point in her examination of the petty kingdom of Deiscert Breg (Southern Brega), where she lists the references in the various annals to raids, plunderings and burnings in the region between Dunboyne and Slane.

Later Historic Period

Interestingly, the location of the most important sites circa the tenth–twelfth centuries developed as important manorial centres following the Anglo–Norman conquest. One result of this prolonged internecine warfare and mistrust of rival dynasties was to facilitate Anglo-Norman expansion through the country in the late twelfth and early thirteenth centuries. In 1172, Meath was given to Hugh de Lacy, who immediately began organising its colonisation and settlement (Graham 1974, 40), involving the sub-infeudation of the county into areas roughly corresponding to modern barony divisions. In the Later Middle Ages, Cavan was a border area under the control of Irish chieftains. The Anglo-Normans had settled to the West and South as they tried to conquer Cavan but were driven back. They built a castle at Lough Oughter and a motte and bailey at Belturbet. In 1579 County Cavan took on its present boundaries.

These baronies were divided up into smaller units known as manors. There was an overwhelming growth in settlements in this period; many of these remain at the heart of modern towns and villages, for example, Navan, Ratoath, Athboy, Trim, Dunboyne, and Dunshaughlin (Bradley 1988, 34–46). The primary form of settlement in medieval Meath was based on the manorial centre. Generally, this comprised a fortification (usually a motte or later a tower house), a

manorial church and a number of dwellings, which could be nucleated or scattered around the manor. An example of one of the most important Norman military castles in the general area is Trim castle, built on the site of a Motte. A total of ninety-eight villages from this period have been identified in Meath (Graham 1974, 48), with many abandoned from the seventeenth century onwards.

Ecclesiastical centres were also prolific during medieval times. Lewis lists the following major religious structures in his description of County Meath, “The monasteries of which no ruins remain are those of Ardbraccan, Ardceath, Ardmulchan, Ardsallagh, Athboy, Ballybogan, Beaumore near Colpe, Beaubeg, Calliagh, Cloonmanan, Disert-tola, Donaghmore, Donneycarney near Colpe, Donoughpatrick, a priory of the Virgin Mary and the Magdalen Hospital at Duleek, abbeys at Dunshaughlin, and Indenen near Slane; a house of Regular Canons, an hospital of St. John the Baptist, and a chantry, all at Kells; a house of Regular Canons and a nunnery at Killeen; an abbey at Navan, on the site of which the cavalry barrack is now built; priories at Odder and Rosse, south of Taragh; an abbey of Regular Canons and a chantry at Skreen; a monastery of Grey Friars, on the site of which the sessions-house at Trim stands; a nunnery, a Greek church, and a chantry at Trim; Dominican friaries at Kilberry, Lismullen, and Dunshaughlin; besides several others now existing only in name. Columbkill's house, a stone-roofed cell, said to be one of the oldest stone-built houses in Ireland, is still traceable at Kells, in where there are also several stone crosses, one of particularly beautiful workmanship. In the cemetery at Castlekieran, in which are the ruins of a small church, is also a very fine stone cross richly sculptured”, (Lewis Topographical Dictionary).

In the early 17th Century Cavan was settled by planters from England and Scotland who laid the foundations for many towns and villages such as Belturbet, Killeshandra and Virginia. In the next century their descendants constructed large houses and estates many of which are still standing today. The countryside prospered with the growth of the linen industry. The process of turning flax plants into linen took place locally. During this time the population grew dramatically, and in 1841 nearly a quarter of a million people lived in County Cavan- over four times the current population. When the potato crop failed for two successive years in 1845 and 1846, there was widespread starvation and hardship. After the Famine, Cavan became a very rural area, with many lively market towns and villages, but few industries. Population numbers decreased in Meath and Cavan as a result of death and widespread immigration to America, Canada, Australia and New Zealand. The partition of Ireland in 1922 made Cavan into a border area once again.

The Adjacent Urban Environment

***Slane Village*:** stands on a steep hillside on the left bank of the River Boyne at the intersection of the N2 (Dublin to Monaghan road) and the N51 (Drogheda to Navan road). The village centre dates from the 18th century. The village and surrounding area contains many historic sites dating back over 5,000 years. The village was laid out as a model village by the Coyninghams and is a good example of 18th century town planning. At the centre of the village stands four near identical Georgian houses. The four houses stand at the intersection of the two main streets in the village. The four houses and four streets form an octagon, this feature is known as The

Square. The two main streets in the village feature 18th century gray limestone buildings with slate roofs, oriel windows and stone steps and archways.

To the north of the village rises the Hill of Slane, which stands approximately 100 metres above the surroundingsn and consequently there are a number of historic sites located around the top of the hill. In the Metrical Dindshenchas, a collection of bardic verse, the ancient Fir Bolg king Sláine was said to have been buried here, in the place that had been called Druim Fuar which came to be known in his memory as Dumha Sláine. There is an artificial mound on the western end of the hilltop. The hill may have been chosen as the site of Christian abbey due to the presence of an existing pagan shrine, the remains of which may be two standing stones in the burial yard. Muirchu moccu Machtheni, in his highly mythologized seventh century Life of Patrick, says that St. Patrick lit a Paschal fire on this hill top in 433 BC in defiance of the High King Laoire who forbid any other fires while a festival fire was burning on the Hill of Tara. However, some historians and archaeologists have suggested the Paschal Fire may have been lit at Brú na Bóinne, and possibly Knowth, instead of Slane.

The Hill of Slane can be seen from the Hill of Tara which according to Muirchu, Logaire was so impressed by Patrick's devotion that, despite his defiance (or perhaps because of it), he let him continue his missionary work in Ireland. It is somewhat more certain that Patrick appointed a bishop of Slane, Saint Erc. The Hill of Slane remained a centre of religion and learning for many centuries after St. Patrick. The ruins of a friary church and college can be seen on the top of the hill. It is known that the friary was restored in 1512. The ruins include an early gothic tower. The friary was abandoned in 1723. On the west side of the hill there are the remains of a twelfth century Norman motte and bailey, built by Richard Fleming in the 1170s. This was the seat of the Flemings of Slane, Barons of Slane. The Flemings moved to a castle on the left bank of the River Boyne, the current location of Slane Castle. The Flemings were Lords of Slane from the twelfth century until seventeenth century, when the Conyngham family replaced them as lords of Slane during the Williamite Confiscations.

Slane Castle in its existing form was reconstructed under the direction of William Burton Conyngham, together with his nephew the first Marquess Conyngham. The reconstruction dates back to 1785 and is principally the work of James Gandon, James Wyatt and Francis Johnston. Francis Johnston, one of Ireland's most distinguished architects, is responsible for the most dramatic gothic gates on the Mill Hill. The Conynghams are originally a noble Scottish family, and first settled in Ireland in 1611 in County Donegal. There has been an active association between the Conynghams and the Slane Estate dating back over 300 years, ever since the property was purchased by the family following the Williamite Confiscations in 1701. Prior to this, Slane had been possessed by the Flemings, aristocratic Anglo-Norman Catholics who cast their lot with the Jacobites. Christopher Fleming, 22nd of Slane, 17th Lord, Viscount Longford (b 1669, d 14.07.1726), was the last Fleming Lord of Slane. The present head of the Conyngham family is the seventh Marquess Conyngham. Slane Castle is currently occupied by his eldest son, the Earl of Mount Charles. In 1991, a disastrous fire in the Castle caused extensive damage to the

building and completely gutted the Eastern section facing the River Boyne. A 10 year restoration programme was completed in 2001.

Slane Mill In the 1760s Boyne Navigation opened between Slane and Oldbridge, approximately 15 kilometres down river. It consisted of a programme of canalising which also saw a series of locks constructed along the river, making it navigable to small boats from Slane to the port in Drogheda. A canal, which is part of the navigation, runs parallel to the river on the south bank near Slane. David Jebb was the engineer in charge of the construction. Once the navigation was opened as far as Slane, Jebb himself built a flour mill at Slane. Slane Mill stands on the north bank of the River Boyne beside the N2 bridge. The mill is a five storey cut stone building. When the mill was completed in 1766 it was the largest flour mill in Ireland. The water powered mill continued to mill flour until the 1870s when grindstones were replaced with rollers and the mill was converted to process flax.

Dunshaughlin: is named after Saint Seachnaill, a contemporary of Saint Patrick, who established a church at the town in the 5th century. Dunshaughlin (or more specifically, the townland of Lagore) is famous for an ancient crannog or settlement from the 7th century where a number of Irish antiquities were discovered. Approximately 1.6 km south of the village is a preserved workhouse abolished by the Irish State in the early twenties. In the post-famine years, the workhouse rarely had more than a few dozen inmates. During the First World War, the building was used to accommodate Belgian refugees, some of whom died there and were buried in the paupers' graveyard. In 1920-21, the building was taken over as a barracks by the Black and Tans during the Irish War of Independence. Following the creation of the Irish Free State in 1922, the workhouse system was abolished. The workhouse buildings subsequently had a variety of uses including a courthouse and school.

Kingscourt*:* was founded near the site of the old village of Cabra, by Mervyn Pratt esq., towards the end of the 18th century, and was completed by his brother, the Rev. Joseph Pratt. The town has a rich and varied history. Cabra Castle, is a fine example of a Norman-style castle, and is located near the town. The castle was originally called Cormey Castle and was a rebuilding of an earlier Cormey Castle which had been destroyed during the Cromwellian War.

5.3.2 Archaeological and Architectural Heritage Background

5.3.2.1 World Heritage Site – Brú na Bóinne

Within the proposed study area for the Woodland to Kingscourt Eastern Route Options (A, B1, B2 and C) is the Brú na Bóinne World Heritage Site. Brú na Bóinne is one of the world's most important archaeological landscapes. The landscape is comprised of approximately 93 Recorded Monuments including three which are afforded National Monument Status. The core is about 780 hectares with a buffer extending to enclose a total of 3,300 hectares (Figure 5-1).

Nine cultural phases are known in Bru na Bóinne, but it is best known for the passage tombs of the Neolithic period. There are 40 passage tombs in the valley, with clusters at sites such as Knowth, Dowth, Ballincrad, and Newgrange.

The majority of the monuments are concentrated on the north side of the river. The most well-known sites within Brú na Bóinne are the impressive passage graves of Newgrange, Knowth and Dowth, all famous for their significant collections of megalithic art. Each stands on a ridge within the river bend and two of the tombs, Knowth and Newgrange appear to contain stones re-used from an earlier monument at the site. There is no in situ evidence for earlier activity at the site however, save for the spotfinds of flint tools left by Mesolithic hunters. Numerous other enclosure and megalith sites have been identified within the river bend and have been given simple letter designations such as the "M" Enclosures. In addition to the three famous tombs, several other ceremonial sites constitute the complex including:

- Dowth Hall passage graves
- Cloghalea Henge
- Townleyhall passage grave
- Monknewtown henge and ritual pond
- Newgrange cursus

The nearest of the main monuments to the proposed pylon line is the Knowth complex of prehistoric passage tombs just west of Newgrange in County Meath. Dating from about 3000 BC, Knowth consists of a large central mound surrounded by several smaller ones. It is especially important for its rich collection of megalithic art, which includes over 300 decorated stones.
Newgrange, Nowth & Dowth are located on high ground with commanding views over the Boyne River valley and the surrounding landscape.

The Meath County Development Plan contains a specific section relating to the site (Section 8.3.3 Brú na Bóinne World Heritage Site, Page 332), including policies relating directly to the site within this section and others. The following is an extract from this section:

"The area surrounding the Brú na Bóinne World Heritage Site and the adjoining Battle of the Boyne site are of regional to international amenity and heritage importance and contains areas of the highest visual quality in the county. This area is very sensitive to all categories of new development, particularly housing, large agricultural structures, extractive industries, coniferous afforestation and pylons or other tall structures which impinge from outside the visual envelope along the valley. There are a large number of views and prospects that are sensitive to inappropriate forms of development."

In 2004 UNESCO-ICOMOS delegated a reactive monitoring mission with regard to a proposed incinerator which was to be built 1.5km to the south of the World Heritage Site buffer zone as outlined in the Brú na Bóinne Management Plan 2002.

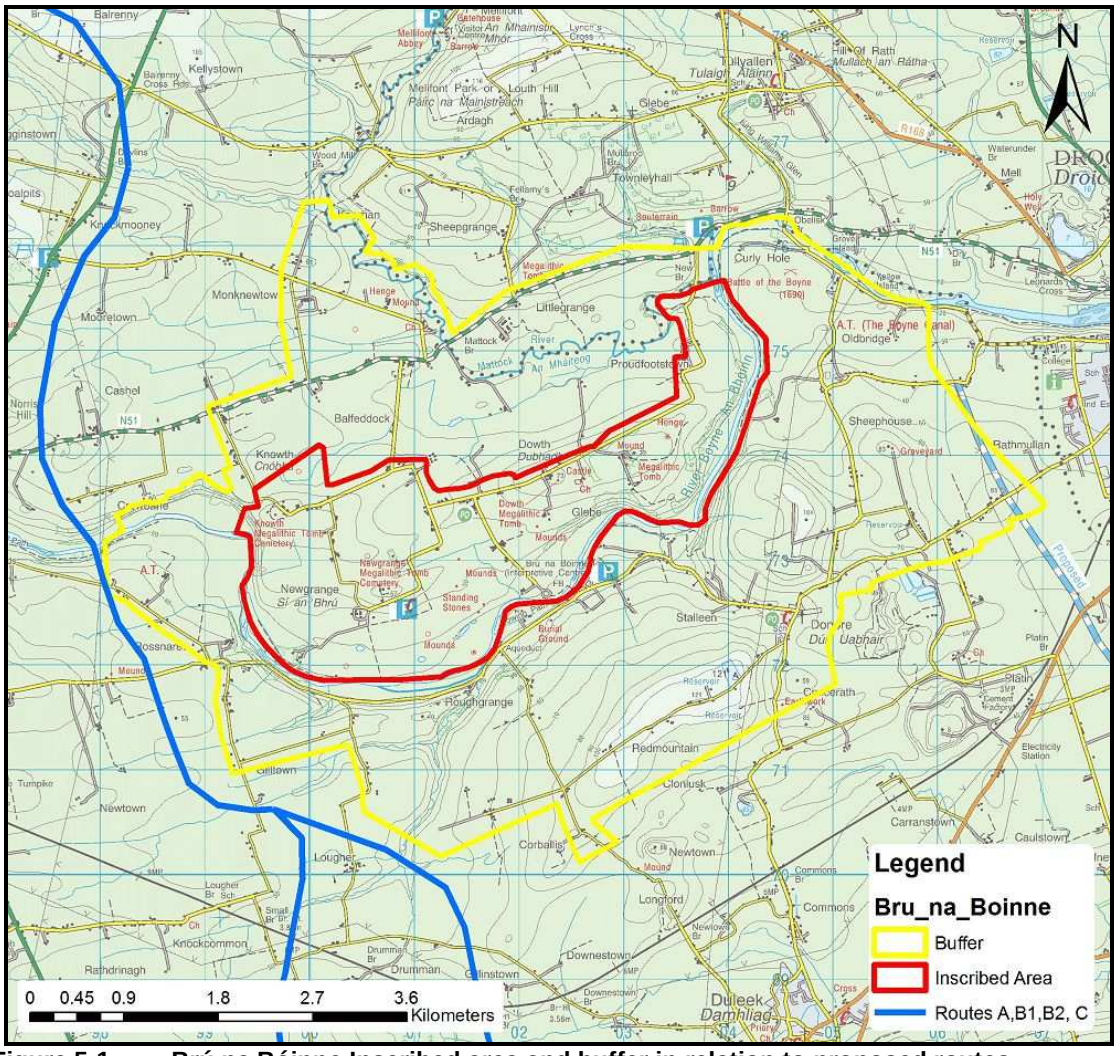


Figure 5-1 Brú na Bóinne Inscribed area and buffer in relation to proposed routes.

