MOTT MACDONALD

EIRGRID

Step 4B Development Options and Evaluation Report

North Connacht 110 kV Project

March 2021

Mott MacDonald
5 Eastgate Avenue
Eastgate
Little Island
Co Cork T45 EE72
Ireland

T +353 (0)21 480 9800
mottmac.com

EirGrid plc,
The Oval,
160 Shelbourne Road,
Ballsbridge,
Dublin,
D04 E7K5.

Step 4B Development Options and Evaluation Report

North Connacht 110 kV Project

March 2021

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	1 Feb 2021	Caroline Lew Paul Foley	Donna Hassett	Tom Keane	Draft for Comment
B	23 Feb 2021	Caroline Lew	Donna Hassett	Tom Keane	Draft for Comment
C	05 March 2021	Caroline Lew / Paul Foley	Donna Hassett	Tom Keane	Final Draft
D	15 March 2021	Paul Foley	Caroline Lew	Tom Keane	Final Issue

Document reference: 229100591 | 402 | D

Information class: Standard

Contents

Tables

Figures

Glossary

BPO - Best Performing Option

CENELCE - Committee for Electrotechnical Standardisation

CFRAM - Catchment Flood Risk Assessment and Management

EBPO - Emerging Best Performing Option

ED - Electoral District

EPA - Environmental Protection Agency

GIS - Geographic Information System

GSI - Geological Survey of Ireland

HDD - Horizontal Directional Drilling

HVAC - High Voltage Alternating Current

IFI – Inland Fisheries Ireland

INSPIRE - Infrastructure for Spatial Information in the European Community

kV - kilo Volt (1 kV = 1,000V)

MCC – Mayo County Council

MTTR – Mean Time to Repair

MV - Medium Voltage

MW - Mega Watt (1MW = 1,000,000W)

NDBC – National Biodiversity Data Centre

NHA - Natural Heritage Area

NIAH - National Inventory of Architectural Heritage

NPWS - National Parks and Wildlife Service

OHL - Overhead Line

OSI – Ordnance Survey Ireland

pNHA - proposed Natural Heritage Area

QI – Qualifying Interests

RCC – Roscommon County Council

RPS - Records of Protected Structures

SAC - Special Areas of Conservation

SAOI - Social Area of Influence

SCC – Sligo County Council

SMR – Sites and Monuments Record

SPA - Special Protected Area

TII - Transport Infrastructure Ireland

TMP - Traffic Management Plan

UGC – Undergound Cable

WFD - Water Framework Directive

Executive summary

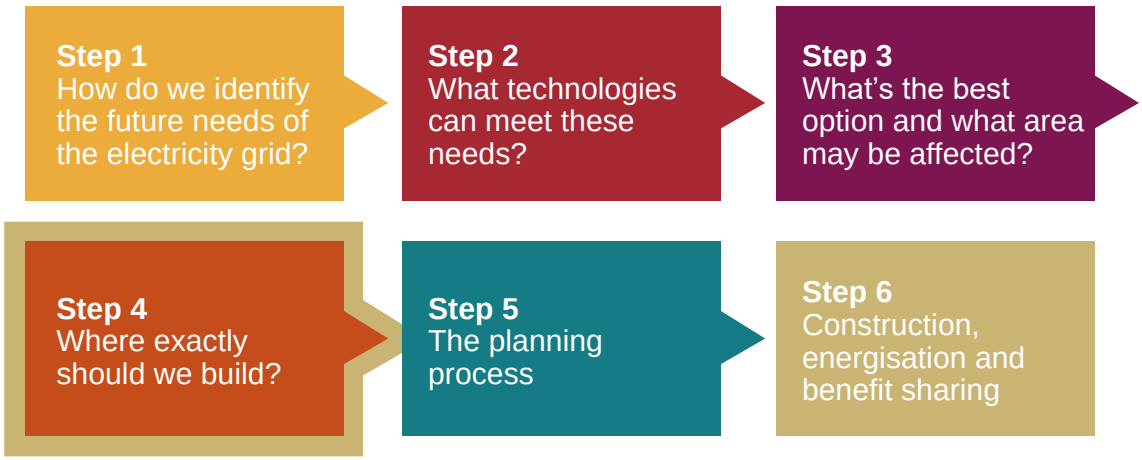
EirGrid plc are developing the North Connacht 110 kV Project which is required to facilitate the connection of renewable energy being generated in the North Connacht region onto the national electricity grid.

The Project comprises:

- A proposed new transmission circuit, comprising either overhead line (OHL) or underground cable (UGC) between two existing substations (Moy substation in County Mayo and Tonroe substation in County Roscommon), and
- An upgrade of approximately 32 kilometres of the existing overhead line between Tonroe and Flagford substations in County Roscommon.

The existing OHL line between substations at Tonroe and Flagford (Carrick-on-Shannon) is already in place, and its alignment will not change as part of its planned upgrading. This element of the Project is therefore excluded from the Step 4B evaluation process detailed in this report; but will be fully assessed as part of any planning application, including associated environmental assessments.

The Project is being developed in accordance with EirGrid's Framework for Grid Development. The Project is currently in Step 4 of EirGrid's six-step Grid Development Framework.

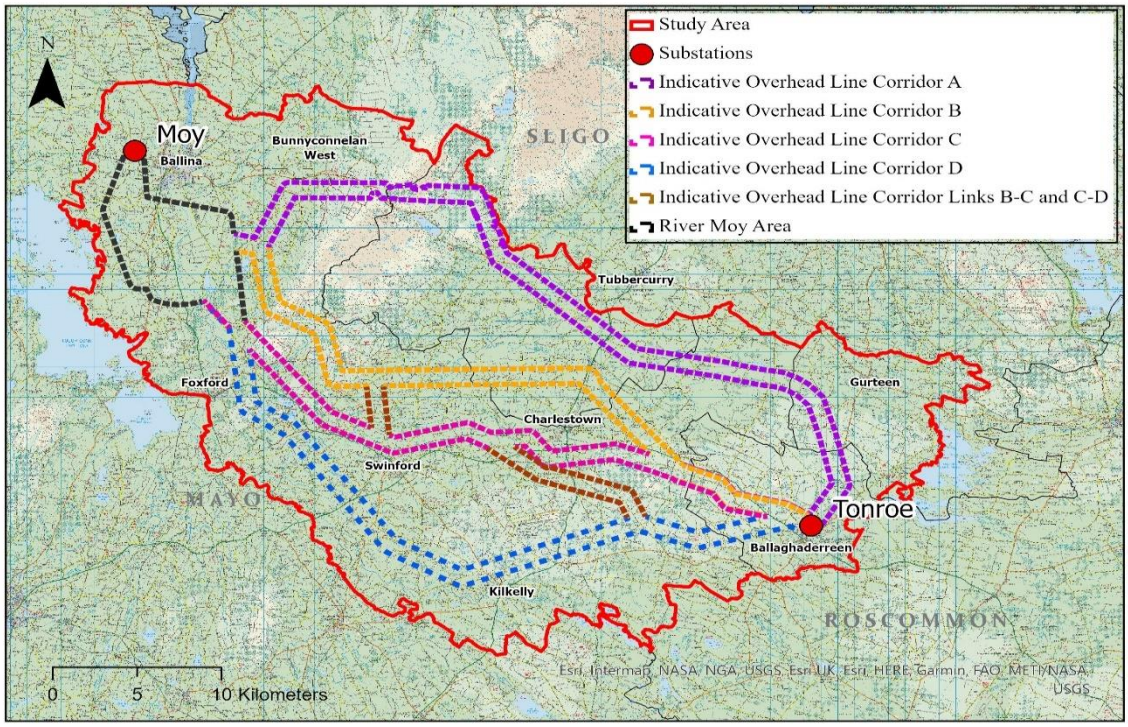


Source: EirGrid

The Step 4A Report described how the constraints mapped within the Project study area were used to develop Areas of Opportunity within which overhead line corridors could be developed. Similarly, these constraints were used to inform the development of broad corridor options for underground cable. Four OHL and three UGC corridor options were developed for further consideration.

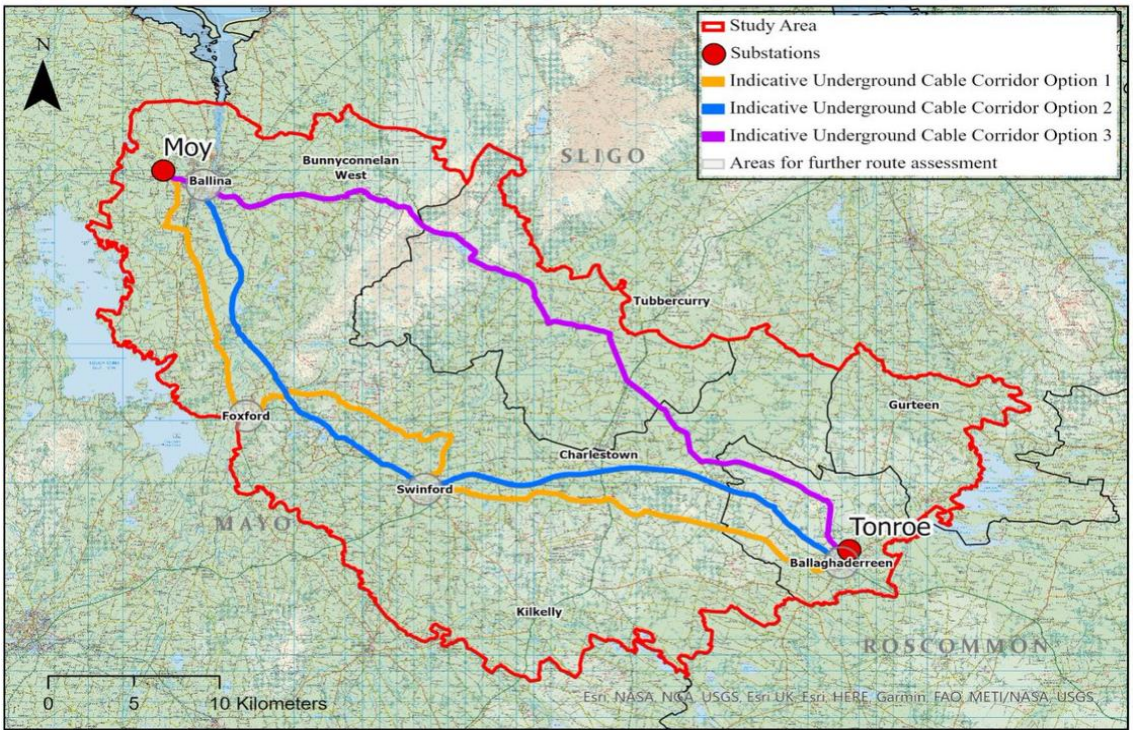
This Step 4B Report presents an evaluation of the seven corridor options in accordance with EirGrid's Framework for Grid Development. The corridor options are presented in Figure 0.1 and Figure 0.2 below. The aim of the Step 4B process is to identify the Emerging Best Performing Option (EBPO) corridor for the Project.