5.3.2.2 National Monuments

A National Monument is a monument (or remains of) under preservation by the State, as a result of its being considered to be of national importance. The legal basis for this status are the National Monuments Acts 1930 to 2004. The original itinerary of monuments comprises those to which the Ancient Monuments Protection Act, 1882 applied. The most recent amendment act, the National Monuments (Amendment) Act 2004 includes provisions for the partial or complete destruction of National Monuments by the government. A National Monument comprises the monument itself, as well as the site of the monument and the means of access to it. Land adjoining this may also be included as part of the National Monument, if required to protect the monument itself. Figure 5.1 ”Archaeolgical & Architectural Heritage” Volume II depicts a map of the National Monuments in relation to the three proposed route options. The impact of the proposed development would be deemed very high on any national monument due to their archaeological importance and the legal protection afforded to sites of such status. There are 11 National Monuments in proximity to the proposed route options. Outlined below are the National

Monuments where there is greatest potential for impact due to their proximity to the proposed scheme, in order from Woodland (South) to Kingscourt (North).

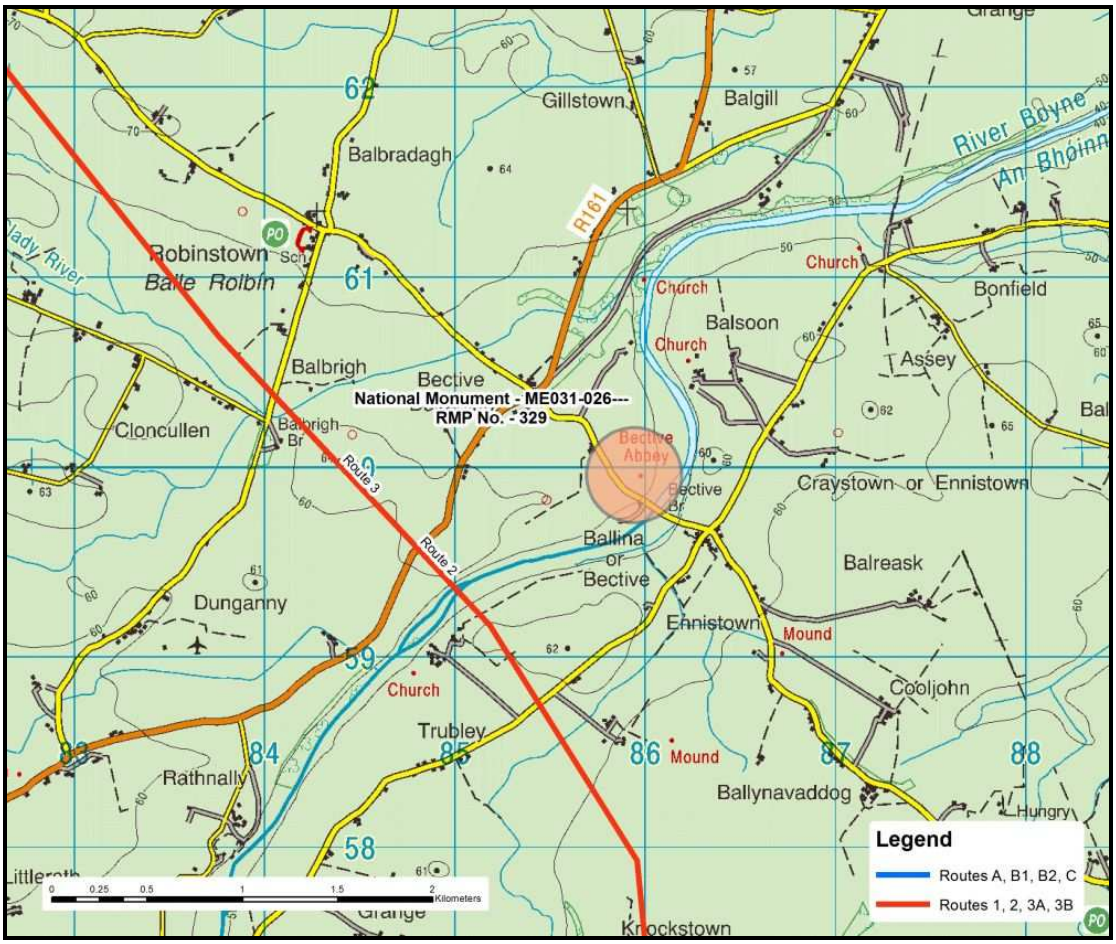


Figure 5-2 Extract from OS Discovery Series map showing ME031-026 at Bective

SMR No.: ME031-026
Nat Grid Ref.: 285980 259960
Townland: Bective
Classification: Abbey (Cist.)
Nearest Route/s: Centre approx 1200m from Routes 2 & 3
Description: The abbey was founded in 1150 by Murchad O Maeil-Sheachlainn, King of Meath, for the Cistercians, and dedicated to the Blessed Virgin. It is one of the earliest Cistercian abbeys in Ireland. The Abbot sat in the Parliament of the Pale. Hugh de Lacy's body was buried here in 1195, but after a dispute it was later transferred to St Thomas's in Dublin. Of the original 12th century abbey only remnants of the south of the nave arcade, parts of the south transept, the chapter house, part of the west wing of the domestic buildings and some of the doorways in the south wing remain. In the 15th century, the buildings were fortified and great changes took place. The southern arcade of the nave was blocked up, the present cloister and many of the buildings around it (excluding the chapter house) were built. This cloister is the best feature of the abbey: one of the pillars bears a figure carrying a crozier. The tower, and the

great hall in the south wing (probably the monks' refectory) were also added in this period. At some later period further alterations took place in the south transept; the oven between the south transept and the chapter house was inserted and an external entrance to the south range was also added. The monastery was suppressed in 1536. In the following year, the abbey and its lands were leased to Thomas Agarde, and they were bought by Andrew Wyse in 1552. Subsequently it passed to the Dillons and then to the Boltons.

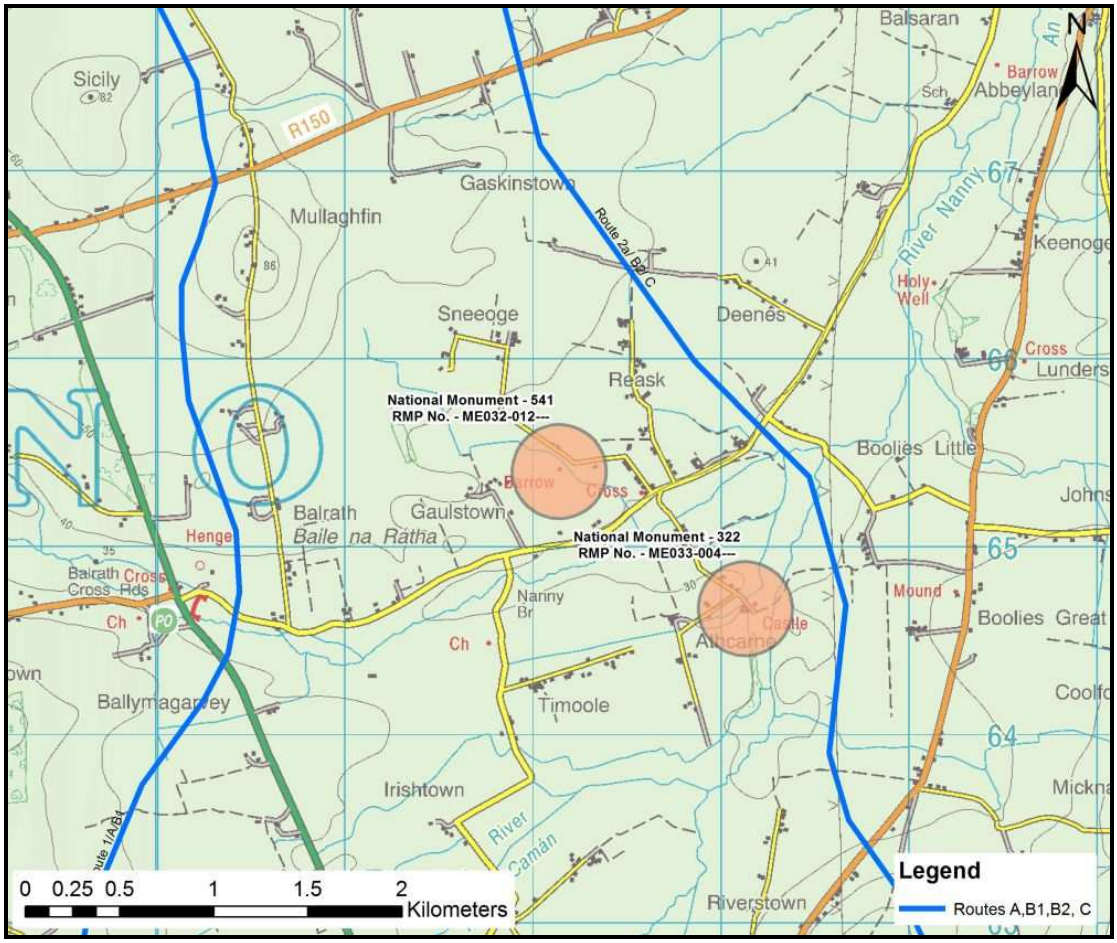


Figure 5-3 Extract from OS Discovery Series map showing ME032:12 at Gaulstown and ME033-004 at Athcarne

RMP: ME032:12
NGR: 0215 6540
Townland: Gaulstown
Classification: Mound
Nearest Route/s: Centre approx 900m from Routes B2 & C
Description: Circular domed Mound (diam. 12m, max. h 1.4m).

RMP: ME033:004
NGR: 0313 6115
Townland: Athcarne
Classification: Castle
Nearest Route/s: Centre approx 500m from Routes B2 & C
Description: Four-storey 16th century tower house. Ground floor has two barrel vaulted chambers. Direct access to both chambers and stairs tower at W, through individual pointed doorway arches. Upper storeys have two rooms with large windows. Gardrobe in NW wall at second floor. Wall walk survives. Stone house was once attached to SW.

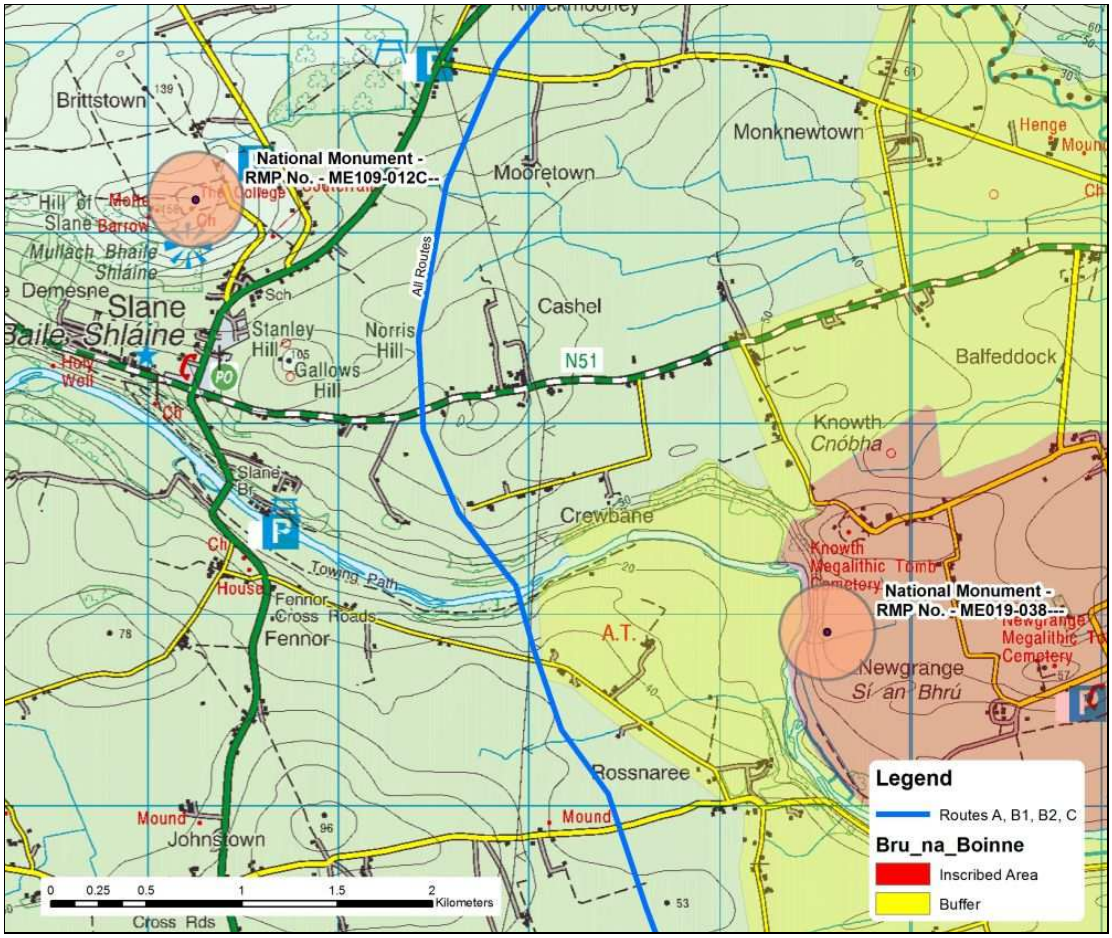


Figure 5-4 Extract from OS Discovery Series map showing ME109:012C at Slane and ME019:038 at Knowth

RMP: ME019-012C
NGR: 296240 275180
Townland: Slane
Classification: Friary
Nearest Route/s: Centre approx 1300m from Routes A, B1, B2 & C
Description: The site is intimately associated with the lighting of the first Paschal Fire in Ireland by St Patrick in 433, thus symbolising the triumph of Christianity over paganism. St Erc founded a monastery here in Early Christian times, and there was also a medieval abbey here, but little is known about the history of the place until it was re-built in its present form in 1512 when Sir Christopher Flemmyng founded a small Franciscan friary here. Both it and the College beside it were surrendered in 1540, and in 1543 the lands were granted to Sir James Flemmyng. In 1631 the Capuchins were settled in the monastery, where they stayed until the advent of Cromwell. The church has a nave and chancel, and a short south aisle, as well as a tower at the western end. The window on the eastern face of the tower, just above the door, is earlier and is probably taken from an older church on the site. Nearby is the College which was founded by Sir Christopher Flemmyng for four priests, four lay-brothers and four choristers. It is built around an open quadrangle, with the priests' residence on the north side, and a tower on the south side. In the south wall there are some fine windows, forming part of what was probably a refectory or reading room. The use of the other rooms is not known, but most of them have fire-places. Built into the west wall of the southern wing is the representation of a dragon. To the east of the college are the remains of a gateway, possibly built after the College went out of use at the Dissolution of the Monasteries in 1541.

RMP: ME019-038
NGR: 299550 272910
Townland: Knowth
Classification: Passage Tomb
Nearest Route/s: Centre approx 1700m from Routes A, B1, B2 & C
Description: In this great mound about 40 feet high and 220 feet in diameter two great passage-Graves were discovered in 1967 and 1968. One of the chambers is corbelled, like that at Newgrange, and is round and has side chambers; the other has a flat roof and looks like little more than a widening of the passage. Both graves are richly decorated with megalithic art, as are also many of the kerbstones surrounding the base of the large mound. The entrances to the tombs were considerably disturbed in the Early Christian Period by the building of souterrains, which seem to penetrate into the mound like rabbit burrows. As the Passage Graves have not yet been excavated, no dating evidence has yet come to light, but it is likely that this great mound was raised between 2500 and 2000 B.C. Excavations during the last 8 years have uncovered 15 satellite tombs (smaller passage graves) and other ritual features dotted around the base of the mound. In the 9th and 10th centuries Knowth was the seat of the kings of Northern Brega, and the Normans used the mound as a motte at the end of the 12th century.

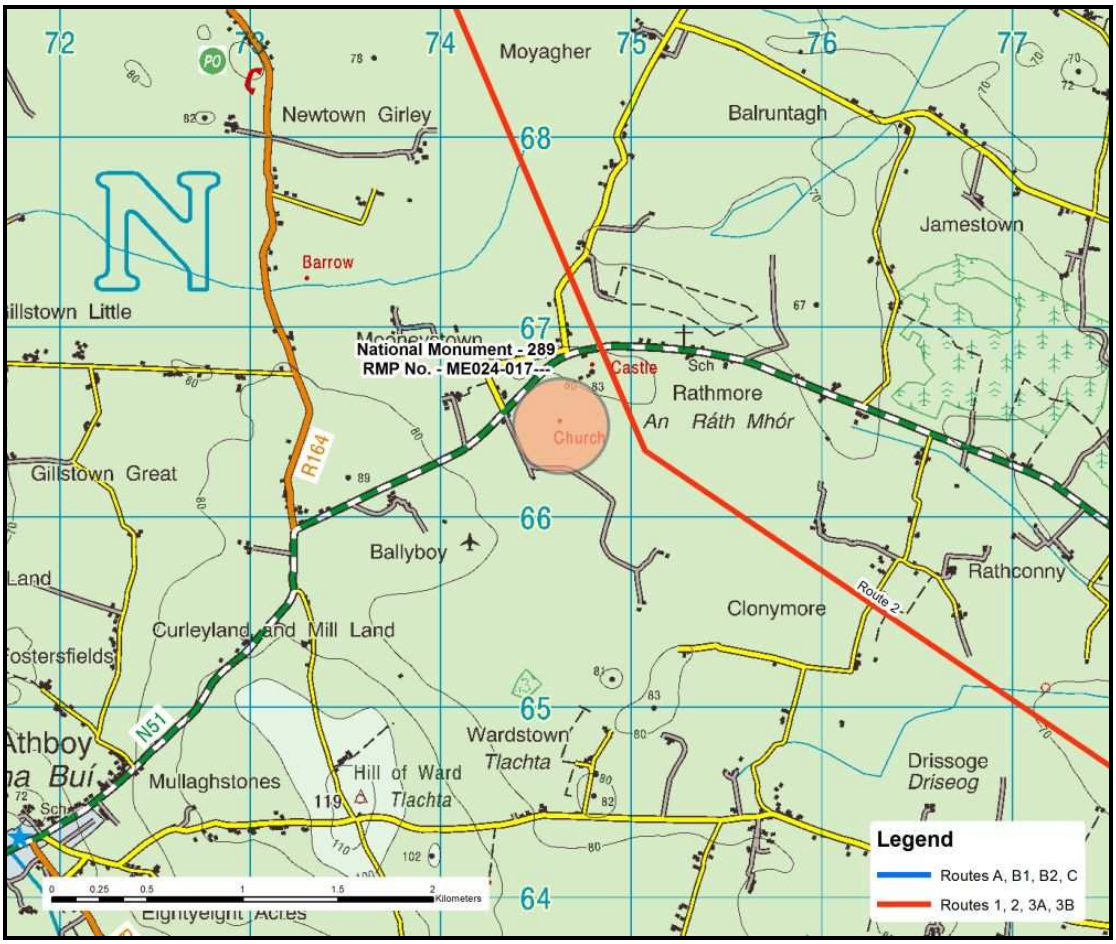


Figure 5-5 Extract from OS Discovery Series map showing ME024-017 at Rathmore

SMR No.: ME024-017
Nat Grid Ref.: 274620 266500
Townland: Rathmore
Classification: Church, Cross & Base
Nearest Route/s: Centre approx 350m from Route 2
Description: A church built probably by Sir Thomas Plunkett in the mid 15th century, and dedicated to St Lawrence. It remained in use until at least 1678. Though the nave and chancel were built separately, they were both built around the same time. At each corner there is a tower; that on the north east being a sacristy with living quarters overhead, while the belfry is at the south western corner. There is a fine sedilia and piscina, and a very good east window with sculptures of kings and queens on the outside. The altar has niches containing angels swinging censers, St Lawrence with the grid-iron, bishops, an abbess with a croiser, and the coat of arms of the Plunkett, Fitzgerald, Talbot, Fleming, Eustace, Bellew, Bermingham and Cusack families. There is also a double-effigy tomb of the founder and is wife erected around 1471, as well as a 15th century font. A cross to the north of the church was erected by Christopher Plunkett and his wife Catherine in 1519, and shows St Lawrrence (again with grid-iron), St Patrick or an archbishop, an abbess and vine-leaves. The church resembles those at Dunsany and Killeen.

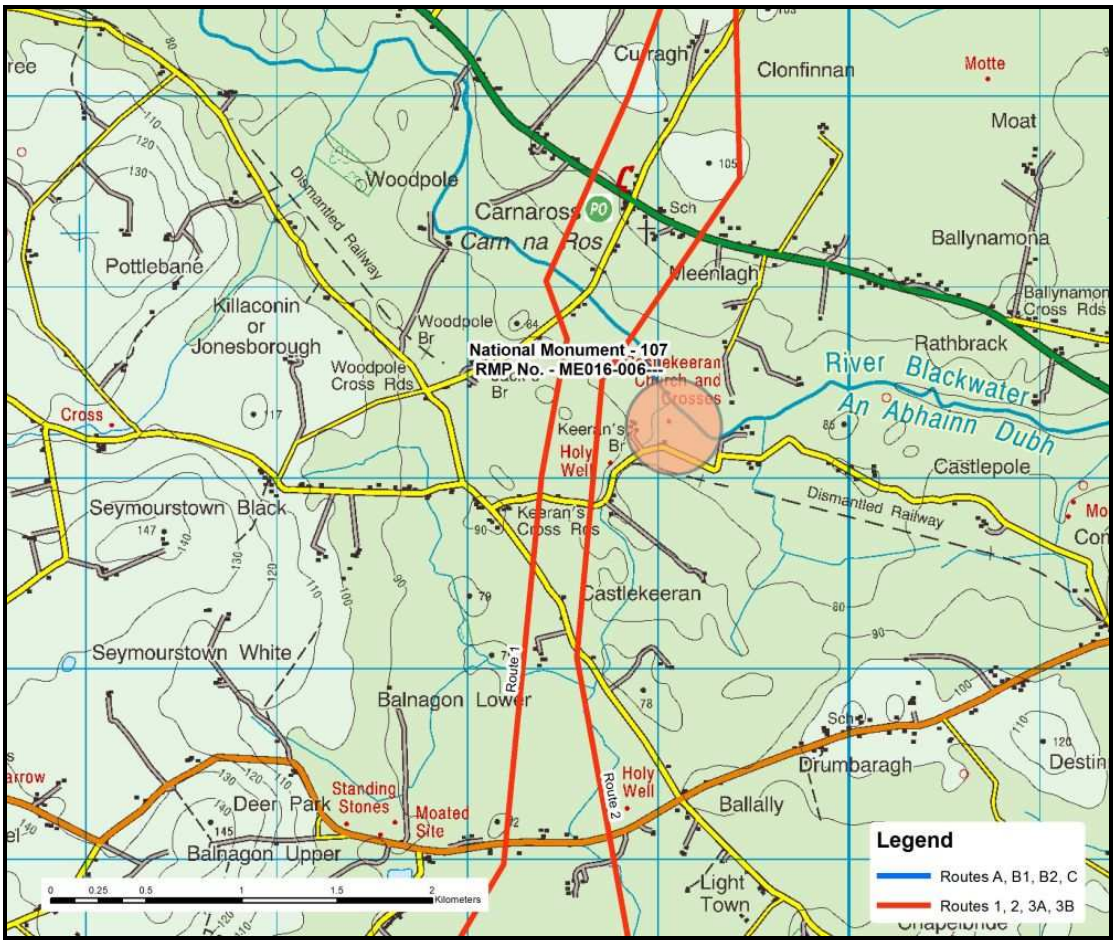


Figure 5-6 Extract from OS Discovery Series map showing ME016:006 at Castlekeeran

SMR No.: ME016-006
Nat Grid Ref.: 269080 277270
Townland: Castlekeeran
Classification: Chapel, Cross
Nearest Route/s: Centre approx 390m from Route 2
Centre approx 630m from Route 1

Description: The place is called Diseart Chiarain, the Hermitage of Ciaran, who was a monk of the monastery at Kells nearby, but who is not to be confused with the founder of Clonmacnoise. The monastery was plundered by the Vikings in 949 and by Dermod McMurrough in 1170. In the 13th century it passed to the Knights Hospitallers and by the 16th century it was owned by the Plunketts. There are three High Crosses with moulding at the edges, but none of them bears figure sculpture. One has bosses at the centre of the arms and another has interlacing at the end of the arms. Beside the insignificant remains of a church there is also an Early Christian graveslab, and an Ogham stone with the inscription “COVAGNI MAQI MUCOI LUGUNI”. In the River Blackwater beside the monastery there is another High Cross; tradition says that it was dumped in the river by St Columba when St Ciaran caught him red-handed taking it to his nearby monastery at Kells.

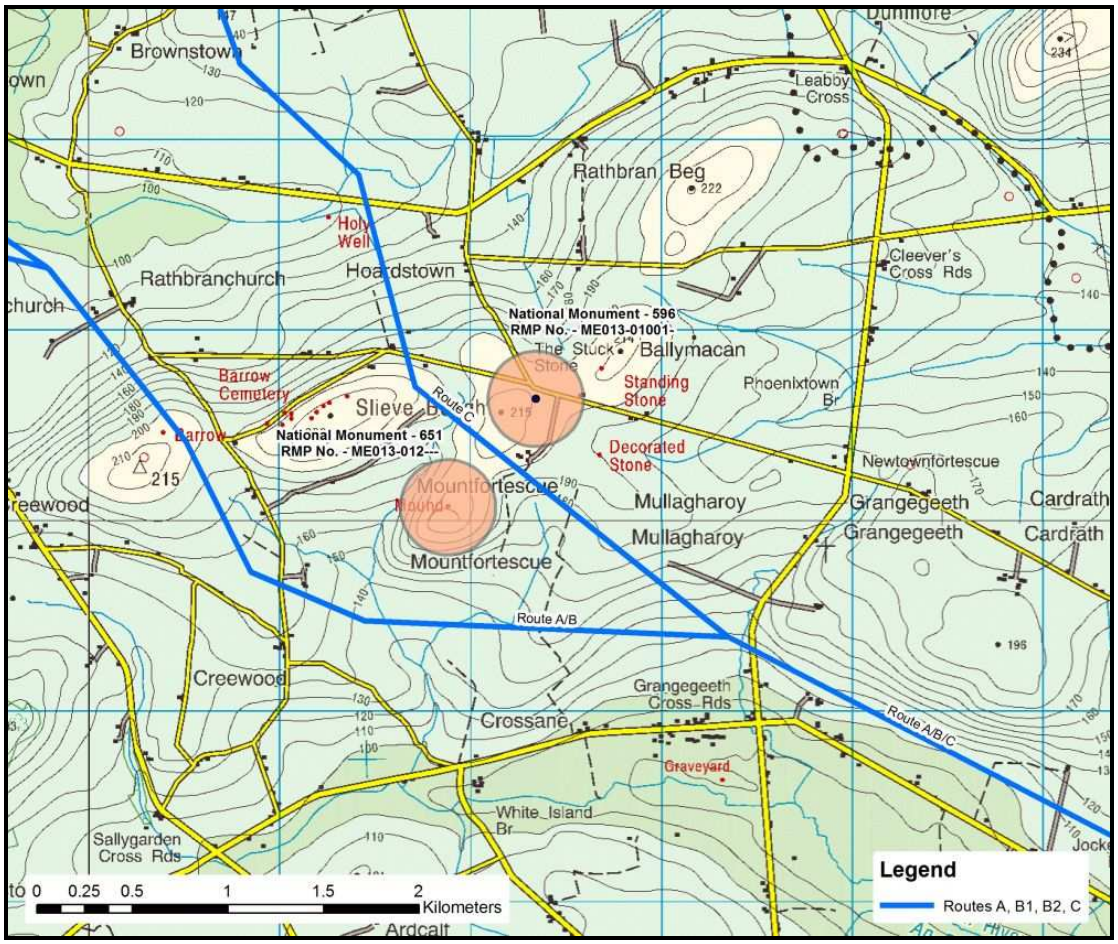


Figure 5-7 Extract from OS Discovery Series map showing ME013:11001 at Hoardstown and ME013-012 at Mountfortescue

RMP: ME013:01001
NGR: 294340 280640
Townland: Hoardstown
Classification: Slieve Breagh Earthworks.
Nearest Route/s Centre approx 340m from Routes B2 & C

RMP: ME013:12a
NGR: 9387 7997
Townland: Mountfortescue
Classification: Ringditch, Tumulus and Hillfort
Nearest Route/s: Centre approx 360m from Routes B2 & C
Centre approx 600m from Routes A & B1
Description: Large enclosure, circular area surrounding tumulus (199) defined by earthen bank with external ditch (diam. 164m).