Figure 0.1: Indicative OHL Corridor Options



Source: Mott MacDonald / OSI (refer to Appendix A for to scale drawings)

Figure 0.2: Indicative UGC Corridor Options



Source: Mott MacDonald / OSI (refer to Appendix A for to scale drawings)

In line with EirGrid's Framework for Grid Development, the identified corridor options have been evaluated against the following criteria:

- Technical performance,
- Economic performance,
- Environmental performance,
- Social performance; and
- Deliverability.

Identification of the EBPO for both OHL and UGC technology has considered and balanced the five key criteria: technical, economic, environmental, social and deliverability.

Having reviewed and considered the outcomes of the assessment process from a multi-criteria perspective, the EBPO UGC corridor option 2 has been identified as the overall EBPO for the North Connacht 110 kV project.

The identification of UGC Corridor option 2 as the EBPO takes cognisance of the feedback received during the Step 4A public consultation. Of the respondents to the public consultation process, there was a strong preference for underground cable corridor options with 87% of respondents supporting this.

While the North Connacht 110 kV project is being developed to support renewable energy generation in the region primarily, it also serves to facilitate economic growth locally, in the form of new industry. As a result, EirGrid is aware of the need to expedite the delivery of this project and believe this can be best achieved if the project is delivered in the form of an underground cable.

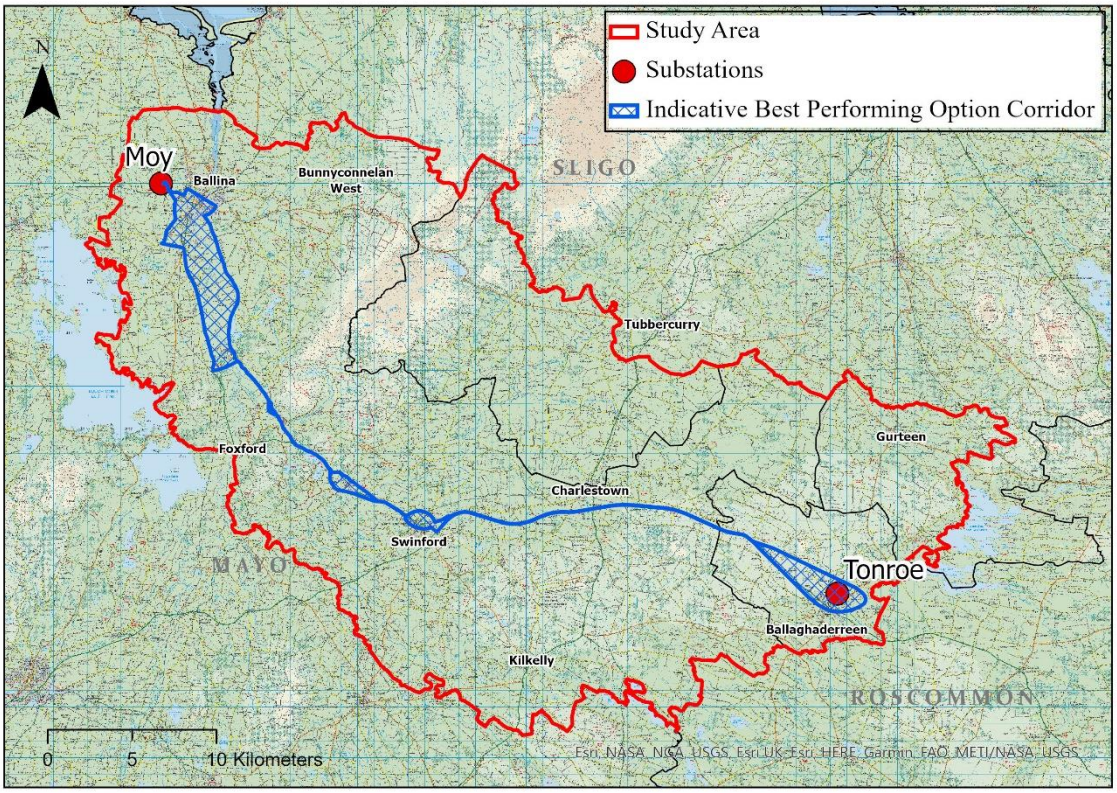
In the context of the above, it is noted that there have been significant delays in the consenting and delivery of transmission overhead lines in Ireland in recent years, in particular in relation to the social acceptance of new grid infrastructure. As a result there is substantial uncertainty on the timeline to consent and deliver the project in the form of a 110 kV overhead line.

Specifically in relation to the underground cable options, option 2 performed better than options 1 and 3 under the Environmental Performance criterion, primarily because option 2 follows the existing N5 between Swinford and Ballaghaderreen where the increased width and standard of the road is better suited to accommodating the cable, resulting in less necessity to go off road with associated environmental risks. Option 2 performed better than option 1 under the Economic Performance criterion, primarily due to option 2 being approximately 9km shorter. In addition, option 2 performed better than option 1 under the Deliverability Performance criterion due to greater design complexity and implementation timelines associated with option 1.

While UGC Corridor Option 2 has emerged as the preferred option, it remains challenging from a deliverability and social impact perspective as a result of its potential routing through various towns and in particular Ballina. In addition, option 2 proposes using substantial portions of the national road network, in particular sections of the N5 and N26. Discussions with key stakeholders such as Transport Infrastructure Ireland and local authorities are ongoing and will continue over the coming months before we are able to confirm a specific route for the project.

In Ballina there may be temporary disruption to residential amenity, material assets and other services and will require a complex crossing of the River Moy. Such complexities and challenges can be addressed and overcome by additional routing assessments south of the town over the coming months. This is reflected in the EBPO mapping in Figure 0.3 below.

Figure 0.3: Emerging Best Performing Corridor Option



Source: Mott MacDonald / OSI (refer to Appendix E for to scale drawings)

As part of Step 4C, engagement with landowners within the EBPO, local authorities and other stakeholders will be undertaken in order to develop a number of potential feasible routes within the EBPO and utilising portions of the UGC Corridor Option 1 when considering options at Ballina. These routes will explore potential locations for HDD[1] crossings of the River Moy at Ballina and its environs, inside and outside the built up area and near Swinford, and will include off-road and on-road route sections. Route options will be developed taking cognisance of minimising temporary construction phase disruption to local communities, particularly in Ballina, Ballaghadereen and Swinford.

Feedback from consultation and engagement over the coming months will be considered and analysed in the development and assessment of route options. Step 4 will conclude with a Step 4C report, confirming the Best Performing Technology and associated route for the North Connaught 110 kV project to be taken into Step 5 (Planning).

[1] Horizontal Directional Drilling

1 Introduction

1.1 The Project

Mott MacDonald Ireland has been appointed by EirGrid plc as lead consultant for the North Connacht 110 kV Project (hereafter referred to as *the Project*).

The Project comprises:

- A proposed new transmission circuit, comprising either overhead line (OHL) or underground cable (UGC) between two existing substations (Moy substation in County Mayo and Tonroe substation in County Roscommon),
- An upgrade of approximately 32 kilometres of the existing overhead line between Tonroe and Flagford substations in County Roscommon.

The existing OHL between substations at Tonroe and Flagford (Carrick-on-Shannon) is already in place, and its alignment will not change as part of its planned upgrading. This element of the Project is therefore excluded from the Step 4B evaluation process detailed in this report; but would be fully assessed as part of any planning application, including associated environmental assessments.

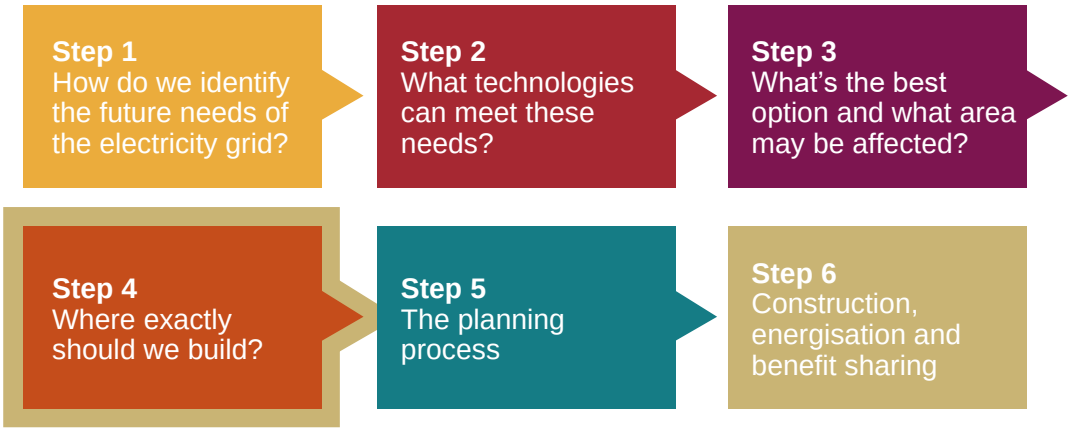
The Project is being developed in accordance with EirGrid's Framework for Grid Development. The Project is currently in Step 4 of EirGrid's six-step Grid Development Framework. Details of the Framework are provided in Chapter *2 Framework for Grid Development.*

The Project is required to facilitate the connection of renewable energy which is being generated in the North Connacht region onto the national electricity grid.