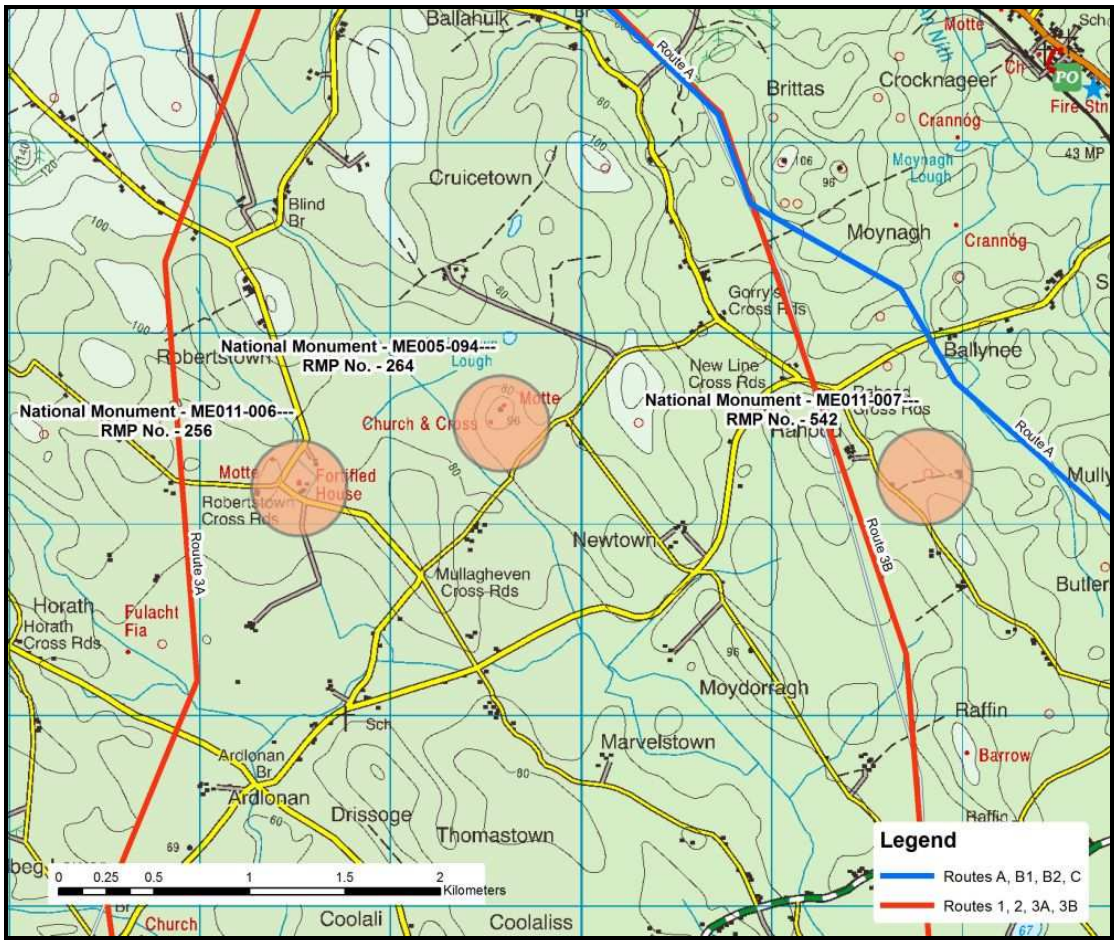


Figure 5-8 Extract from OS Discovery Series map showing ME011-006 at Robertstown, ME005-094 at Cruicetown and ME011:007 at Rahood

SMR No.: ME011-006
Nat Grid Ref.: 278530 284190
Townland: Robertstown
Classification: Castle
Nearest Route/s: Centre approx 620m from Route 3a
Description: A three-storey castle with gabled roof built in the 17th century. The ground floor is a series of vaulted rooms; the first floor is divided into three rooms. Its most unusual features are the two projecting towers on the first floor, which have corbels at the bottom like those in Scottish castles.

SMR No.: ME011-007
Nat Grid Ref.: 278520 284190
Townland: Rahood
Classification: Fort
Nearest Route/s: Centre approx 410m from Route 3b
Centre approx 450m from Route A

Note: There is a discrepancy between the National Monuments Index and the RMP in relation to this site, ME011-007 is mistakenly recorded as being in Robertstown townland located further to the west near Robertstown motte and fortified house. The site RMP ME011-007 however is a rath in Rahood townland (see figure 5.8 above).

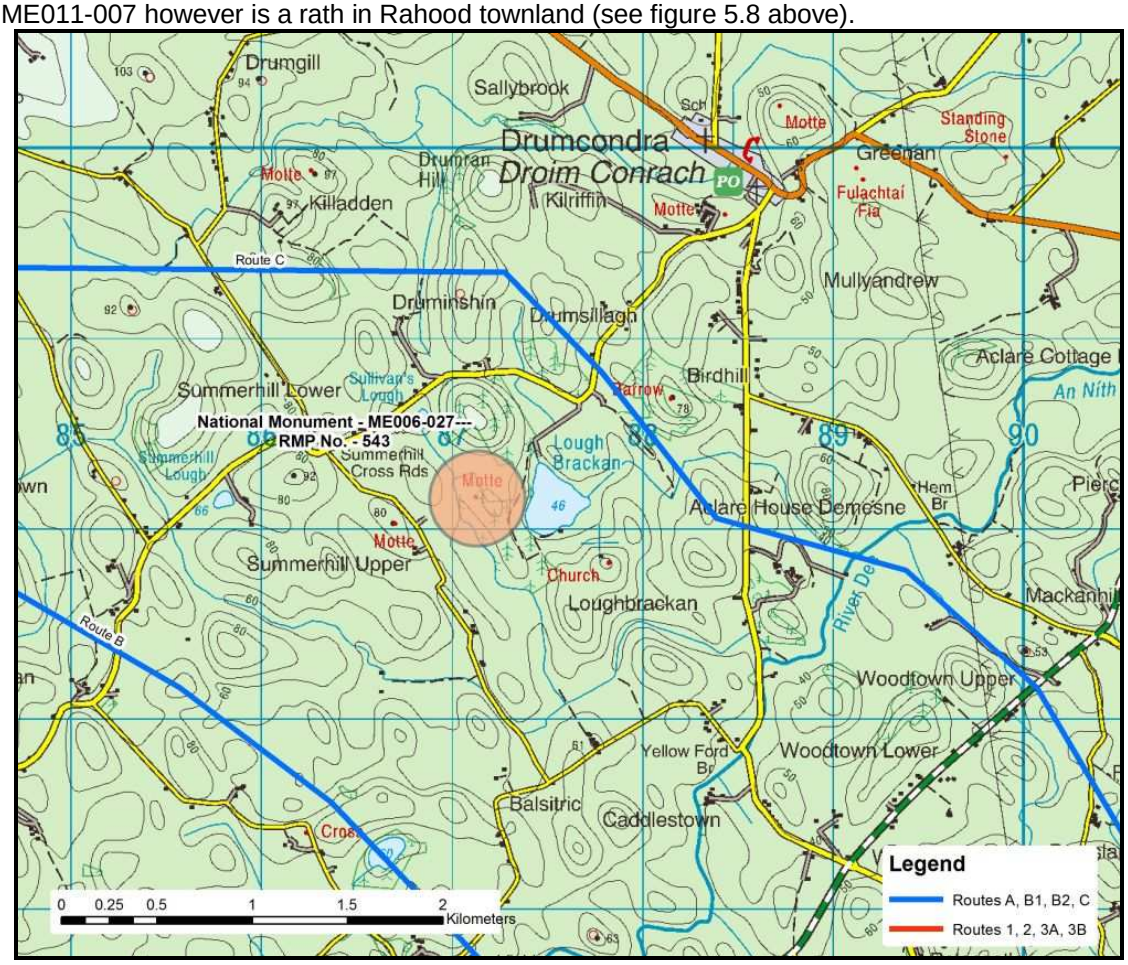


Figure 5-9 Extract from OS Discovery Series map showing ME006:027 at Loughbracken

SMR No.:	ME006-027
Nat Grid Ref.:	287130 288170
Townland:	Loughbracken
Classification:	Fort
Nearest Route/s:	Centre approx 920m from Route C
Description:	None Available

5.3.2.3 Record of Monuments and Places (RMP)

The RMP is a database established under Section 12 of the 1994 National Monuments (Amendment) Act recording all archaeological sites in Ireland known to the National Monuments Service. It is largely based on Sites & Monuments Record (SMR) Ordnance Survey 6" sheets, which indicate the location of each monument or place of archaeological interest. For each, a file contains further documentary and photographic data or information relating to an archaeological event such as a site visit, survey or excavation. These are housed in the National Monuments Services in Dublin. The record is constantly updated and focuses on monuments that pre-date 1700.

Mapping of all archaeological sites during Phase one of this study facilitated the lead consultant in avoiding direct physical impact upon any RMP sites. While the route selection has tried to avoid where possible the highest density of sites there are currently almost 2,800 RMP sites listed in Meath alone, making it impossible to avoid potential visual impact upon all. Within a 1,000m radius of all routes there are 545 RMP sites listed. Within this there are a number of structures where there would be of high potential for visual impact, these are upstanding structures such as churches, castles, abbeys and overgrown remains of elevated enclosures and mounds and archaeological landscapes. The perceived impact is lower where the smaller scale of the features would reduce impact. This can be very subjective and further inspection is necessary at the EIS Stage.

5.3.2.4 Architectural Data (post 1700 AD)

There is a high degree of overlap between the National Inventory of Architectural Heritage and the Record of Protected Structures (RPS). For the most part the impact on these structures is deemed high as they are upstanding structures of cultural importance, for example a country house or a church. The perceived impact is lower where the scale of the feature could reduce impact.

National Inventory of Architectural Heritage

The National Inventory of Architectural Heritage (NIAH) is a unit within the Department of Environment, Heritage and Local Government (DoEHLG) engaged in compiling an evaluated record of the architectural heritage of Ireland. Where an NIAH survey of a particular area has been published, relevant planning authorities will be provided with information on structures within the area of that survey. The planning authority can assess the content of, and the evaluations in, an NIAH survey with a view to the inclusion of structures in the RPS according to the criteria outlined in these guidelines. Structures included within this inventory are deemed of architectural, historical, archaeological, artistic, cultural, scientific, technical and social interest. An inventory was compiled for County Meath in 2004. No inventory is available for County Cavan as yet.

Table 5-2 NIAH classifications and quantities for all routes

National Inventory of Architectural Heritage	
Classification	***Count***
bollard	1
Bridge	5
Chimney	1
church/chapel	6
Country house	1
farm house	3
farmyard complex	1
gate lodge	1
gazebo	1
graveyard/cemetery	2
house	12
mausoleum	1
milestone/milepost	2
mill (water)	4
miller's house	2
outbuilding	3
post box	2
Post office	1
presbytery/parochial/curate's house	1
Public House	2
rails (section of)	1
railway station	1
rectory/glebe/vicarage/curate's house	1
RIC barracks	1
school	2
stables	1
toll house	1
vent pipe	1
water pump	1
Water tower	1
(blank)	39
Total NIAH Sites	***102***

Record of Protected Structures (RPS)

The law in relation to this subject is set out in the Planning and Development Acts, 2000 and 2001 and the Planning and Development Regulations, 2001 and 2002. Under new arrangements which came into operation on 1 January 2000, the system of listing buildings has been replaced with strengthened procedures for the preservation of protected structures and structures in architectural conservation areas. Other historic structures may alternatively, or in addition, be protected under the National Monuments Acts 1930 - 2004. The conservation principles of care and protection of the architectural heritage were first introduced under earlier planning legislation which facilitated the listing of significant buildings and the formulation of policies and objectives relating to such structures. These legislative provisions were superseded by the introduction of the Local Government (Planning and Development) Act 1999 and then by Part IV of the Planning and Development Act 2000. The main features of the Act are:

1. Planning authorities have a clear obligation to create a record of protected structures (RPS) which includes all structures or parts of structures in their functional areas which, in their opinion, are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. This record forms part of a planning authority's development plan.
2. Planning authorities are also obligated to preserve the character of places and townscapes which are of special architectural, historic, archaeological, artistic, cultural, scientific, social or technical interest or that contribute to the appreciation of protected structures, by designating them architectural conservation areas (ACAs) in their development plan (see following paragraph).
3. Development plans must include objectives for the protection of such structures and the preservation of the character of such areas to ensure proper and sustainable planning and development.

In regard to the impact of the proposed route options visual impact of each pylon will be a primary concern. There are a number of RPS structures within the study area for all route options. Should the positioning of a pylon impinge on or near a protected structure and its landscape, the impact would be considered high.

Vernacular Architecture

Vernacular architecture encompasses the homes and workplaces of the ordinary people built by local people using local materials. This is in contrast to formal architecture, such as the grand estate houses of the gentry, churches and public buildings, which were often designed by architects or engineers. The majority of vernacular buildings are domestic dwellings. Examples of other structures that may fall into this category include shops, outbuildings, mills, limekilns, farmsteads, forges, gates and gate piers. This architecture of the ordinary people was once commonplace but is becoming increasingly rare. For example, Meath was once renowned for its thatched cottages. The majority of vernacular buildings are domestic dwellings.

Architectural Conservation Areas (ACA)

An ACA is a place, area, group of structures or townscape, which is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. They also include areas, which contribute to the appreciation of Protected Structures. It is concerned as much with the setting of the structures and their interrelationship, though it may relate to urban forms of distinctiveness or to a particular relationship, or landscape settings. Having a building within the Architectural Conservation Area has the effect of de-exempting works to the exterior of any structure within the ACA where the proposed works would materially affect the character of the area concerned.

The eastern route options (A, B1, B2, C) impact near the 3 designated areas of architectural conservation in Slane, namely Slane Castle Demense, Slane Village and Slane Mill. At its closest point these routes pass within about 280m of the Slane Castle Demesne ACA.