1.2 Purpose of this Report

The Project has been and continues to be developed in accordance with EirGrid's bespoke six-step Framework for Grid Development. This framework reflects EirGrid's values and approach to grid development. The Project is currently in Step 4 as presented in Figure 1.1. In accordance with EirGrid's Framework, a detailed analysis of feedback received has been central to the grid development process.

Figure 1.1: EirGrid's Six-Step Framework for Grid Development



Source: EirGrid

This Step 4B Report presents an evaluation of the corridor options which were identified in the Step 4A Report (Mott MacDonald, 2020) in accordance with EirGrid's Framework for Grid Development. The corridor options are presented in Figure 2.2 and Figure 2.3 (refer to Chapter 2 of this report). The aim of the Step 4B process is to identify the Emerging Best Performing Option (Emerging PBO) corridor for the Project.

As part of the Step 4B assessment process, additional technical and environmental studies have been undertaken along with ongoing engagement and these have informed the identification of the Emerging Best Performing Option.

1.3 Structure of this Report

This report firstly introduces the Project, and the purpose of the report in the context of EirGrid's six-step framework for grid development.

Chapter *2* outlines the background to the identification of the Step 4A 'Areas of Opportunity' and describes the development of the Overhead Line (OHL) corridor options and the Underground Cable (UGC) corridor options. It outlines the public consultation process undertaken in Step 4A, in the context of the six step *Framework for Grid Development* which EirGrid uses to maximise stakeholder engagement in the development of the Project, and provides feedback received from the public.

The methodology approach to Step 4B, the identification of the Emerging Best Performing Option is described in Chapter 3.

Chapter 4 introduces the criteria for the identification of the EBPO, and Chapter 5 provides the context for the identified criteria with respect to OHL and UGC technology.

Chapter 6 provides an assessment of each OHL corridor option against the criteria, and their sub-criteria as described in Chapter 4, concluding with an evaluation matrix for each OHL corridor option, and the identification of the EBPO with regard to OHL technology.

Chapter 7 provides an assessment of each UGC corridor option against the criteria, and their sub-criteria as described in Chapter 4, concluding with an evaluation matrix for each UGC corridor option, and the identification of the EBPO with regard to UGC technology.

The report concludes with the identification of the overall EBPO and outlines the *Next Steps* in the *Framework for Grid Development.*

Overview map books of the OHL and UGC options are provided in Appendix A *Mapping*.

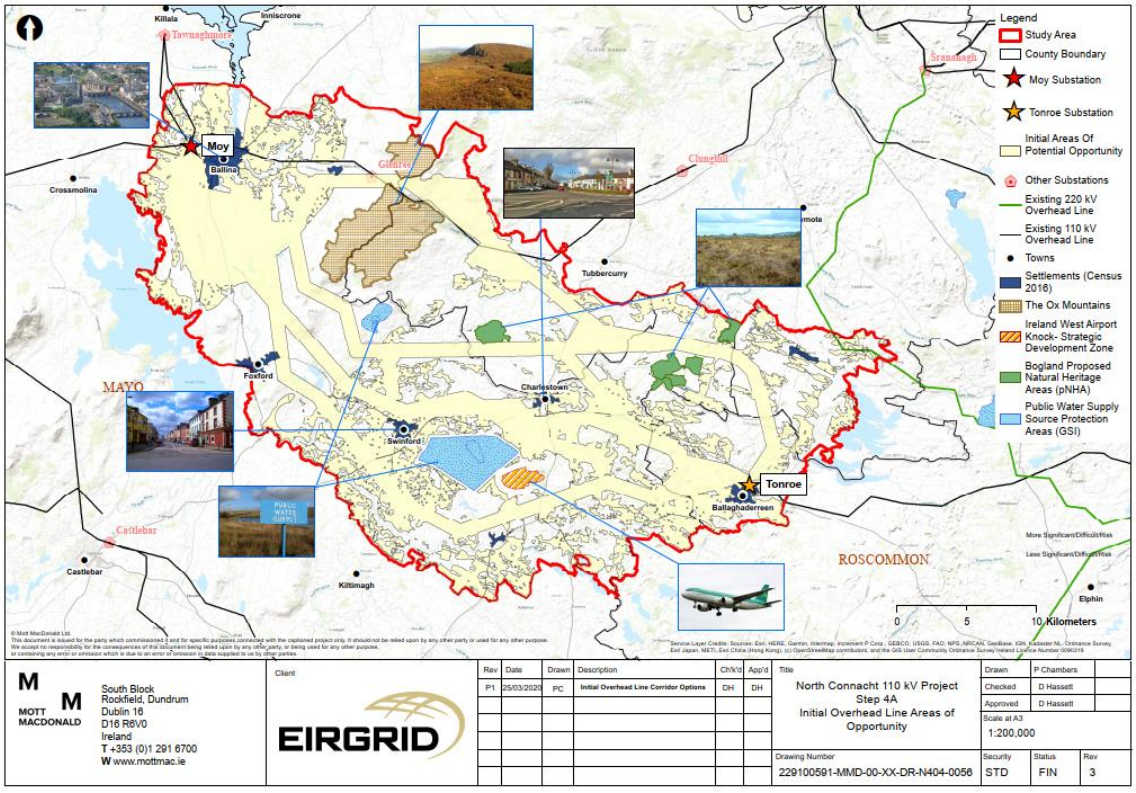
2 Step 4A Areas of Opportunity

2.1 Background to the identification of Step 4A Areas of Opportunity

The Step 4A Report (Mott MacDonald, 9 September 2020) described how the constraints mapped within the Project study area were used to develop Areas of Opportunity within which OHL corridors could be developed. Similarly, these constraints were used to inform the development of broad corridor options for UGC. Constraints mapping is presented in the Step 4A report, and is included in Appendix C of this report.

The Areas of Opportunity were formed by principally avoiding particular sensitivities and following areas where, based on the constraints identified, the risk/sensitivity/significance is low, relative to other areas. The initial Areas of Opportunity are shown in Figure 2.1 below.

Figure 2.1: Initial Areas of Potential Opportunity



Source: Mott MacDonald North Connacht 110 kV Project Step 4A Report.

2.1.1 Overhead Line Corridor Options

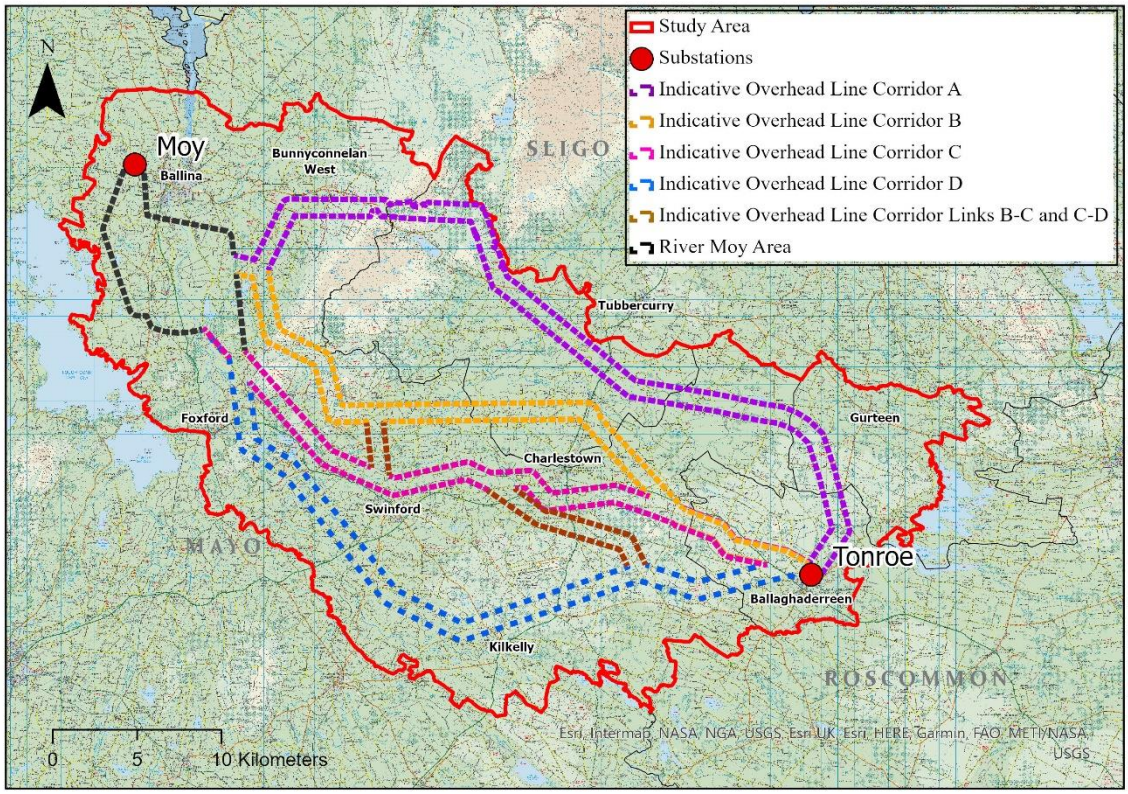
Following the identification of initial Areas of Opportunity, the constraints were further used to identify areas where an OHL would have the least impact. There are, however, areas of moderate to high risk that are unavoidable (for example: the River Moy Special Area of Conservation (SAC) is crossed by all options, as this SAC spans the width of the study area and cannot be avoided).

The corridor development process identified the following potential corridor options:

- Corridor A (purple on map).
- Corridor B (orange on map).
- Corridor C (pink on map).
- Corridor D (blue on map).
- River Moy Area (black on map).

The OHL corridor options are shown in Figure 2.2 below.