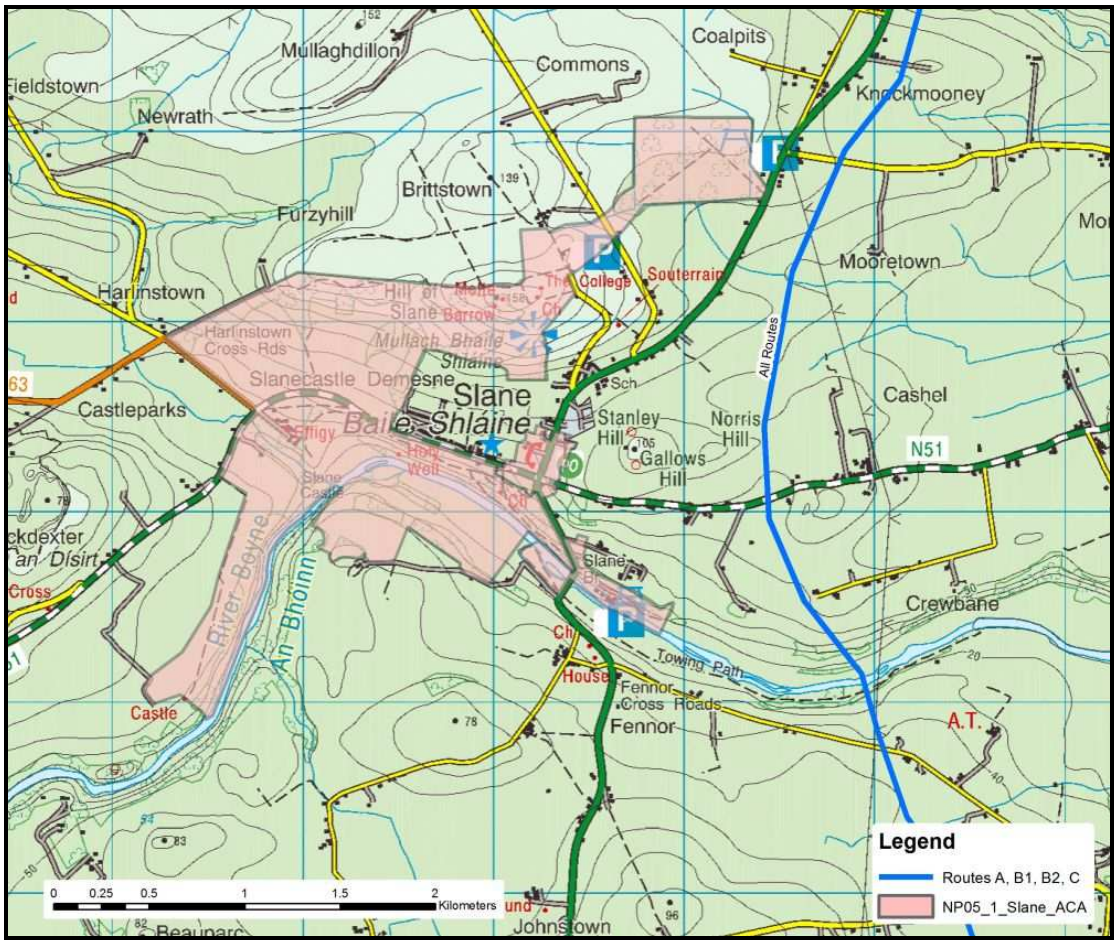


Figure 5-10 Location of Slane ACAs in relation to proposed route options A, B1, B2, & C

Slane Village ACA

Historical Development

A perfect example of a planned 18th Century estate village, planned by the Coyningham successors to the old Norman lords. The focal point of the village known as the square was laid out during the 1760's, and is at the intersection of two national routes, flanked by four matching Georgian houses all with wings and forming a diamond.

Layout and built form

On the streets to the west and north, the vistas are framed by stands of mature trees with the towers of the churches breaking the skyline. The streets leading out of the square are composed of terraces of two –storey houses of squared limestone, or smooth render, with slated roofs, traditional shop fronts, fanlight doorcases, carriage arches, and masonry walls.

Slane Mill ACA

Due to its location on the Boyne and at the heart of a rich corn growing area, Slane provided the ideal site for a large mill. The mill buildings are of outstanding importance as an example of an early purpose built industrial complex dating from the start of the industrial revolution. It represents a natural progression from the creation of the Boyne navigation between Navan and Drogheda. The mill, a very large but well proportioned building in the style of a country mansion and the miller's house rather like a grand glebe house were both completed by 1766. The mill was funded by Townley Balfour and built and run by David Jebb, the engineer for the navigation board. By the mid-nineteenth century the mill ceased to function as a mill and was used as a general store instead. No longer attractive or profitable as a corn mill the building was adopted for cotton manufacture. The mill house ceased to be used as accommodation for the managers and operated as the Bournville hotel, catering for tourists.

The gate lodge, water channels, mill house, gates and mill workers cottages form an interesting and important group of mill related structures. Along with Slane castle and the wooded slopes leading down to the river, the mill presents views that cannot be far removed from the 18th Century landscape.

5.3.2.5 Further Archaeological Constraint Zones

Cavan County Council has also designated the areas below as locations to be considered in proposed development plans. The Dunree Forest Park, Kingscourt though, not impacted by the proposed scheme, is included due to its geographical proximity to the proposed substation in the vicinity of Kingscourt.

Dunaree Forest Park, Kingscourt: This forest park contains a rich archaeological, historical, architectural and cultural heritage. Apart from its rich forestland there are many buildings of significance dating from the nineteenth and twentieth centuries. Cabra Cottage is one such building and to its north is the site of the old Cabra village, which is marked on early editions of ordnance survey maps. Also in the park is a bridge known as 'Cromwell's Bridge' built most likely

by Cromwellian forces. There are a number of features associated with the Pratt family whom previously resided here, including a wishing well and an icehouse. The Forest Park was established in 1959 when the Forestry and Wildlife Service acquired the lands.

5.3.2.6 Sensitive Landscapes

Hill of Tara Archaeological Complex

The historic Tara Skryne area is considered to be of exceptional value and is of international importance. Having regard to the areas value from a heritage perspective, in consultation with the heritage council and DoEHLG, the Planning Authority propose to designate the area a Landscape Conservation Area. The area is highly sensitive to development, in particular large-scale visually obtrusive developments, whether large farm buildings, infrastructure, windfarms, pylons, or forestry. The area has some capacity to absorb one-off housing, visitor facilities and conversions of existing buildings. Design and siting will be instrumental in the determination of the nature and scale of development which can be absorbed within this landscape character area (Meath County Development Plan 2007-2013).

All the proposed routes avoid this sensitive landscape with the closest being routes 2, 3a and 3b which are located in excess of 6km to the west of Tara.

Loughcrew Archaeological Complex

This area is of international importance, and is of exceptional value, both from a visual as well as heritage perspective. It encompasses an upland area to the south of Oldcastle that contains significant archaeological remains and which offers commanding views over the surrounding region. The field pattern is notably open and frequently composed of stone walling. The area is highly sensitive to development and is considered to be the most sensitive of all the areas to most forms of development. In particular, it is considered to be unable to accommodate largescale housing, overhead and underground cabling or services, new roads, rail and windfarms. Subject to good design and siting, it can accommodate one-off houses, conversions and visitor facilities (Meath County Development Plan 2007-2013).

All the proposed routes avoid this area, with the nearest being routes 1 and 2 which are located in excess of 9km to the east of Loughcrew.

Slieve Bregh / Breagh

Slieve Breagh is a peak with commanding views towards the west end of the uplands running from Collon to Rathkenny forming the Northern backdrop to the Boyne Valley. It is the site of a barrow cemetery comprising at least twelve specimens. The barrows are not susceptible to typological dating; however the excavation of a nearby Neolithic settlement with two circular houses and the splendid Mountfortescue hillfort immediately to the south demonstrates that the area had seen significant activity throughout prehistory. The barrows are aligned east/west. On the lower terrace on the west side of the hill are two small henges and it is possible that two of the large barrows near the summit are also henges.

The Hill of Slane

The Hill of Slane stands 158 metres above the surroundings and commands good views in all directions. There is an artificial mound on the western end of the hilltop. The hill may have been chosen as the site of Christian abbey due to the presence of an existing pagan shrine, the remains of which may be two standing stones in the burial yard. The ruins of a friary church and college can be seen on the top of the hill. It is known that the friary was restored in 1512. The ruins include a 19 metre (62 ft) high early gothic tower. The friary was abandoned in 1723. On the west side of the hill there are the remains of a twelfth century Norman motte and bailey, built by Richard Fleming in the 1170s. This was the seat of the Flemings of Slane, barons of Slane. The Flemings moved to a castle on the left bank of the River Boyne, the current location of Slane Castle. The Flemings were Lords of Slane from the twelfth century until seventeenth century, when the Conyngham family replaced them as Lords of Slane during the Williamite Confiscations.

5.4 PREDICTED IMPACTS

Counties Meath and Cavan all have a significant cultural heritage, which provides a valuable cultural, educational and tourism resource. Negative impacts could permanently or temporarily affect this irreplaceable resource. Hence it is necessary to have regard to the potential environmental impacts of new infrastructure and industrial development, impinging on views, tranquillity and character and the consequences that such development may have for the cultural heritage landscape.

In the Meath County Development Plan overhead transmission lines, substations and communications masts are listed as one of the most likely forms of development to occur, which will affect the overall appearance, function and condition of the landscape. Each route option was assessed according to the physical and visual impacts in the immediate vicinity (250m) and in the extended view-shed (1000m) of the proposed project.

The Route Options

For the purpose of this report eight route options are under assessment all of which begin at Woodland and travel via various routes northwards terminating at the stations at Kingscourt, County Cavan. The Eastern Route Options share common sections where they culminate at a ‘pinch point’ located east of Slane village and to the west of the Newgrange megalithic complex to traverse the River Boyne. Due to the mix of Slane’s urban environment, industrial architecture, and early Christian associations, coupled with Brú na Bóinne’s status as a UNESCO World Heritage site, this area’s cultural/heritage significance cannot be overly emphasized.

5.4.1 Woodland to Kingscourt, Western Route Options (1, 2, 3a and 3b)

The Western Route Options all commence at Woodland heading in a westerly direction. Within a short distance Route 1 diverges from the remaining routes, continuing in a west to northwest direction south of Trim. Gradually it turns to the north remaining on the lowlands and keeping well away from Loughcrew and passing to the west of Kells while making its way towards the Kingscourt Substation Study Area.

The remaining routes all quickly turn the northwest and pass between Trim and the Hill of Tara. North of Trim Route Options 2 and 3 diverge, with Route Option 2 heading west towards Kells. At approximately 4km to the south of Kells Route Option 2 heads west again before circling to the north around the town, where it then comes into close proximity to route 1. Route option two then follows a similar, but separate route onto the Kingscourt Substation Study Area. After diverging from Route Option 2, Route Option 3 takes a more northerly route to the east of Kells where it splits into Routes 3a and 3b. The two routes continue in a northerly direction with approximately three to four kilometres separating them before coming back together again for the final five kilometres to the Kingscourt Substation Study Area.

Cultural heritage sites in the vicinity of these routes are summarised in Table 5.3.

Refer to Figure 5.1 “Archaeological & Architectural Heritage” Volume II.

Table 5-3 Cultural Heritage Sites in the vicinity of the Western Route Options

	Route 1		***Route 2***		***Route 3a***		***Route3b***	
Buffer	250 m	1000 m	250 m	1000 m	250 m	1000 m	250 m	1000 m
World Heritage Site								
National Monument (NAT_MON)								
very high		1		2		1		1
Architectural Conservation Area (ACA)								
very high								
National Inventory of Architectural Heritage (NIAH)								
High	7	25	1	29		31		28
Low								
Record of Monuments & Places (RMP)								
High	3	17	2	22	3	29		29
Medium	13	60	17	44	15	49	15	63
Low		5		4	1	8	1	6
Record of Protected Structures (RPS)								
High	6	30	3	26		46		43
Medium								
Low								

Note that the number of heritage sites in Table 5-3 above may be at variance with that stated in the Constraints Report dated July 2007 as all Route Line Options have been modified since the production of the Constraints Report to take into account the most recent studies.

5.4.1.1 Route Option 1 (Woodland to Kingscourt):

World Heritage Site

There are no world heritage sites in the vicinity of route option 1.

National Monuments

The Recorded Monument ME016:006 at Castlekeeran (Figure 5-6 in this Report), listed also as a National Monument, is located approximately 630m to the east of the proposed route option. The

site is made up of several recorded archaeological features including a Church, three high crosses, a cross, a cross slab and an ogham stone. Although the route does not physically impact upon the National Monument it is likely that given its scale and proximity there would be a visual impact upon the site.

Architectural Conservation Areas

There are no architectural Conservation Areas within closed proximity to the proposed route.

National Inventory of Architectural Heritage

Almost all the structures in proximity to the proposed route that are listed on the NIAH can be accounted for in four clusters. The clusters are located in the following townlands, listed from south to north, Summerhill, Kildalkey, Drewstown Great and Carnaross (and the adjacent townlands of Woodpole, Meenlagh). Summerhill would appear to be a demesne landscape with walls, gates, workers houses, country house etc., some 15 features in total. Kildalkey, a small town, has 9 structures including 2 churches, a graveyard, and 2 schools. Drewstown, another demesne, has surviving walls, stables and an outbuilding. Carnacross and surrounding townlands have a wealth of features in the NIAH including a church, forge, teacher's house, parochial house, schools and bridges, all located in close proximity to the National Monument at Castlekeeran.

It should be noted that some of the features noted above fall outside the 1000m buffer indicated but as they are associated with broader architectural landscapes they have been included. Although the proposed route does not physically impact upon any of the structures listed it is likely that given its scale and proximity there would be a visual impact upon some of these features and their settings within the landscape.

Record of Monuments & Places

Recorded monuments are distributed along the length of the route. The majority of sites consist of raths and enclosures, accounting for almost two thirds of the archaeological sites within 1000m of the proposed routes. Monuments of particular note are a motte and bailey and two tower houses in close proximity (<250m) to the route.

Record of protected structures

The RPS correlates to a large degree with that of the NIAH.

5.4.1.2 Route Option 2 (Woodland to Kingscourt,):

World Heritage Site

There are no world heritage sites in the vicinity of route option 1.

National Monuments

The Recorded Monument ME031:026 at Bective (Figure 5-2 in this Report) is also listed as a National Monument. A Cistercian Abbey, it is located approximately 1200m to the east of the proposed route option. The site is surrounded by a rich archaeological landscape including churches, a castle, a bridge, a tower house, souterrain amongst others. The majority of these features are located further away from the proposed route than Bective (i.e. greater than 1200m from the proposed route). Although the route does not physically impact upon the National Monument it is possible that given its scale there could be a visual impact upon or from the site.

The Recorded Monument ME016:006 at Castlekeeran (Figure 5-6 in this Report), also listed as a National Monument, is located approximately 390m to the east of the proposed route option. The site is made up of several recorded archaeological features including a Church, three high crosses, a cross, a cross slab and an ogham stone. Although the route does not physically impact upon the National Monument it is likely that given its scale and proximity there would be a visual impact upon the site.

Architectural Conservation Areas

There are no architectural Conservation Areas within closed proximity to the proposed route.

National Inventory of Architectural Heritage

Almost all the structures in proximity to the proposed route that are listed on the NIAH can be accounted for in three clusters. The clusters are located in the following townlands, listed from south to north, Galtrim, Balbradagh and Carnaross (and the adjacent townlands of Woodpole, Meenlagh). Galtrim townland contains several historical sites including a church, country house, gate lodge, farmyard complex, house and postbox. Balbradagh town contains a church, house and school all of which are listed and in the nearby townland of Balbrigh there is also a bridge. Carnaross and surrounding townlands have a wealth of features in the NIAH including a church, forge, teacher's house, parochial house, schools and bridges, all located in close proximity to the National Monument at Castlekeeran.

It should be noted that some of the features noted above fall outside the 1000m buffer indicated but as they are associated with broader architectural landscapes have been included.

Although the proposed route does not physically impact upon any of the structures listed it is likely that given its scale and proximity there would be a visual impact upon some of these features and their settings within the landscape.

Record of Monuments & Places

Recorded monuments are distributed along the length of the route. The majority of sites consist of raths and enclosures, accounting for almost half of the archaeological sites within 1000m of the proposed routes. Of particular note are a motte and tower house in close proximity (<250m) to the route. Also in the wider area (>250m) there are 9 churches listed.

Record of protected structures

The RPS correlates to a large degree with that of the NIAH.

5.4.1.3 Route Option 3a (Woodland to Kingscourt):

World Heritage Site

There are no world heritage sites in the vicinity of route option 1.

National Monuments

The Recorded Monument ME031:026 at Bective (Figure 5-2 in this Report) is listed also as a National Monument. A Cistercian Abbey it is located approximately 1200m to the east of the proposed route option. The site is surrounded by a rich archaeological landscape including churches, a castle, a bridge, a tower house, souterrain amongst others. The majority of these features are located further away from the proposed route than Bective (i.e. greater than 1200m from the proposed route). Although the route does not physically impact upon the National Monument it is possible that given its scale there could be a visual impact upon views to or from the site.

The Recorded Monument ME011-006 at Robertstown (Figure 5-8 in this Report) is also listed as a National Monument. A three storey castle, it is located approximately 620m to the east of the proposed route. Nearby are a church and motte which are also listed in the RMP. Although the route does not physically impact upon the National Monument it is likely that given its scale and proximity there would be a visual impact upon the site.

Further to the east approximately 1600m from the proposed route is another National Monument (ME005-094) a motte and church and cross situated on elevated ground. Although the route does not physically impact upon the National Monument it possible that given its scale there could be a visual impact upon views to or from the site.

Architectural Conservation Areas

There are no architectural Conservation Areas within closed proximity to the proposed route.

National Inventory of Architectural Heritage

Almost all the structures in proximity to the proposed route that are listed on the NIAH can be accounted for in six clusters. The clusters are located in the following townlands, listed from south to north, Galtrim, Balbradagh, Ardbraccan, Gibstown Demesne, Carlanstown and Eden. Galtrim townland contains several historical including a church, country house, gate lodge, farmyard complex, house and postbox. Balbradagh town contains a church, house and school which are all listed in the NIAH and in the nearby townland of Balbrigh there is also a bridge. Situated to the west of Navan within the townland of Ardbraccan are 11 structures which would appear to be closely associated. These include a bishop's palace, country house, outbuilding, workers house, gate lodge, church, three school houses and a water pump all in close proximity to one another.

All these features are approximately 1000m to the east of the proposed route. At Gibstown Demesne the cluster of structures includes a church, parochial house, church hall, house and sexton's house. On the outskirts of Carlanstown are 3 houses and a farmhouse within approximately 1000m of the route, further from the route to the west and within the town itself are also several structures. The townland of Eden in the town of Kilmainham contains 10 structures including houses, bridges, public houses and a church all greater than 250m but less than 1000m from the proposed route.

It should be noted that some of the features noted above fall outside the 1000m buffer indicated but as they are associated with broader architectural landscapes have been included.
Although the proposed route does not physically impact upon any of the structures listed it is likely that given its scale and proximity there would be a visual impact upon some of these features and their settings within the landscape.

Record of Monuments & Places
Recorded monuments are distributed along the length of the route. The majority of sites consist of raths and enclosures, accounting for almost half of the archaeological sites within 1000m of the proposed routes. Of particular note are a motte and bailey, two churches and a barrow mound, all within 250m of the proposed route. Also in the wider area (>250m) there are 12 churches, 2 fortified houses, 3 mottes, 4 barrow mounds and a portal tomb all which have a high potential for visual impact.

Record of protected structures
The RPS correlates to a large degree with that of the NIAH.

5.4.1.4 Route Option 3b (Woodland to Kingscourt):

World Heritage Site
There are no world heritage sites in the vicinity of route option 1.

National Monuments
The Recorded Monument ME031:026 at Bective (Figure 5-2 in this Report) is also listed as a National Monument. A Cistercian Abbey, it is located approximately 1200m to the east of the proposed route option. The site is surrounded by a rich archaeological landscape including churches, a castle, a bridge, a tower house and souterrain amongst others. The majority of these features are located further away from the proposed route than Bective (i.e. greater than 1200m from the proposed route). Although the route does not physically impact upon the National Monument it is possible that given its scale there could be a visual impact upon views to or from the site.

The Recorded Monument ME011-007 at Rahood (Figure 5-8 in this Report) is also listed as a National Monument. As noted previously there is a discrepancy between the National Monuments

Index and the RMP in relation to this site, ME011-007 is mistakenly recorded as being in Robertstown townland located further to the west near Robertstown motte and fortified house. The RMP site ME011-007 however is a rath in Rahood townland. There do not appear to be any other features associated with this site. Further investigation would be required to ensure this is the National Monument. If it is found to be a National Monument then although the route does not physically impact upon the National Monument it is possible that given its scale there could be a visual impact upon views to or from the site.

To the west, approximately 1600m from the proposed route, is another National Monument (ME005-094) a motte and church and cross situated on elevated ground. Between the monument and the proposed route is some elevated ground which may help to screen it. Although the route does not physically impact upon the National Monument it is possible that given its scale there could be a visual impact upon views to or from the site.

Architectural Conservation Areas

There are no architectural Conservation Areas within closed proximity to the proposed route.

National Inventory of Architectural Heritage

Almost all the structures in proximity to the proposed route that are listed on the NIAH can be accounted for in five clusters. The clusters are located in the following townlands, listed from south to north, Galtrim, Balbradagh, Ardbraccan, Gibstown Demesne, and Eden. Galtrim townland contains several historical sites including a church, country house, gate lodge, farmyard complex, house and postbox. Balbradagh town contains a church, house and school which are all listed in the NIAH and in the nearby townland of Balbrigh there is also a bridge. Situated to the west of Navan within the townland of Ardbraccan are 11 structures which would appear to be closely associated. These include a bishop's palace, country house, outbuilding, workers house, gate lodge, church, three school houses and a water pump all in close proximity to one another. All these features are approximately 1000m to the east of the proposed route. At Gibstown Demesne the cluster of structures includes a church, parochial house, church hall, house and sexton's house. The townland of Eden in the town of Kilmainham contains 10 structures including houses, bridges, public houses and a church all greater than 250m but less than 1000m from the proposed route.

It should be noted that some of the features noted above fall outside the 1000m buffer indicated but as they are associated with broader architectural landscapes have been included.
Although the proposed route does not physically impact upon any of the structures listed it is likely that given its scale and proximity there would be a visual impact upon some of these features and their settings within the landscape.

Record of Monuments & Places

Recorded monuments are distributed along the length of the route. The majority of sites consist of raths and enclosures, accounting for almost half of the archaeological sites within 1000m of the proposed routes. There are one site of particular note within close proximity (<250m), a moated

site where there is a high potential for visual impact. In the wider area (>250m) are located 12 churches, 2 mottes, a motte and bailey, 3 barrow mounds, a henge and a portal tomb all of note with regard to potential visual impact.

Record of protected structures

The RPS correlates to a large degree with that of the NIAH.

5.4.2 Woodland to Kingscourt, Eastern Route Options (A, B1, B2 and C)

The Eastern Route Options (A, B1, B2 and C), similar to the Western Study area is situated in a north-south axis between the existing Woodland 400kV substation in County Meath and a proposed substation near Kingscourt County Cavan. The study area is bounded to the north by Kingscourt town in County Cavan, to the south by Woodland substation in County Meath. The area is enclosed on the west by the Hill of Tara and the town of Navan and on the east by the Irish Sea. Settlements within the study area include Ratoath, Dunshaughlin, Slane and Nobber.

Cultural heritage sites in the vicinity of these routes are summarised in Table 5-4.

Table 5-4 Cultural Heritage Sites in the vicinity of the Eastern Route Options

	Route A		***Route B1***		***Route B2***		***Route C***	
Buffer	250 m	1000 m	250 m	1000 m	250 m	1000 m	250 m	1000 m
World Heritage Site								
	1		1		1		1	
National Monument (NAT_MON)								
very high		1				2		4
Architectural Conservation Area (ACA)								
very high		3		3		3		3
National Inventory of Architectural Heritage (NIAH)								
High		27		23		22		17
Low		1		1		1		1
Record of Monuments & Places (RMP)								
High	1	26	1	24	1	26	1	25
Medium	18	103	19	88	20	98	23	109
Low	6	32	3	14	2	14	3	15
Record of Protected Structures (RPS)								
High	3	37	4	26	1	28	1	28
Medium		2		3		3		2
Low		2		3		4		2

Route Option A (Woodland to Kingscourt):

World Heritage Site

The Brú na Bóinne World Heritage Site is located in close proximity to this proposed route. For almost 5.5 km the proposed route traverses the landscape surrounding the site at a distance of less that 1000m from the World Heritage Site buffer, for over 1km it is closer that 250m and at one point crosses the buffer for a short distance. There is a very high potential that if the development were to proceed along this route that it would have a negative visual impact upon this internationally important archaeological landscape.

National Monuments

Within the Brú na Bóinne World Heritage Site are several national monuments. The nearest, Knowth (Figure 5-4 in this Report) is located on elevated ground approximately 1700m to the east of the proposed route. The proposed development may cause a potential negative visual impact upon this and other sites within the Brú na Bóinne site.

The Friary at Slane is a National Monument located on the Hill of Slane with a commanding view over the surrounding landscape (Figure 5-4 in this Report). Located approximately 1300m to the west of the proposed route there is a very high potential that if the development were to proceed along this route that it would have a negative visual impact upon this site.

The Slieve Breagh Earthworks are located approximately 1200m to the north of the proposed route. There is some confusion as to whether the National Monument data is correct in this area as it also lists a site in the townland of Mountfortescue which would appear to be located approximately 720m to the south west of Slieve Breagh between routes A,B & C. The National Monuments data does not contain any grid coordinates for the Mountfortescue site and the Meath County Development Plan has no descriptions for either the Slieve Breagh site or the Mountfortescue site. Also approximately 800m to the north east of the Mountfortescue site is the Slieve Breagh sensitive landscape noted in the Meath County Development Plan, a complex of several barrows and hut site. This area is very sensitive and located within close proximity to all the eastern route options. There is a very high potential that there would be a negative visual impact should any of the routes proceed.

Architectural Conservation Areas

The proposed route passes in close proximity to 3 ACA's associated with Slane, an architecturally and archaeologically significant town. The route passes within approximately 280m of the ACA for Slane Castle Demesne, 600m of Slane Mill ACA and 1000m of Slane Village ACA. There is a high potential that if the development were constructed along this route that it would have a negative visual impact upon this important architectural landscape.

National Inventory of Architectural Heritage

Apart from a few isolated structures there are only two areas of note where there are densities of sites, which are listed on the NIAH. The first is the town of Slane which has already been

mentioned the section relating to Architectural Conservation Areas and as has already been stated there is a high potential that if the development were constructed along this route that it would have a negative visual impact upon this important architectural landscape. The second is at Castletown where a farmhouse, parochial house, outbuilding, graveyard, mausoleum, two churches and a water pump are listed. All these structures are in excess of 250m from the proposed scheme with many greater than 1000m. However should this development proceed there is the potential for visual impact upon this architecturally sensitive region.

Record of Monuments & Places

In close proximity to the proposed route is an inland promontory fort where there would be a high potential for visual impact from this type of development. By far the highest potential for visual impact though, is upon the sensitive archaeological landscapes of Brú na Bóinne, Slieve Breagh and Slane and the several archaeological sites associated with these sites including those that have been raised to National Monument Status.

Record of protected structures

The RPS correlates to a large degree with that of the NIAH.

Route Option B1 (Woodland to Kingscourt):

World Heritage Site

The Brú na Bóinne World Heritage Site is located in close proximity to this proposed route. For almost 5.5 km the proposed route traverses the landscape surrounding the site at a distance of less that 1000m from the World Heritage Site buffer, for over 1km it is closer that 250m and at one point crosses the buffer for a short distance. There is a very high potential that if the development were to proceed along this route that it would have a negative visual impact upon this internationally important archaeological landscape.

National Monuments

Within the Brú na Bóinne World Heritage Site are several national monuments. The nearest, Knowth (Figure 5-4) is located on elevated ground approximately 1700m to the east of the proposed route. There is a very high potential that if the development were to proceed along this route that it would have a negative visual impact upon this and other sites within the Brú na Bóinne site.

The Friary at Slane is a National Monument located on the Hill of Slane with a commanding view over the surrounding landscape (Figure 5-4 in this Report). Located approximately 1300m to the west of the proposed route there is a very high potential that if the development were to proceed along this route that it would have a negative visual impact upon this site.

The Slieve Breagh Earthworks are located approximately 1200m to the north of the proposed route. There is some confusion as to whether the National Monument data is correct in this area as it also lists a site in the townland of Mountfortescue which would appear to be located

approximately 720m to the south west of Slieve Breagh between routes A,B & C. The National Monuments data does not contain any grid coordinates for the Mountfortescue site and the Meath County Development Plan has no descriptions for either the Slieve Breagh site or the Mountfortescue site. Also approximately 800m to the north east of the Mountfortescue site is the Slieve Breagh sensitive landscape noted in the Meath County Development Plan, a complex of several barrows and hut site. This area is very sensitive and located within close proximity to all the eastern route options. There is a very high potential that there would be a negative visual impact should any of the routes proceed.

Architectural Conservation Areas

The proposed route passes in close proximity to 3 ACA's associated with Slane, an architecturally and archaeologically significant town. The route passes within approximately 280m of the ACA for Slane Castle Demesne, 600m of Slane Mill ACA and 1000m of Slane Village ACA. There is a high potential that if the development were constructed along this route that it would have a negative visual impact upon this important architectural landscape.