Figure 2.2: OHL Indicative Corridor Options



Source: Mott MacDonald / OSI (refer to Appendix A for to scale drawings)

2.1.2 Underground Cable Corridor Options

The initial corridor sections for UGC were identified through desktop analysis to determine feasible corridors along public roads between the two substations. This desktop assessment considered the roads available between the substations based on the shortest distance between the substations, as well as their type and width.

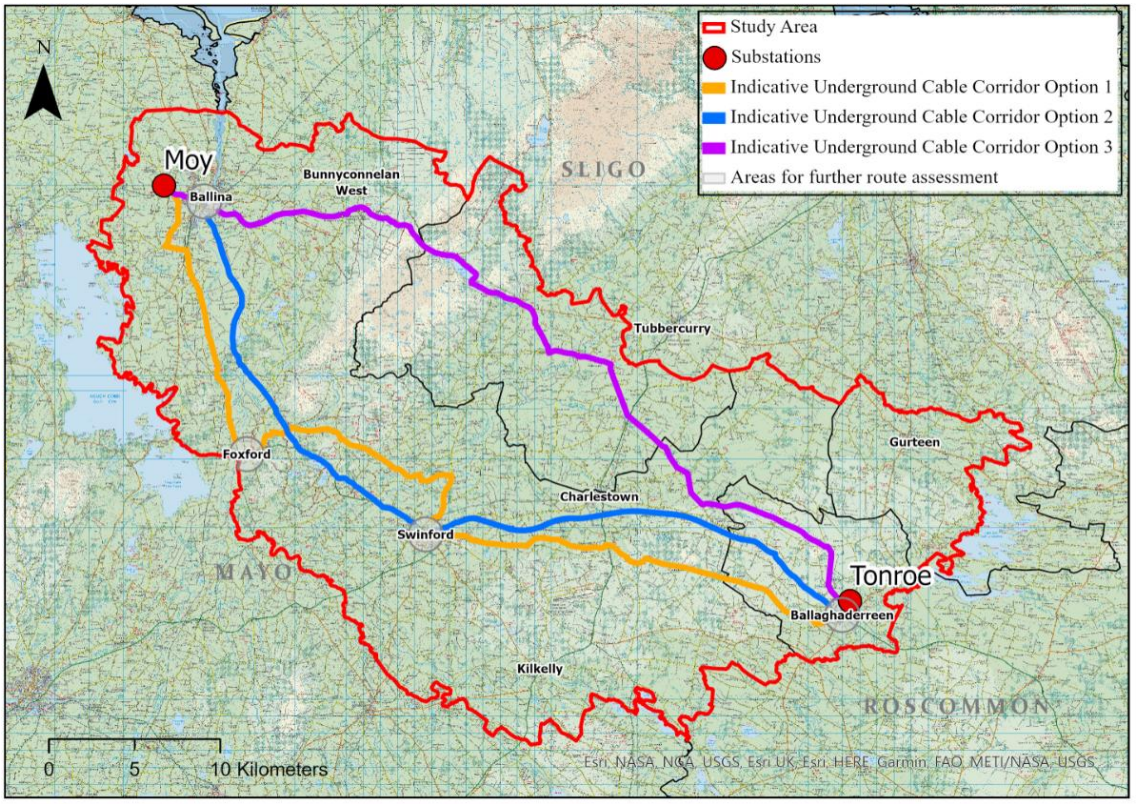
The corridor selection process identified the three potential UGC corridors as follows:

- UGC Corridor Option 1 (orange on map).
- UGC Corridor Option 2 (blue on map).
- UGC Corridor Option 3 (purple on map).

It should be noted that where the UGC cable corridor passes through an urban area the corridor is indicative only at this stage.

The UGC corridor options are shown in Figure 2.3 below.

Figure 2.3: Indicative UGC Corridor Options



Source: Mott MacDonald / OSI (refer to Appendix A for to scale drawings)

2.2 Step 4A Consultation

Public consultation for Step 4A was undertaken by EirGrid between 14 September 2020 and 11 December 2020. The initial date was set to end on 16 November 2020, however due to the Covid-19 pandemic the timeline was extended in order to provide the community with additional opportunities to comment and provide feedback.

The public consultation for the Project requested feedback on the four OHL corridor options and three UGC corridor options within the study area in Sligo, Mayo and Roscommon. A mix of traditional and innovative online methods were utilised in summer 2020 to invite the public to engage with the community and residents of the study area. These included virtual project exhibitions, ongoing telephone clinics, project updates by mailing list, 5 webinars and a distribution of 41,000 flyers on three occasions to registered addresses within the study area.

2.3 Step 4A Consultation Feedback

Traverse, an independent consultancy, was commissioned to conduct the analysis and report the findings[2]. A total of 654 consultation responses were received via online form, email and by post. This included three petitions with a total of 1,464 signatures.

Many respondents expressed general opposition to the Project, remarking that the public are not in favour of any proposed options. Concerns consisted of in-combination impacts of future windfarms, cost to tax payers and road authorities and general timescale. Concerns were also expressed in relation to increased noise during construction and operation, and potential negative impact on cultural heritage sites, wildlife and the visual landscape.

Some respondents expressed general support for the Project due to its potential for supporting wind farm development in the area. Respondents supported the project because they believe it could benefit environmentally friendly renewable energy generation and help Ireland meet its renewable energy sources for electricity targets. Respondents also expressed support for the Project as they believe it could aid job creation in Ireland's North West region.

Impact on local amenities, the tourism industry, traffic disruption and impact on farming industries were raised as concerns.

Many respondents' expressed concern in relation to the development of an OHL. Respondents fear that an OHL may impact the natural beauty of the area and spoil the scenic views along popular walking and cycling routes. Several respondents argued that any negative visual impact may have a knock-on adverse effect on tourism in the area. Many respondents also fear that the development of an OHL may have negative health impacts for local residents.

Respondents expressed support for the development of an UGC, largely because they feel that this option would best preserve the rural landscape and scenic views in the area. Respondents offered other environmental reasons for their support of an UGC such as the potential for a reduced impact on wildlife, historic sites and noise levels relative to an OHL.

[2] http://www.eirgridgroup.com/site-files/library/EirGrid/North-Connacht-Step-4-Consultation-Report.pdf

3 Approach to Step 4B

3.1 Methodology

The Step 4B assessment was primarily a desktop study supported by technical and environmental site visits which were undertaken between the 10 August 2020 and 14 August 2020. The assessment consisted of the following principle steps:

- Information Gathering
- Data and Mapping, and
- Evaluation of identified options.

These steps were undertaken to ensure that the most accurate and up to date constraints information for the project study area were compiled, prepared and reported. The tasks undertaken to complete each of the principle steps are detailed in the subsequent sections below.

In addition, the requirements from the following key documentation were considered during the preparation of the options assessment:

- EirGrid Framework for Grid Development
- EirGrid Draft Ecology Guidelines for Electricity Transmission Projects (EirGrid, 2020); and
- EirGrid Cultural Heritage Guidelines for Electricity Trasmission Projects (EirGrid, 2015).

3.2 Information Gathering

The desk-based study was undertaken based on a review of publicly available statutory and environmental sources as follows:

- Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media
- Department of Housing, Local Government, and Heritage
- Archaeological Survey of Ireland
- National Biodiversity Data Centre (NBDC)
- National Monuments Service database of Sites and Monuments Record (SMR) and the National Inventory of Architectural Heritage (NIAH)
- National Parks and Wildlife Service Mapping
- Transport Infrastructure Ireland
- Ordnance Survey of Ireland
- All Ireland Research Observatory
- Mayo County Council (Mayo County Development Plan 2014-20 and Draft Plan 2021-2017 including Record of Protected Structures & Landscape Appraisal of County Mayo)
- Roscommon County Council
- Sligo County Council
- Environmental Protection Agency (EPA) Envision mapping (https://gis.epa.ie/EPAMaps/AAGeoTool)
- Geological Survey Ireland (GSI) mapping datasets (www.gsi.ie)
- Inland Fisheries Ireland

- Birdwatch Ireland
- Utilities providers (Gas Networks Ireland, EirGrid/ESB)
- Aerial photography: current (www.googleearth.com, accessed on 12 January 2021)
- Office of Public Works Catchment Flood Risk Assessment and Management (CFRAMS) mapping (www.floodinfo.ie and www.floodmap.ie accessed on 10 January 2021).

In addition to the above, Geodirectory data was obtained for each of the corridor options under consideration.

All third-party reports, data and mapping are assumed to be correct for the purposes of this report.

The desk-based study included a high-level assessment of bridge information provided for National Roads. The information was limited and could only be used to assess the likelihood for installation of cable ducts within bridges. As built information of bridge infrastructure would be required to provide more certainty on the suitability of installation of cable ducts.

3.2.1 Site Walkovers and Surveys

This report has been informed by targeted site walkovers and windscreen surveys carried out during the week of the 10 August 2020. The team who conducted the site walkovers consisted of experienced engineers, an ecologist and an environmental scientist from Mott MacDonald.

The surveys were conducted mostly from viewpoints along public roads. The purpose of the surveys was to ground truth and confirm the findings of the desktop assessments, design assumptions and to gather further relevant information.

In addition, ornithological surveys of the study area have been carried out since 2019 by MKO Planning and Environmental Consultants to inform the development of this project. Surveying of the study area was initially undertaken as a scoping exercise to feed into a constraints study. These surveys were primarily distribution and abundance surveys. As the preferred corridors emerged more targeted surveys were undertaken along the corridors and their surroundings.

Along each of the preferred corridors vantage point surveys were undertaken to record the flight activity of birds of conservation concern (including raptors). The same survey effort was undertaken along each corridor to allow for comparisons in the levels of activity between corridors.

In addition, raptor winter roost surveys were undertaken from strategic locations overlooking suitable roosting habitat. Winter roost surveys were undertaken during the 2019/20 winter and early winter 2020, and are ongoing in late winter 2021. The key sites were an Ox Mountain site, two raised bogs within the River Moy SAC and Callow Bog SAC. The raptor winter roost surveys were informed by consultation with relevant consultees in possession of records, including the NPWS.

The technical and environmental field surveys considered the following:

- Watercourses
- Ecological sensitive areas
- Elevated terrain
- Utility, river, rail and road crossings
- The need for Horizontal Directional Drilling (HDD)
- Requirements to micro-route to ensure minimum duct bending radius of 6m

- Equine stables
- Dwellings and settlements.
- Farmland

3.3 Data and Mapping

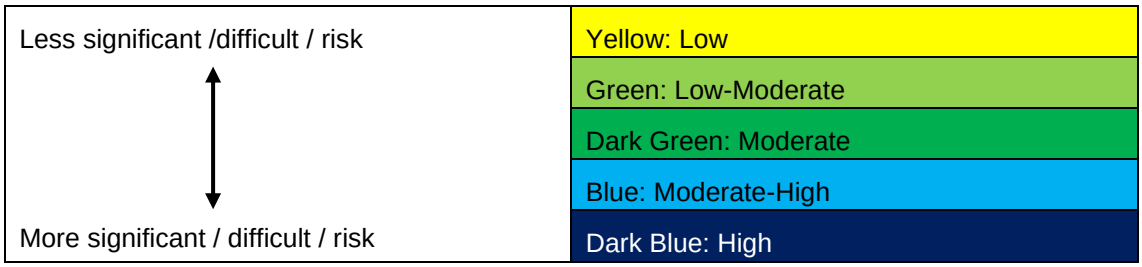
Geographic Information System (GIS) mapping was used to display the key datasets that inform this report. Constraints mapping was prepared using ArcGIS Pro version 2.6 GIS software. ArcGIS Web AppBuilder was used to create a custom online web mapping application to access, visualise and interrogate data within a common data environment.

All GIS maps and web applications were prepared by experienced GIS technical specialists who managed the data according to the most up to date Mott MacDonald GIS standards. These company standards are aligned with the framework and principles set out in the EU Infrastructure for Spatial Information in the European Community (INSPIRE) Directive.

3.4 Evaluation of Identified OHL and UGC Options

Each OHL and UGC corridor option was assessed against the criteria ranking as presented in Table 3.1 below.

Figure 3.1: Criteria Ranking



Source: EirGrid

A comparison matrix was used to identify the emerging BPO for the OHL options, and the emerging BPO for the UGC options.

4 Criteria for Identifying the Emerging Best Performing Option

4.1 Introduction

In line with EirGrid's Framework for Grid Development, the identified corridor options have been evaluated against the following criteria:

- Technical performance,
- Economic performance,
- Environmental performance,
- Social performance; and
- Deliverability.

The following sections describe the sub-criteria considered in this report.

4.2 Technical

- Compliance with safety standards: The Project should comply with relevant safety standards such as those from the European Committee for Electrotechnical Standardisation (CENELEC). Materials should comply with IEC or CENELEC standards.
- System Reliability: The average failure rates for the OHL or UGC can be calculated using, for example, estimated availability figures (unplanned outages/100km/year), Mean Time to Repair (MTTR) and the length of the line or cable.
- Expansion / Extendibility: This considers the ease with which the option can be expanded, i.e. it may be possible to uprate an OHL to a higher capacity or a new voltage in the future and the implications of UGC solutions should be considered in this regard.
- Repeatability: This criterion examines whether this option can be readily repeated in the EirGrid network. For example, an OHL HVAC option is very repeatable, but a partially underground HVAC option is less repeatable as there can only be a certain amount of underground HVAC cable in each area of the network.
- Technical Operational Risk: "Technical Operational Risk" aims to capture the risk of operating different technologies on the network.

4.3 Economic

- Project Implementation Costs: Costs associated with the procurement, installation and commissioning of the grid development and therefore includes the transmission equipment that forms part of each option.

4.4 Environmental Performance

- Biodiversity: This criterion examines the proximity to and potential connectivity with ecologically protected species, habitats and sites, in particular European sites, protected waters, and nationally designated ecological sites. Known sensitive and protected habitats and species within the receiving environment are considered in the context of construction phase activities and access and post construction. Publicly available data relating to fisheries

and habitat, together with data gathered from targeted site visits as discussed in section 3.2 is used to inform the evaluation.

- Surface Water: This criterion examines the anticipated river crossings, and lakes in the context of their sensitivities, and the Water Framework Directive objectives to achieve Good Status. The evaluation is carried out having regard to the proximity of corridor options to water supply protection areas. Flood risk is considered with regard to the sensitivity of the corridor options to flooding.
- Ground Conditions (Soils, Geology and Hydrogeology): This criterion examines the nature of the soils/subsoils, the aquifer type and vulnerability and proximity of corridor options to the following: groundwater protection schemes, recorded geological heritage sites, historic quarries, recorded landslide events and geohazards. In addition, particular soil types and structures, for example peat and alluvium deposits, which may present construction challenges are considered.
- Material Assets: This criterion considers built infrastructure including roads and utilities that may be affected by the options under consideration, including anticipated disruption and possible outages to utilities services, road closures etc.
- Land Cover: This examines the existing land cover within each corridor option with regard to its compatibility with the proposed changes associated with the technology options under consideration.
- Landscape and Visual: International, national and county level landscape designations are important factors in a comparative assessment of corridor options. This sub-criterion examines County Development Plan designations, landscape character areas, scenic routes and protected views associated with each of the corridor options under consideration. Landscape relates to assessing effects of a development on the landscape as a resource in its own right and is concerned with how the proposal may affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character.
- Archaeological, Architectural and Cultural Heritage: This criterion examines the proximity to and potential views to and from recorded archaeological sites, architectural sites, local authority protected structures (such as bridges, relevant for UGC corridor options) and Local Authority Conservation Areas. Sites and Monuments Records (SMR) and National Inventory of Architectural Heritage (NIAH) have been referenced.
- Noise: This examines the anticipated noise environment with respect to the nature of established land use and the anticipated noise associated with the corridor options under consideration, having particular regard to construction phase activities.

4.5 Social Performance

The following considerations, as they relate to potential outcomes on individuals, families, their settlements andcommunities were evaluated. These sections of the report have been supplemented by the Social Impact Assessment tables as set out in Appendix B:

- Settlements: The number and size of settlements (towns, villages and rural housing) in the receiving environment
- Communities: The profile of communities, residents, workers and visitors in the receiving environment.
- Recreation and Tourism: Recreational activities (e.g. fishing, sports) and tourism visitors in the receiving environment, not included in the other sub criteria.

- Cultural resources and sense of place: Cultural 'heritage' is a general term used to describe aspects of the environment and intangible heritage which are valued for their age, beauty, history or tradition. It encompasses aspects of archaeology, architecture, history, landscape, folklore and tradition and topography. Cultural heritage is expressed in the physical landscape in numerous often interrelated ways. It encompasses cultural considerations that are bound up in cultural memory and associations, beliefs and traditions[3]
- Nuisance: This criterion examines how nuisance such as noise, traffic disruption and the potential for associated stress, may affect the population during both the construction and operational phases, having regard to constraints within the corridors.
- Visual Impacts: This criterion examines the anticipated changes to the general visual environment experienced by the local population. This is separate to section 4.4 (Landscape and Visual) as it focuses not only on official designated areas but also deals with how the visual environment experienced by individuals or groups of people may be subject to change as a result of the Project.
- Land Use : This criterion examines how the corridor options may effect land use in the receiving environment. It examines how the installation of an OHL or UGC may restrict future land use and the resulting affect on landowners.

4.6 Deliverability

Deliverability sub-criteria are:

- Implementation Timelines: Relative length of time until energisation (assess significant differences).
- Project Plan Flexibility: Does the Project plan allow for some flexibility if issues arise during design and construction.
- Dependence on other Projects: Does the Project depend on the completion of other projects.
- Permits & Wayleaves: Various permissions and wayleaves required to proceed to construction (e.g. number or level).
- Design Complexity: Assessment of crossings, obstacles or constraints that may complicate or impact the design. The project should also comply with the specified ratings as provided by EirGrid.

4.7 Evaluation

A comparison matrix has been used to identify the emerging best performing option against the five criteria described above.

Each of the options has been assessed against the criteria ranking presented in Figure 3.1 (refer to Chapter 3).

[3] https://www.eirgridgroup.com/site-files/library/EirGrid/Cultural-Heritage-Guidance-for-Electricity-Transmission-Projects.pdf

5 Evaluation Criteria Considerations and Context

5.1 Introduction

The following sections provide further detail on the sub-criteria themes described in Chapter 4, providing context, in general terms, to the differences between particular constraints and considerations as they apply to OHL's and UGC's.

5.2 Technical Context

The technical criterion is designed to ensure the technical differences between options are captured at the option selection stage. In these technical terms, the OHL corridor options under consideration for this project are essentially very similar, in that these options utilise the same technology. The same is true of the UGC corridor options under consideration for this project.

All options comply with the relevant safety standards and perform equally under the compliance with safety standards sub-criterion. Therefore, compliance with safety standards criterion is not discussed further.

5.2.1 System Reliability

Each option is assessed on the average failure statistics, such as the mean time to repair (MTTR) and the unplanned outages per 100 km per year.

The unplanned outages for 110 kV overhead lines was 0.255 per 100 km per year for the period between 2011 and 2016. The mean time to repair was 3 days during the same period.

The unplanned outages for 110 kV cross-linked polyethylene cable was 1.430 per 100 km per year for the period between 2011 and 2016. The mean time to repair was 58 days during the same period.

These statistics are summarised below in Table 5.1:

Table 5.1: Asset Reliability Statistics 2011 - 2016

Technology	Irish Transmission system statistics		International Statistics
	Unplanned outages per 100 km per year	Mean Time To Repair (days)	Unplanned outages per 100 km per year
110 kV XLPE Underground Cable	1.43	58	0.085
110 kV Overhead Line	0.255	3	1.800

Source: EirGrid

5.2.2 Expansion / Extendibility:

Each option is assessed for the power carrying capability of the circuit, which is limited by the heat (thermal losses) generated by the power flowing through the circuit. To increase the power carrying capability of the circuit this can be achieved by increasing its thermal capacity. For OHL technology this is usually achieved by uprating the line to a higher capacity by changing the OHL conductor or increasing its operating temperature. In terms of extendibility, OHL's can be refurbished to increase the life expectancy of the circuit.