National Inventory of Architectural Heritage

Apart from a few isolated structures there are only two areas of note where there are densities of sites which are listed on the NIAH. The first is the town of Slane which has already been mentioned the section relating to Architectural Conservation Areas and as has already been stated there is a high potential that if the development were constructed along this route that it would have a negative visual impact upon this important architectural landscape. The second consists of a number of sites dispersed over an area covering the townlands of Glebe, Siddan, Benjerstown and Caddelstown. Sites include 3 bridges, 2 churches, 2 houses, a mill, a milestone and an outbuilding. The surrounding landscape is rolling hills and it is unlike that this type of development in the area will have a high level of impact as most of the sites are scattered throughout the area and are close to or in excess of 1000m from the proposed development.

Record of Monuments & Places

In close proximity to the proposed route is an inland promontory fort where there would be a high potential for visual impact from this type of development. By far the highest potential for visual impact though, is upon the sensitive archaeological landscapes of Brú na Bóinne, Slieve Breagh and Slane and the several archaeological sites associated with these sites including those that have been raised to National Monument Status.

Record of protected structures

The RPS correlates to a large degree with that of the NIAH.

Route Option B2 (Woodland to Kingscourt):

World Heritage Site

The Brú na Bóinne World Heritage Site is located in close proximity to this proposed route. For almost 5.5 km the proposed route traverses the landscape surrounding the site at a distance of less that 1000m from the World Heritage Site buffer, for over 1km it is closer that 250m and at

one point crosses the buffer for a short distance. There is a very high potential that if the development were to proceed along this route that it would have a negative visual impact upon this internationally important archaeological landscape.

National Monuments

To the west of the proposed route are two National Monuments in the townlands of Athcarne and Gaulstown (Figure 5-5 in this Report). The monuments in Athcarne, a 4 storey 16th Century tower house is located approximately 500m from the proposed route in a relatively flat surrounding landscape. The mound / barrow at Gaulstown is located in a similar landscape approximately 900m from the proposed route. There is a high potential that if the development were to proceed along this route that it would have a negative visual impact upon these sites.

Within the Brú na Bóinne World Heritage Site are several national monuments. The nearest, Knowth (Figure 5-4) is located on elevated ground approximately 1700m to the east of the proposed route. There is a very high potential that if the development were to proceed along this route that it would have a negative visual impact upon this and other sites within the Brú na Bóinne site.

The Friary at Slane is a National Monument located on the Hill of Slane with a commanding view over the surrounding landscape (Figure 5-4). As it is located approximately 1300m to the west of the proposed route, there is a very high potential that if the development were to proceed along this route that it would have a negative visual impact upon this site.

The Slieve Breagh Earthworks are located approximately 1200m to the north of the proposed route. There is some confusion as to whether the National Monument data is correct in this area as it also lists a site in the townland of Mountfortescue which would appear to be located approximately 720m to the south west of Slieve Breagh between routes A,B & C. The National Monuments data does not contain any grid coordinates for the Mountfortescue site and the Meath County Development Plan has no descriptions for either the Slieve Breagh site or the Mountfortescue site. Also approximately 800m to the north east of the Mountfortescue site is the Slieve Breagh sensitive landscape noted in the Meath County Development Plan, a complex of several barrows and hut site. This area is very sensitive and located within close proximity to all the eastern route options. There is a very high potential that there would be a negative visual impact should any of the routes proceed.

Architectural Conservation Areas

The proposed route passes in close proximity to 3 ACA's associated with Slane, an architecturally and archaeologically significant town. The route passes within approximately 280m of the ACA for Slane Castle Demesne, 600m of Slane Mill ACA and 1000m of Slane Village ACA. There is a high potential that if the development were constructed along this route that it would have a negative visual impact upon this important architectural landscape.

National Inventory of Architectural Heritage

Apart from a few isolated structures there are only two areas of note where there are densities of sites which are listed on the NIAH. The first is the town of Slane which has already been mentioned the section relating to Architectural Conservation Areas and as has already been stated there is a high potential that if the development were constructed along this route that it would have a negative visual impact upon this important architectural landscape. The second consists of a number of sites dispersed over and area covering the townlands of Glebe, Siddan, Benjerstwon and Caddelstown. Sites include 3 bridges, 2 churches, 2 houses, a mill, a milestone and an outbuilding. The surrounding landscape is rolling hills and it is unlike that this type of development in the area will have a high level of impact as most of the sites are scattered throughout the area and are close to or in excess of 1000m from the proposed development.

Record of Monuments & Places

In close proximity to the proposed route is a church where there would be a high potential for visual impact from this type of development. By far the highest potential for visual impact though, is upon the sensitive archaeological landscapes of Brú na Bóinne, Slieve Breagh and Slane and the several archaeological sites associated with these sites including those that have been raised to National Monument Status.

Record of protected structures

The RPS correlates to a large degree with that of the NIAH.

Route Option C (Woodland to Kingscourt):

World Heritage Site

The Brú na Bóinne World Heritage Site is located in close proximity to this proposed route. For almost 5.5 km the proposed route traverses the landscape surrounding the site at a distance of less that 1000m from the World Heritage Site buffer, for over 1km it is closer that 250m and at one point crosses the buffer for a short distance. There is a very high potential that if the development were to proceed along this route that it would have a negative visual impact upon this internationally important archaeological landscape.

National Monuments

To the west of the proposed route are two National Monuments in the townlands of Athcarne and Gaulstown (Figure 5.3 in this Report). The monuments in Athcarne, a 4 storey 16th Century tower house is located approximately 500m from the proposed route in a relatively flat surrounding landscape. The mound / barrow at Gaulstown is located in a similar landscape approximately 900m from the proposed route. There is a high potential that if the development were to proceed along this route that it would have a negative visual impact upon these sites.

Within the Brú na Bóinne World Heritage Site are several national monuments. The nearest, Knowth (Figure 5-4 in this Report) is located on elevated ground approximately 1700m to the east of the proposed route. There is a very high potential that if the development were to proceed

along this route that it would have a negative visual impact upon this and other sites within the Brú na Bóinne site.

The Friary at Slane is a National Monument located on the Hill of Slane with a commanding view over the surrounding landscape (Figure 5-4 in this Report). Located approximately 1300m to the west of the proposed route, there is a very high potential that if the development were to proceed along this route that it would have a negative visual impact upon this site.

The Slieve Breagh Earthworks are located approximately 1200m to the north of the proposed route. There is some confusion as to whether the National Monument data is correct in this area as it also lists a site in the townland of Mountfortescue which would appear to be located approximately 720m to the south west of Slieve Breagh between routes A,B & C. The National Monuments data does not contain any grid coordinates for the Mountfortescue site and the Meath County Development Plan has no descriptions for either the Slieve Breagh site or the Mountfortescue site. Also approximately 800m to the north east of the Mountfortescue site is the Slieve Breagh sensitive landscape noted in the Meath County Development Plan, a complex of several barrows and hut site. This area is very sensitive and located within close proximity to all the eastern route options. There is a very high potential that there would be a negative visual impact should any of the routes proceed.

Located approximately 920m to the west of the proposed route is RMP ME006-027 which is also listed as a National Monument. Located on raised ground with a lake separating it from the proposed route there is a potential for visual impact to or from this site should the development proceed.

Architectural Conservation Areas

The proposed route passes in close proximity to 3 ACA's associated with Slane, an architecturally and archaeological significant town. The route passes within approximately 280m of the ACA for Slane Castle Demesne, 600m of Slane Mill ACA and 1000m of Slane Village ACA. There is a high potential that if the development were constructed along this route that it would have a negative visual impact upon this important architectural landscape.

National Inventory of Architectural Heritage

Apart from a few isolated structures there are only two areas of note where there are densities of sites, which are listed on the NIAH. The first is the town of Slane which has already been mentioned the section relating to Architectural Conservation Areas and as has already been stated there is a high potential that if the development were constructed along this route that it would have a negative visual impact upon this important architectural landscape. The second consists of a number of sites dispersed over an area covering the townlands of Glebe, Siddan, Benjerstwon and Caddelstown. Sites include 3 bridges, 2 churches, 2 houses, a mill, a milestone and an outbuilding. The surrounding landscape is rolling hills and it is unlike that this type of development in the area will have a high level of impact as most of the sites are scattered throughout the area and are close to or in excess of 1000m from the proposed development.

Record of Monuments & Places

In close proximity to the proposed route is a church where there would be a high potential for visual impact from this type of development. By far the highest potential for visual impact though, is upon the sensitive archaeological landscapes of Brú na Bóinne, Slieve Breagh and Slane and the several archaeological sites associated with these sites including those that have been raised to National Monument Status.

Record of protected structures

The RPS correlates to a large degree with that of the NIAH.

5.5 EVALUATION OF ROUTE CORRIDOR AND CONCLUSIONS

Woodland to Kingscourt, Western Route Options (1, 2, 3a and 3b)

The study area for the western route options covers a wide area and through careful route selection it has been possible to keep a significant distance between the most sensitive archaeological landscapes of Tara and Loughcrew and the proposed transmission line development. However there is a wealth of cultural heritage sites within the landscape and although it has been possible to avoid physically impacting upon any known sites, there is the potential that sites will be visually impacted upon.

Route 1 passes in proximity to one National Monument, Castlekeeran, an area with densely situated archaeological and architectural sites. There are 16 archaeological or architectural sites thought to have a high potential visual impact within close proximity (<250m) to the proposed route. There are four dense clusters of architectural features in the vicinity of the proposed route.

Route 2 passes approximately 1km to the west of the National Monument Bective Abbey and passes in close proximity (~390m) to the National Monument at Castlekeeran. There are 6 archaeological or architectural sites thought to have a high potential visual impact within close proximity (<250m) to the proposed route. There are six dense clusters of architectural features in the vicinity of the proposed route.

Route 3a passes approximately 1km to the west of the National Monument Bective Abbey and passes approximately 620m to the west of the National Monument at Robertstown, a 3 storey castle. There are 3 archaeological sites thought to have a high potential visual impact within close proximity (<250m) to the proposed route. There are six dense clusters of architectural features in the vicinity of the proposed route.

Route 3b passes approximately 1km to the west of the National Monument Bective Abbey and passes to the west of the National Monument at Rahood although there is a discrepancy in the National Monuments data and it needs to be confirmed if this is a National Monument. There are no archaeological or architectural sites thought to have a high potential visual impact within close

proximity (<250m) to the proposed route. There are five dense clusters of architectural features in the vicinity of the proposed route.

Woodland to Kingscourt, Eastern Route Options (A, B1, B2 and C)
There are several sensitive areas which would be impacted upon by any of the proposed eastern route options.

The most prominent is the Brú na Bóinne World Heritage Site. In 2004 UNESCO-ICOMOS delegated a reactive monitoring mission with regard to a proposed incinerator which was to be built 1.5km to the south of the World Heritage Site buffer zone as outlined in the Brú na Bóinne Management Plan 2002. The proposed routes are all significantly closer than the planned incinerator and would not only impact visually upon the landscape surround but also potentially affect its status as an Annex 1 World Heritage Site.

Further to the north is the important historic town of Slane with its associated Architectural conservation areas and archaeological monuments, including the Friary which has been given National Monuments status. The town is located on the bank of the Boyne River with the Hill of Slane to the north commanding impressive view of the surrounding landscape. It is very likely that this development would have an negative visual impact upon these sensitive sites.

Further to the north again is the sensitive landscape of Slieve Breagh its associated National Monument and the adjacent National Monument at Mountfortescue. The proposed routes cross this particularly dense area of archaeology and would have negative visual impact upon this sensitive archaeological landscape.

5.6 RECOMMENDATIONS

It cannot be stressed strongly enough the significance of the sites through which the proposed eastern route options would pass. The Brú na Bóinne World Heritage Site in particular is of pre-eminent importance, should the development proceed along any of the proposed eastern route options it would have a very high negative impact upon this extremely sensitive, internationally renowned, archaeological landscape and potentially affect its status as an Annex 1 World Heritage Site.

It is not considered that any of the eastern route options are appropriate for this type of development. Having reviewed the western route options it is recommended that from an archaeological perspective the preferred route options are route 1 or route 3b.

6 CONCLUSION

6.1 INTRODUCTION

The following chapter combines the results of the Constraints Mapping and the detailed studies and explains how each route option was compared and contrasted. This chapter details the methodology for classification of each route option and subsequently explains why the Woodland to Kingscourt, Western Route Options (1, 2, 3a and 3b) are preferable to the other Eastern Route Options.

All of the data that had been gathered during the course of the Route Comparison Report has been analysed and compared using GIS as a tool to assign a classification to each part of the route options. The classifications for each section of the route options have been determined by examining the level of sensitivity of the area that it passes through.

This Chapter should be read in conjunction with Figure 6.1 and 6.2 in Volume II.

6.2 METHODOLOGY

The methodology used in determining the emerging Preferred Route included:

- **Step 1**: Developing a matrix for each of the constraints, which may impact or exclude a route option. Table 6.1 below details the constraints that were taken into account, as detailed throughout the report;

- **Step 2**: The subsequent step included colour coding the various route options using GIS i.e. very “high sensitivity” was coloured red, while “low sensitivity” was coloured green;

- **Step 3**: Analysing the classifications by tabulating the information obtained from the GIS System and using this to graph the results and compare each of the route options.

Each route option was classified, and in cases where the route passed through more than one type of classified area the highest classification was used in colour coding the route option. For example if a section of the route passed through both a “medium” sensitivity landscape area and a “high” sensitivity heritage site, then the “high” classification was used to colour code that section of the route.

Table 6-1 Matrix Developed for Classification of Route Options

Classification	Buildings	Heritage Sites	Landscape	Conservation	Subsoil	Surface Water
Very High Sensitivity	<60m from GeoDirectory point*	<250m from Very High feature centre point	In Very High Sensitivity Area	In a Designated Area	N/A	N/A
High Sensitivity	N/A	<150m from High feature centre point	In High Sensitivity Area	N/A	N/A	Water Crossing
Medium Sensitivity	N/A	<100m from Medium feature centre point	In Medium Sensitivity Area	N/A	Significant subsoil where a pylon is required	N/A
Medium to Low Sensitivity	N/A	<50m from Low feature centre point	In Low Sensitivity Area	N/A	N/A	N/A
Low Sensitivity	N/A	No Heritage Sites	Not in a Sensitive Area	Not in a Designated Area	No Significant Subsoil	No Water

Note:

In all cases the distances are taken from the outer extremity of the pylon, which is 10m from the centre of the route line.

*It is assumed that if a GeoDirectory point is less than 60m from the outer extremity of the transmission line then the outer wall of the building will be less than 50m away.