For UGC, increasing the thermal rating may be difficult to achieve in the future due to the diameter of ducting and crossing of obstacles.Crossing of obstacles such as bridges, culverts, watercourses, transmission gas mains, drainage pipes or other cables can require UGC to be buried deeper and this would have an impact on the thermal rating of the cable.

5.2.3 Repeatability:

Each option is assessed on the repeatability of the technology used within the Irish transmission system. OHL technology at 110 kV is already widely in use with more than 4500 km of circuit length in operation on the Irish transmission system. Considering system integration, operation, and maintenance there are no limits envisaged with regards to the repeatability of 110 kV OHL's on the Irish transmission system.

UGC technology at 110 kV is also in use with approximately 400 km of circuit length in operation on the Irish transmission system. The average 110 kV UGC length on the Irish transmission system is circa 2km with the longest circuit between the Coomataggart and Ballyvouskill substations of circa 31km. The use of UGC with a length of more than 55km would be the longest UGC on the Irish transmission system. Considering the general length of existing UGC circuits and the strength of the 110 kV network it is considered likely that the any future opportunities for additional UGC may be limited in the area.

5.2.4 Technical Operational Risk:

Each option is assessed on the risk of operating different technologies on the transmission system. Overhead lines are seen as a tried and tested technology. Hence, low technical operational risk is associated with overhead line technology.

UGC is also considered as a tried and tested technology. However, the nature of cable technology means that when cables are used over long distances, they may require reactive power compensation to keep voltages within acceptable margins.

Large capacitance can be associated with UGC which may cause amplification of harmonics due to resonances on the network and change the harmonic impedance profile of the network in an unfavourable manner. A harmonic filter device can be installed to mitigate harmonic distortion.

Installation of reactive power compensation and harmonic filter devices increases the complexity of operation.

5.3 Economic Context

The economic assessment is based on project implementation costs. These are the costs associated with the procurement, installation and commissioning of the grid development. Each corridor is evaluated for kilometre length and used to calculate the cost of each option. These costs are indicative and used only for the purposes of comparison between options. The indicative costs are for the UGC and OHL elements only to enable a direct comparison between options for this singular element. The costs do not represent the total project costs.

The following standard development costs are used in the economic evaluation (refer to Table 5.2).

Table 5.2: Transmission Standard Development Costs

Ref	Technology	Description	Cost per km (€m)
C110-7	Underground cable	110 kV - 1600mm² Al XLPE cable Single Circuit (Xbond Trefoil, 195-221MVA) - In Roadway (Daytime)	€ 0.79
L110-8	Overhead Line	110 kV Single Circuit Woodpole 430mm² ACSR (>10km) & Earthwire	€ 0.28

Source: EirGrid

Table 5.3: Transmission Standard Development Costs - Shunt Reactor

Ref	Technology	Description	Cost (€m)
NSS-16	Shunt Reactor	110 kV - 25MVAr Air x 2	€ 1.34

Source: EirGrid

A 15% contingency will be provided for each option to allow for ancillaries such as:

- Poor ground conditions
- Provision for land reinstatement
- Use of bog mats
- Land access and fees
- Changes to method of excavation
- Complex crossings for example rivers
- Traffic management costs.

The economic performance of each option is assessed according to the bands outlined in Table 5.3 below:

Table 5.4: Bands for Economic Assessment

Cost (€m)
0 – 20
20 – 30
30 – 40
40 – 50
50 – 60

Source: Mott MacDonald

5.4 Environmental Context

Differences in approach in the consideration of environmental sub criteria when comparing OHL and UGC optionsare appropriate as the effects of the technology options are different. For example, the potential for significant environmental effects associated with UGC are often associated with temporary disruption related to the installation of cables along long linear routes. While OHL effects on the ground are often more localised, and permanent visual impacts are typically more pronounced than for UGC.

5.4.1 Biodiversity

For both OHL and UGC corridor options consideration is given to potential connectivity to Natura 2000 sites, particularly with regard to water crossings. For UGC technology, where the UGC cannot be accommodated in the existing bridge structures, river crossings will be facilitated by either open cut trenching, HDD or new cable bridges as and when appropriate.

A key sensitive biodiversity receptor is the River Moy SAC and associated sensitive aquatic Qualifying Interests (QI's) including; Salmon, Lamprey, Otter and Freshwater Crayfish. Sensitive habitats in the area including within European designated sites include; blanket bog, wet heath, degraded bog, transition mire, alkaline fen, poor fen/ flush, wet grassland and other less managed grasslands. Protected invertebrates in the area include populations of marsh Fritillary butterfly and other red listed (threatened) species of conservation interest typically associated with more semi natural habitats.

For the OHL corridor options, the evaluation is made with a focus on the proximity of polesets / tower locations and other works areas to Natura 2000 sites and high value ecological habitats in particular habitats sensitive to the proposed development. Collision risk to birds will also inform the comparative evaluation.

For the UGC corridor options the evaluation with respect to biodiversity has been undertaken with an understanding that while the corridor options follow existing roads, joint bays, and passing bays (for traffic management purposes) may require works outside of the existing road footprint (e.g. requiring temporary hedge removal) and potentially instream works during open cut trenching, where required at smaller water crossings.

5.4.2 Surface Water

For the OHL corridor options, the evaluation is made taking account of the anticipated proximity of polesets / steel towers to watercourses.

For the UGC corridor options, the evaluation is made taking account of the fact that where the cables cannot be accommodated by the existing bridges, water crossings will be facilitated by either open cut trenching, HDD or cable bridges as appropriate.

Without the implementation of mitigation measures, open cut water crossings have the potential to generate silt and suspended solids. Temporary modifications to a river channel can also have a direct impact on the cross section of the channel and may result in localised changes in sediment erosion/deposition and resulting water depth and velocity.

HDD requires an additional footprint as a launch pit for the drilling rig. Bentonite is used to support the bored hole while a pilot hole is drilled from one side of the crossing to the other side.

5.4.3 Ground Conditions (Soils, Geology and Hydrogeology)

For both OHL and UGC technologies consideration is given to particular soil types and structures, for example peat and alluvium deposits, that may present construction challenges, which in turn may result in additional resource usage and the potential for increased pollution risk and nuisance effects.

Both OHL and UGC technologies consider the risk of pollution to groundwater during construction works, and the potential connectivity to European sites. For OHL the construction works are associated with the locations of steel angle towers and wooden pole sets, while for UGC it is associated with trenching with and excavation of joint bays.

5.4.4 Material Assets

This examines the built infrastructure, including roads, in relation to the corridor options under consideration, and the anticipated disruption and possible outages to utilities services, road closures etc. There is a greater opportunity for construction works for the OHL corridor options to avoid effects on built infrastructure. UGC options largely follow the existing road network, with an associated anticipated effect on services, road closures etc.

5.4.5 Land Cover

This sub-criterion examines the existing land cover within each corridor option with regard to its ability to accommodate/absorb the proposed changes associated with the corridor options under consideration. For the UGC corridor options the width of the road and its ability to accommodate the required width of the cable trench, joint bays, passing bays etc. is taken into account. Clearance of vegetation along the road verges to accommodate joint bays and passing bays will be required in places. The installation of joint bays will result in permanent changes in those areas. Both OHL and UGC may impact on future land use changes with respect to forestation and bog rehabilitation.

The evaluation takes cognisance of permanent effects on future land cover associated with OHL.

5.4.6 Landscape and Visual

The Landscape and Visual sub-criterion examine the OHL and UGC corridor options in the context of landscape designations, landscape character areas, scenic and protected views as described in the County Development Plans. The evaluation has been carried out having regard to the assessment of the impact of OHL's as described in the Mayo County Council Development Plans Landscape Sensitivity Matrix.

For UGC options, river crossings may require new bridge crossings (where existing bridges are unable to accommodate the cables) resulting in visual changes to the environment.

When an UGC is constructed within a road, the road is reinstated once the works are complete. Where feasible, vegetation removed to facilitate installation of an UGC is also reinstated. Deep rooted plants are not however permitted above UGC's. Deep rooted plants adjacent to UGC's can also be problematic as during periods of low or no rainfall, increased drying of the soil due to root capillary action may affect the thermal capability of the cable system. Tree root systems may also get entwined around the cables causing damage to the ducts and cables. As a result, it is recommended (and sometimes imposed by local authorities) that sufficient distance be adopted between the cable system and the trees.

For narrow roads, the cable systems may need to be installed in the centre or may need to switch from one side of the road to another to reduce the impact on trees and also to accommodate the trench excavation works. In a worst-case scenario trees adjacent to a cable route may need to be permanently removed resulting in changes to the landscape.

5.4.7 Archaeology, Architecture and Cultural Heritage

This examines the proximity of the corridor options to recorded archaeological sites, architectural sites, local authority protected structures and Local Authority Conservation Areas. For OHL corridor options the evaluation has regard for the proximity of works areas to the above-mentioned sites, and the anticipated changes as a result of OHL's to the character of the surrounding environment of heritage sites. For UGC corridor options the evaluation has regard for heritage bridges, river crossings in areas of high archaeological potential, as well as the proximity of potential off-road sections, joint bays and passing bays to recorded cultural heritage sites. The potential for archaeological finds within roads has also been considered.

5.4.8 Noise

This examines the anticipated noise environment with respect to the nature of the established environment, and the anticipated disruption associated with the corridor options under consideration resulting from construction activities, road closures and disruptions. There is a

greater opportunity for construction works for the OHL corridor options being located remotely from receptors, while UGC options largely follow the existing road network with associated settlements (villages and rural housing). For UGC approximately 20 to 50m of cable can be laid per day dependent on conditions, and the comparative evaluation of corridor options takes cognisance of associated construction noise.