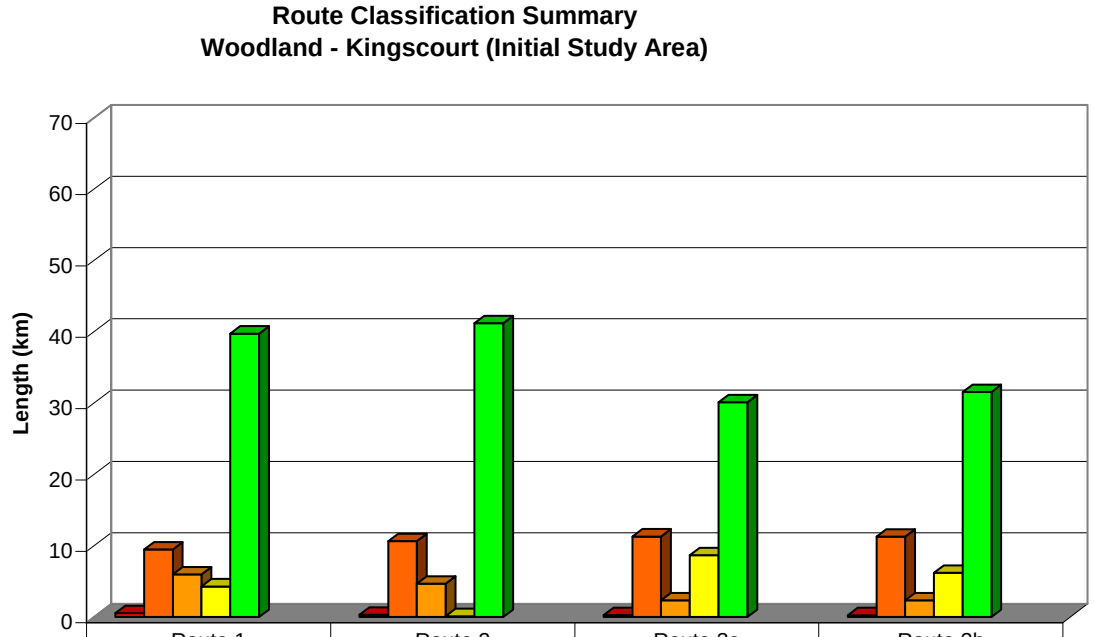
6.3 EVALUATION

Using the GIS data, the graphs in Figure 6.1 and 6.2 were produced and were used to analyse the route options. On comparing the data, it is apparent that the route options vary in length, with the shortest route option being Woodland to Kingscourt, Western Route Option 3b at approximately 54.38km. In addition the length of each route that is classified as "Very High Sensitivity" varies from 8.5km in Woodland to Kingscourt, Western Route Option C compared to 0.25km of line in Woodland to Kingscourt, Western Route Option 3b.

For amenity reasons, subject to other named constraints, every effort was made to design route options that minimised impact on Community. The high populated area in the east of the study area including the town of Drogheda excluded many possible route options. Only a few residential buildings are encountered by the route options, but upon closer inspection of these points it is apparent that all of these could be avoided by changing the route line slightly to move it further from buildings i.e. the transmission line could be located at least 50m from occupied dwellings.

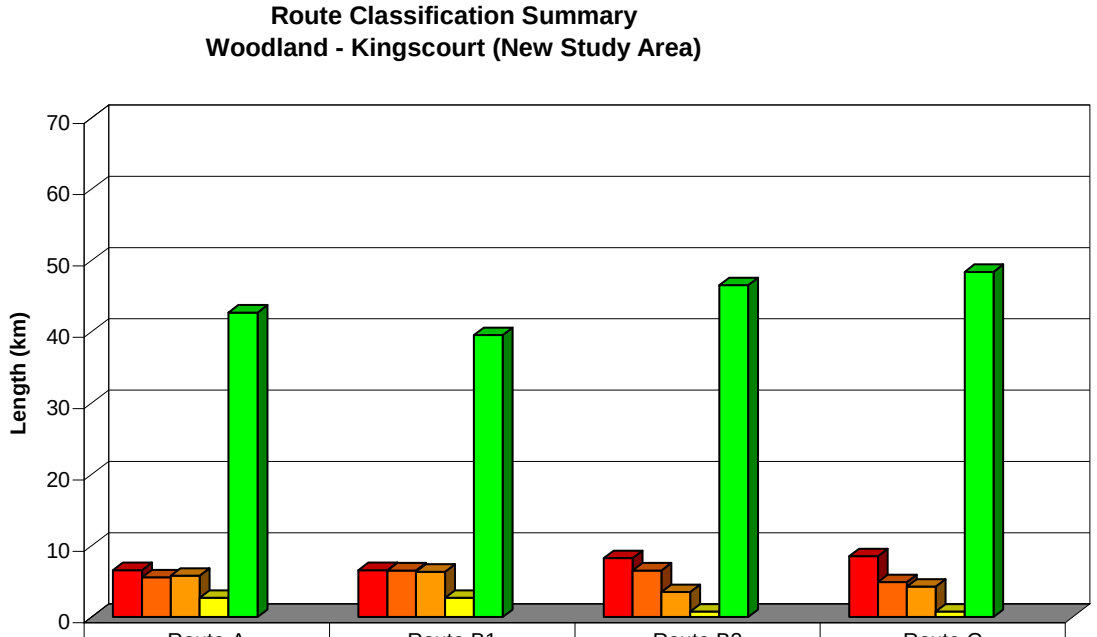
Having overcome the constraint of Community in all route options, the next main factors affecting the classifications of the transmission lines is the presence of landscape visual impact and archaeological and architectural heritage areas. The Brú na Bóinne Complex an Annex 1 World Heritage Site west of Drogheda excluded many possible route options in the early stage of the desktop study. The landscape visual impacts are a combination of scenic views, scenic route corridors and vulnerable landscapes. The landscape and the archaeological and architectural heritage account for the majority of "High Sensitivity" sections as well as a significant amount of "Very High Sensitivity" classifications on all of the route options (Refer to Volume II, Figure 5.1).

Figures 6.1 and 6.2 overleaf depict the classifications assigned to each of the route options. It quantifies the length of transmission line that falls into each of the classification categories, ranging from "Very High Sensitivity "to "Low Sensitivity"



	Route 1	Route 2	Route 3a	Route 3b
Very High	0.55	0.3	0.28	0.25
High	9.46	10.63	11.3	11.27
Medium	5.98	4.67	2.34	2.34
Medium-Low	4.31	0.11	8.68	6.2
Low	39.75	41.2	30.13	31.55
Low - Existing powerline	2.97	2.78	2.78	2.78
Total	63.02	59.69	55.51	54.38

Figure 6-1 Woodland to Kingscourt (Western Route Options) Route Classification Summary



	Route A	Route B1	Route B2	Route C
Very High	6.58	6.58	8.25	8.54
High	5.57	6.54	6.54	4.88
Medium	5.79	6.36	3.51	4.29
Medium-Low	2.7	2.7	0.76	0.76
Low	42.7	39.56	46.55	48.41
Total	63.33	61.73	65.61	66.89

Figure 6-2 Woodland to Kingscourt – Eastern Route Option (New Study Area) Route Classification Summary

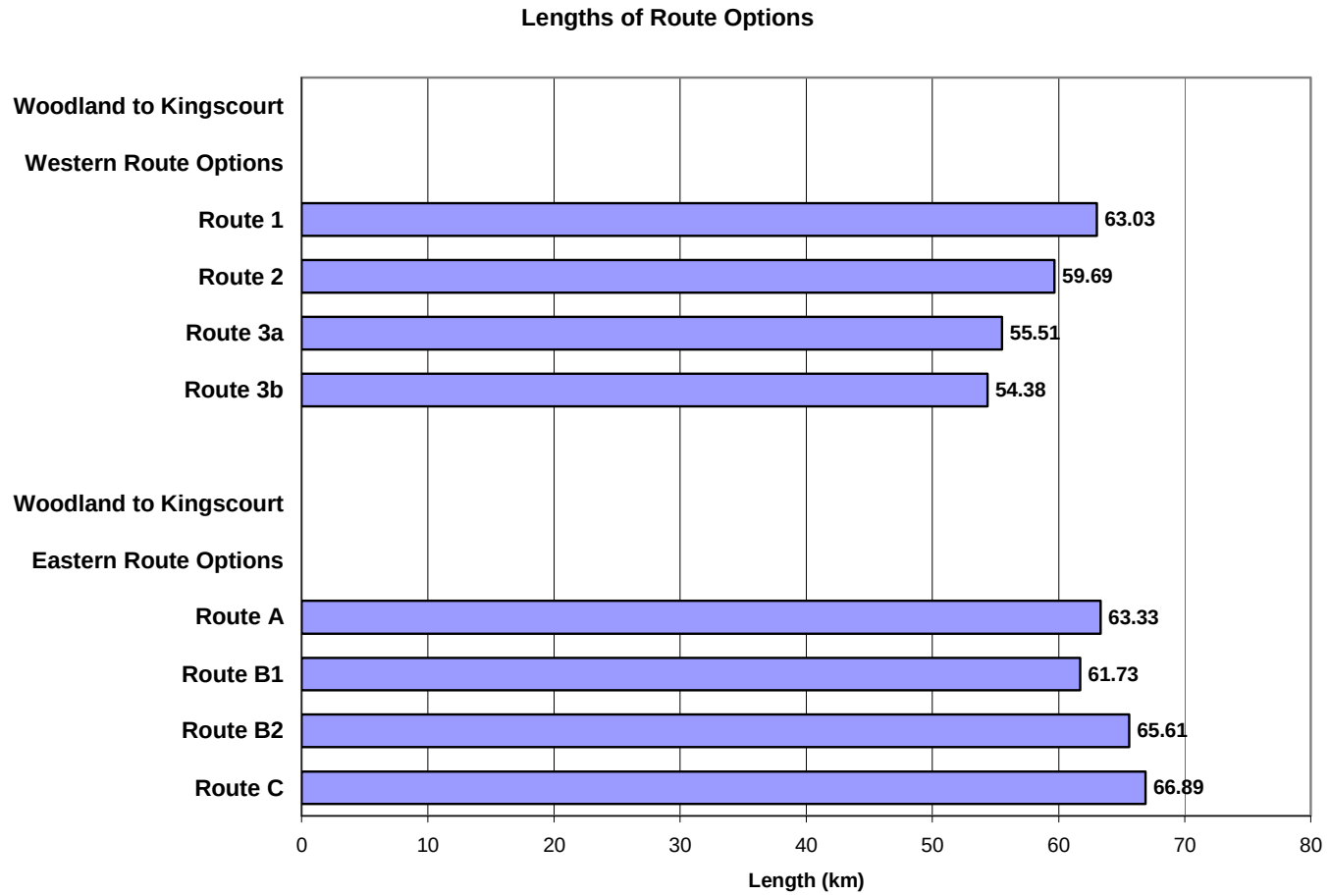


Figure 6-3 Length of Route Options

6.4 ANALYSIS OF EACH OF THE ABOVE OPTIONS

1. Woodland to Kingscourt, Western Route Options (Existing Routes)

On analysis of Figure 6.1, it is apparent that all of the route options evaluated could be viable as they have similar characteristics when classified considering the relevant constraints as buildings, heritage, landscape, conservation areas, subsoils and surface water. The average length of the four route options is 57.22km. (Refer to Figure 6.3) In balance however, Route Option 3a and Route Option 3b both appear to be the preferred route options, as they have very similar merits. The Route Options 3a and 3b have the shortest lengths of "Very High Sensitivity" classifications, less "High Sensitivity" than Route Option 2, and only slightly more "High Sensitivity" than Route Option 1. They also have significantly less "Medium Sensitivity" compared to the other route options, and they have the lowest overall impact when all of the factors are taken into account. In addition, these route options are about 53.5km long, which is significantly shorter than the other route options. Route Option 1 is 63.02km long and Route Option 2 is 59.69km in length. This would mean that the impacts associated with the transmission lines would be spread over a shorter distance in Route Options 3a and 3b.

2. Woodland to Kingscourt, Eastern Route Options

On analysis of Figure 6.2, it is apparent that these route options are not as viable as the Woodland to Kingscourt, Western Route Option as all of the route options (A, B1, B2 and C) have a long length of line, which is "Very High Sensitivity" classifications, rating from 6.58km (Route A and B1) to 8.54km (Route C). This "Very High Sensitivity" is due mainly to the fact that these routes converge on the River Boyne near Slane. Route Options A, B1, B2 and C more importantly potentially affect the visual amenity of the Brú na Bóinne Complex an Annex 1 World Heritage Site. The average length of the four route options is 64.39km, which is longer than the westerly Kingscourt to Woodland route options.

Note the routing of a transmission line east of Navan as requested by the Board was difficult for a number of reasons including:

- High population density to the east of the study area (towards the Irish Sea) including the town of Drogheda excluded many possible route options;
- There is widespread ribbon development in the vicinity of towns including Mornington, Bettytown, Dornacarney, Bryanstown, Baltray, Painetown, Julianstown;
- Routing of a transmission line to the east of the study area would potentially affect the visual amenity of the Brú na Bóinne Complex an Annex 1 World Heritage Site;
- There are a number of extensive beach recreation/holiday areas such as Mosney, Laytown and Bettystown;
- There area a number of SPA/NHA area which had to be avoided including the River Nanny Estuary and Shore SPA 004158, Boyne Coast & Estuary SAC/ NHA 01957,

Laytown Dunes/Nanny Estuary pNHA, King Williams Glen pNHA and Dowth Wetland pNHA. (Refer to Figure 3.3 “Designated Conservation Areas” in Volume II)

6.5 CONCLUSION

From the above analysis it is apparent that the Woodland to Kingscourt, Western Route Options (1, 2, 3a and 3b) provide the best options for the erection of a 400kV transmission line.

It is apparent that the possible Eastern Route Options are not as viable as the Woodland to Kingscourt, Western Route Option as all of the route options (A, B1, B2 and C) have a long length of line which is “Very High Sensitivity” classifications, rating from 6.58km (Route A and B1) to 8.54km (Route C) which is mainly due to the fact that these routes converge on the River Boyne near Slane and more importantly potentially affect the visual amenity of the Brú na Bóinne Complex an Annex 1 World Heritage Site. The average length of the four route options is also longer than the westerly Kingscourt to Woodland route options.

The main reasons for the Western Route Options (I, 2, 3a and 3b) being considered more viable route options when compared to the Eastern Route Options (A, B1, B2 and C) is that:

- the length of transmission line which is considered “Very High Sensitivity” classification is higher for the Eastern Route option than for the Western Route Options;
- the impact on the visual amenity of the Brú na Bóinne Complex an Annex 1 World Heritage Site is high for the Eastern Route option and is not impacted upon in the Western Route Options; and
- the length of proposed transmission line is longer for all of the Eastern Route Options than the Western Route Options.