5.5 Social Performance

The following sections describe how social considerations may differ as they apply to OHL's and UGC's. These sections of the report have been supplemented by the social impact assessment tables as set out in Appendix B *Social Impact Tables*.

In general terms, social themes relate to population and communities and recreation and tourism. There are however interactions and inter-relationships between environmental and social themes. For example, nuisances, such as noise, land use, and visual changes can be considered as both environmental and social considerations, however, for the purposes of this report the environmental and social considerations have been separated as described below.

5.5.1 Settlements

Population classifications are set out by the Central Statistics Office (CSO) as follows:

- Small Towns: Population of less than or equal to 1,000
- Medium Towns: Population of 1,001 – 9,999
- Large Towns: Population of 10,000 – 30,000

OHL development generally aims to avoid concentrations of population in order to reduce actual and perceived environmental effects. It is EirGrid's current preference, to install UGC in the road network where feasible. Narrow local roads are not preferred as sufficient space is required within the road to facilitate the works. These wider roads tend to serve more densely populated settlements.

5.5.2 Nuisance (Traffic Disruption and Noise)

Nuisance, in the context of this report, relates to potential traffic disruption and noise associated with both OHL and UGC options. Typically, for a project of this nature, such nuisance is limited to the construction phase of a development.

The construction phase for an OHL may last a number of years as the timing of certain works will need to be scheduled in line with scheduled outages on the existing transmission grid. Works in winter months are also typically avoided.

Disruption and nuisance associated with the construction phase for an UGC in a road tends to be sequential, however, nuisance is more likely. Depending on the width of the road in which the cable is to be installed, partial or full road closures may be required. Such works also require the opening and re-instatement of a road with associated noise.

Such aspects are considered having regard to the following:

- Individuals, families, their settlements and communities and their well-being
- Communities, Recreation and Tourism
- Quality of Life
- Land use
- Cultural Resources and Sense of Place

As discussed in the Step 4A Report, for the 110 kV OHL option, wooden polesets would be proposed. Steel angle towers would however be required where an OHL needs to change direction or at a line termination point.

Aboveground structures associated with an UGC option are limited as described in section 5.4.6. Landscape and Visual.

The visual changes associated with the introduction of new permanent aboveground infrastructure can also affect individuals, families and communities and such considerations are discussed for both OHL and UGC options. This sub-criterion is informed by feedback gathered during the Step 4A public consultation.

5.5.3 Land Use

The limitations placed on land use that apply to both OHL and UGC options, and how these may effect current and future land use in the receiving environment, are considered.

An OHL will result in new permanent above ground structures on private land holdings along with a restricted corridor either side of the OHL. Areas already planted in forestry will be felled where necessary. An OHL will limit the future land use options both in terms of the footprint of the structures and exclusion zones along the power line. Future change of land use, such as afforestation and / or the rehabilitation of peatlands that involve rewetting land, will be limited where an OHL exists.

An UGC will impact on landuse in instances where either road widening or offroad options are necessary.

5.5.4 Community Benefits

A North Connacht Community Fund will be established which will include:

- General community grants fund to assist in improving facilities and education for all ages
- Sustainability fund to support transition to sustainable communities and
- Biodiversity fund to enhance local biodiversity features.

EirGrid will confirm the full and enhanced value of the scheme and establish a North Connacht Community Forum subject to planning permission being granted. This will lead and shape the community benefit scheme. The group membership will include local community members from the communities impacted by the project. It will be supported by an independent chairperson and a fund administrator. The funds for the scheme will be released in three phases as milestones are reached – when the construction phase commences, when the infrastructure is being installed and at the commissioning stage.

This ensures a long term benefit for North Connacht Communities. This enhanced approach to community funding for the North Connacht project reflects the strategic importance of the project and reflects EirGrid’s ambition to facilitate a greater role for communities in this transition.

5.6 Deliverability Context

Each corridor option is assessed with respect to deliverability performance on the basis of the following criteria:

5.6.1 Implementation Timelines

Each option is assessed for relative length of time from the beginning of the construction phase until energisation. Consideration is given to the corridor lengths, as well as any seasonal and local constraints that may impact the implementation. The critical path of the construction programme is the installation of the technology. As such, options with the same technology have similar implementation timelines.

Installation rates will assume a standard 5-day working week. The following installation rates are applied:

- 25m per crew per day for installation of UGC. Assume works sequenced to allow 6 crews working in parallel.
- 1km per week for installation of OHL. Assumes that works can be completed in parallel with multiple crews.

The installation of UGC will primarily be within public roadways, whereas OHL will primarily require installation on third party lands. To allow for securing landowner consents an additional 12 months has been allowed for in the implementation timelines for the OHL options.

5.6.2 Project plan flexibility

Each corridor option is assessed for the level of flexibility to identify a route. There is a reasonable level of flexibility to identify routes for all options. However, once the route is designed and the planning consent secured there would be very little flexibility at that stage.

5.6.3 Dependence on other projects

Each option corridor is assessed for the extent to which the corridor may be impacted by other infrastructure projects in the area. All options have been reviewed and do not have a dependence on other infrastructure projects.

5.6.4 Permits and Wayleaves

All options presented will be new infrastructure and will require permits, wayleaves and/or easements. For OHL's is generally accepted that it takes more time to achieve wayleaving and thus increases difficulty and creates risk for these options. The delivery of recent OHL projects suggest that it can take a number of years to complete all necessary consents, agreements and wayleaves. This is a particular risk for the delivery of the North Connacht project in the context of the need to expedite project delivery.

The UGC corridors are largely located along existing road infrastructure and as such can reduce difficulty and the risk in attaining permits. However, where a cable route is located outside of the road networks this will necessitate negotiation with landowners and be subject to wayleave and/or easement requirements.

It is likely that additional equipment such as 2 x 25 MVAr shunt reactors and a harmonic filter will be required for all UGC options. This equipment will be located at Moy and Tonroe substations which may require an extension of the substation boundaries. The lands required for extension of substations are owned by third parties.

5.6.5 Design Complexity

Each route corridor option is assessed in terms of obstacles or crossings encountered. The following constraints are considered in the assessment:

- Poor ground
- Water courses
- Elevated Terrain
- Utility, River, Rail and Road crossings
- The need for HDD
- Requirements to micro-route to ensure minimum duct bending radius of 6m
- Existing services within roadways
- Dwellings.

6 Evaluation of Overhead Line Corridor Options

6.1 Introduction

This section provides an assessment of each OHL corridor option against the five criteria, and their sub-criteria as described in Chapter 4.

6.2 OHL Corridor Option A (purple on map)

6.2.1 Description of OHL Corridor Option A

The overall length of corridor option A is approximately 50km. Corridor option A which is approximately 1km in width after leaving the River Moy Area, runs in a north-east and then an easterly direction towards Lough Talt initially running south of the R294.

In the area of Glenree corridor option A crosses to the north of the R294 and the existing Clunghill – Glenree 110 kV OHL. Thereafter, corridor option A follows the approximate route of the existing 110 kV OHL until that line heads north-east approximately 4km west of Tubbercurry and corridor option A continues in a south-east direction until corridor option A turns south to Ballaghaderreen and Tonroe substation.

There is rising topography where the corridor runs through the Ox mountain Range, the dominant topographical feature within the study area. As the corridor extends eastwards the topography is generally undulating running through agricultural and bogland areas with small patches of forestry.

6.2.2 Technical Performance - Option A

6.2.2.1 System Reliability

System reliability is based on the average failure statistics as outlined in section 5.2.1. The figures for OHL's compare favourably with international statistics and for this reason, option A is considered to be **low (yellow)** risk in terms of system reliability.

6.2.2.2 Expansion / Extendibility

For the reasons outlined in section 5.2.2, option A is considered to be **low (yellow)** risk for expansion / extendibility.

6.2.2.3 Repeatability

For the reasons outlined in section 5.2.3, option A is considered to have a **low (yellow)** risk in terms of repeatability.

6.2.2.4 Technical Operational Risk

For the reasons outlined in section 5.2.4, option A is considered to have a **low (yellow)** risk in terms of repeatability.

6.2.2.5 Combined Technical Performance

Taking the combined technical sub criteria into account, option A, results in a combined technical performance of **low (yellow)** risk.

Table 6.1: Summary of Technical Performance - Option A

Option A	System Reliability	Expansion / Extendibility	Repeatability	Technical Operational Risk	Combined Technical Performance
Technical Performance					

Source: Mott MacDonald

6.2.3 Economic Performance - Option A

The estimated implementation costs for option A have been developed in accordance with section 5.3. The estimated implementation costs for option A is €22.8m. See Table 6.2 below.

Table 6.2: Costs - Option A

Description	Cost (€m)
Overhead line	€ 19.8
Contingency 15%	€ 3.0
Total	€ 22.8

Source: Mott MacDonald

Comparing the cost to bands for economic assessment as outlined in table 5.3, the cost for option A is in the range of €20m to €30m and is considered **low to moderate (green)** risk for economic performance.

Table 6.3: Summary of Economic Assessment - Option A

Option A	Project Implementation Costs
Economic Performance	

Source: Mott MacDonald

6.2.4 Environmental Performance – Option A

6.2.4.1 Biodiversity

Corridor option A crosses the River Moy SAC once in the townlands of Creegashaun, Tullmoy and Banada north of the town of Banada. The SAC is approximately 150m – 200m wide at this location. Potential Qualifing Interest (QI) habitat at this location includes; river fringe semi natural woodland, semi natural wet grassland and degraded bog. More improved grassland is also evident at this location. This location in particular will require baseline biodiversity surveys.

Cloonakillina Lough SAC/ pNHA is located on the northern edge of the corridor (co-ordinates 558893, 805959) and has fringing wetland/ transition mire habitat which can be avoided.

Two lakes occur in the townland of Currower: Caorhann Lough (Coordinates: 529622, 813621) and Carton Lough (Coordinates: 529982, 813635). Ballymore Lough is located ca. 50m south of the two lakes. There is potential that water birds may fly between the lakes and any proposed

OHL in this area, presenting a potential collision risk (particularly in the absence of bird flight diverters on the line).

There is an area of potential Annex I wet heath and blanket bog habitat which spans the corridor in the townands of Bunnyconnellan East and Drumsheen (here it has a width of approximately 800m at its narrowest part).

A large section of the corridor traverses a Margaritifera Sensitive Area. This extends from Tullaghaglass townland to Eskragh townland.

There are potential karst features north of the corridor at Roosky, and a turlough (Doocastle, GSI) geological feature recorded in the townland of Derrykinlough at the centre of the corridor (co-ordinates 558417, 805562). Turloughs are priority Annex 1 habitats (i.e. habitats in danger of disappearance) and further site survey would be required to confirm if turlough habitat occurs. These habitats can likely be avoided by an OHL.

Based on the above, corridor option A is assigned a **moderate (dark green)** risk in terms of biodiversity. Key risks to biodiversity are predominantly due to localised requirements for works in upland blanket bog / wet heath habitat.

6.2.4.2 Surface Water

OHL corridor option A is intersected by 29 watercourses, and there are 13 lakes within the corridor. The corridor crosses the River Moy within the SAC in the townlands of Creegashaun, Tullmoy and Banada north of the town of Banada, The River Moy is assigned a moderate WFD status at this location. All of the watercourses within the corridor option A have connectivity to Natura 2000 sites.

For the OHL corridor options, the evaluation is made taking account of the anticipated proximity of pole sets and steel angle towers to watercourses. For option A, there is a reasonable level of flexibility to identify an OHL route within the corridor, whereby there will be no groundworks in proximity to the watercourses.

There are no public supply source protection areas (GSI) or EPA public water supply protection areas within corridor option A.

Due to the flexibility that OHL's afford with respect to watercourse crossings, option A is considered to have a **low-medium (green)** risk with respect to potential impacts on watercourses.

6.2.4.3 Ground Conditions

Land cover as described in the Corine Land cover dataset within the corridor is predominantly pasture with smaller areas of coniferous forest, land principally occupied by agriculture with significant areas of natural vegetation, peat bog and transitional woodland-shrub. There are substantial areas of peat bog spanning the corridor at a number of locations along the corridor. This occurs in the following areas: the townlands of Drumsheen and Bunnyconnellan East, Tullaghaglass, Castlerock, Roosky and Cloonfeightrin, and Largan. Peat bog comprises approximately 29% of the corridor.

The part of the corridor north of Lough Talt is characterised by some bedrock outcrop, and there are a number of recorded landslide events within and north and south of the corridor at Largan. There is a recorded geological heritage site (Zion Hill) within the corridor in the townland of Ounagh. South of this area, there is a large area of bedrock outcrop within the corridor in the townland of Castlerock. There are geological karst features north of the corridor at Roosky, and

a turlough (Doocastle, GSI) recorded in the townland of Derrykinlough. Turloughs are priority Annex 1 habitats (i.e. habitats in danger of disappearance).

There are two areas of Regionally Important Aquifer within the corridor. The first extends from Ballina to Bunniconlon, and the second is in the townland of Gortemone. Aquifer vulnerability is extreme or high over the majority of the corridor.

Corridor option A is considered **moderate (dark green)** risk in terms of ground conditions.

6.2.4.4 Material Assets

In the areas of Drummartin and Glenree, the corridor crosses the R294 and the existing Clunghill – Glenree 110 kV OHL at both locations. There are two national road crossings associated with corridor option A.

Corridor option A is assigned a **low-moderate (green)** risk with respect to material assets.

6.2.4.5 Land Cover

Land cover is predominantly pasture and pasture interspersed with natural vegetation. The corridor is characterised by sheep or beef farms comprising smaller than average field sizes. The elevated terrain around Glenree has a large area of land held in commonage. In addition, there are areas of peatlands (which appear to be non-commercial), and small areas of commercial forestry within the corridor.

Corridor option A is assigned a **low-moderate (green)** risk with respect to land cover.

6.2.4.6 Landscape and Visual

Corridor option A departs the River Moy Area within Mayo County Council Landscape Policy Area 4 and exits the county on approach to the Ox Mountain Range within Landscape Policy Area 3. The Mayo County Council Development Plans Landscape Sensitivity Matrix considers the impact of power lines on these policy areas to be medium to high with regards policy area 4 and to be high impact for policy area 3. The section of the corridor north and east of Lough Talt comprises large sections considered Sensitive Rural Landscape areas within the Sligo County Council Development Plan. The corridor re-enters Mayo through an area again categorised as Landscape Policy Area 4 before traversing through a moderate landscape policy area in County Roscommon.

The upland area surrounding Lough Talt and this part of the Ox Mountain Range can be considered visually vulnerable. Mayo County Council have a network of walking routes identified here whilst Sligo County Council have identified a number of visually vulnerable sites and scenic routes in this area. These scenic routes are described as having views of Lough Talt, The Ox Mountains and the Atlantic Ocean.

For the reasons outlined above, corridor A is considered **moderate to high (blue)** risk in terms of Landscape and Visual.

6.2.4.7 Archaeological, Architectural and Cultural Heritage

The Archaeological, Architectural and Cultural Heritage criterion examines the impact of the OHL on the National Inventory of Architectural Heritage and the Sites and Monuments Records within the vicinity of the OHL's.

There are 85 SMR sites and 1 NIAH within corridor B. The majority of the features that are found are souterrain, ringforth-rath, fulacht fia, moated sites, standing stone, and enclosures.

Some other less common features include megalithic tombs, burial grounds, ogham stones and holy wells. Further details are listed below:

- The SMR's are generally scattered throughout the corridor particularly in the western section of the corridor in the townlands of Corrower, Carrowcastle, Lissard More and Carrowcrom.
- There is a grouping/cluster of SMR sites in the Corrower townland. These comprise ogham stones, standing stones, mounds, enclosures.
- Where the corridor crosses the Ox mountains for approximately 12.5km from the townland of Bunnyconnellan West to the southern area of Castlerock or Castlecarragh there is one SMR listed (now redundant).
- A cluster of SMR sites are located within the centre of the southern area of the townland of Castlerock or Castlecarragh. These include two Souterrain, hut site, ringfort-rath, fulacht fia, ringfort-cashel, castle (unclassified), Kiln-lime, and Megalithic tomb. These are within close proximity to the Dromore West to Mullanys Cross scenic route.
- There is a children's burial ground (SL06504) located in the townland of Ballincurry.
- Two miscellaneous excavation sites are located adjacent to the N25 north east of the Tonroe substation.

Regard has been given to opportunity to avoid works within or in close proximity to the SMR sites within corridor A. A **low-moderate risk (green)** is assigned due to the anticipated changes to the character of the surrounding environment of the heritage sites associated with overheard lines.

6.2.4.8 Noise

Effects of OHL on the noise environment will be temporary in nature during the construction phase.

Corridor option A is located in a quiet rural environment, characterised by one off rural dwellings along the local road network. There are 619 buildings with an address within the corridor, of which the majority are residential (only eight properties categorised as solely commercial).

Corridor option A is therefore considered **low (yellow)** risk in terms of noise.

6.2.4.9 Combined Environmental Performance

Taking the combined environmental sub criteria into account, option A, results in a combined environmental performance of **moderate (dark green)** risk.

Table 6.4: Summary of Environmental Performance – OHL Corridor Option A

Option A	Biodiversity	Surface Water	Ground Conditions	Material Assets	Land Cover	Landscape & Visual	Cultural Heritage	Noise	Combined Environmental Performance
Environmental Performance									

Source: Mott MacDonald

6.2.5 Social Performance – Option A

6.2.5.1 Settlements

Corridor option A leaves the River Moy Area and does not traverse any major settlement until it reaches its connection point at Tonroe Substation on the outskirts of Ballaghaderreen. The corridor is characterised by one off rural dwellings along a network of mostly secondary roads. There are a total of 619 buildings with an address within the catchment of the approximately 1km wide corridor. The vast majority of these addresses are residential with only eight properties categorised as solely commercial. The section of the corridor east and west of the Lough Talt area is very sparsely populated. In the upland area directly north of Lough Talt there is a stretch of the corridor where there are no dwellings within a ca. 3km stretch of the corridor.

Corridor A is therefore considered **moderate (dark green)** risk in terms of settlements.

6.2.5.2 Communities

According to the Central Statistics Office (CSO) Small Area Population Statistics dataset (SAPS) corridor A is characterised as having a low density of population based on the 2016 census data. The average household size along the corridor is 1.9 to 2.5 people per household. This is below the national average of approximately 2.7 people. There is also a higher than average age profile throughout the corridor. The Electoral Districts (EDs) within the corridor fall within the top two categories for average age, having an average population age of either 40.1 to 42.5 years or 42.6 to 51.7 years. The average age nationally in 2016 was 37.4 years.

The community within corridor A is a rural one containing farm holdings of predominantly beef or sheep farms, or a mixture of both. According to a 2018 Teagasc survey of the average size of enclosed agricultural fields by townland in Ireland this part of the country contains smaller than average field sizes. Generally lower than average field sizes are an indicator of lower intensity agricultural practices. The section of corridor A surrounding the Ox mountains has a high prevalence of land held in commonage. This would suggest a higher prevalence of low intensity sheep farming in this area of more naturally vegetated lands whilst pasture lands more amenable to cattle are on the less elevated lands of the corridor. There are pockets of commercial forestry interspersed throughout corridor A. There are also peatlands throughout the corridor which appear for the most part to be operated non-commercially but are rather individual turf banks for home fuel consumption or cutaway bog.

With regard to the above Option A is considered **moderate risk (dark green)** in terms of communities.

6.2.5.3 Recreation and Tourism

Corridor option A covers an area of Counties Mayo, Sligo and Roscommon south of the major town of Ballina. Ballina is a town included in Fáilte Irelands defined tourist route known as the Wild Atlantic Way but it has a much greater focus on freshwater fishing tourism than activities connected to the Atlantic Ocean. This part of Ireland is internationally recognised as being a prime salmon fishing destination. The River Moy, Lough Conn and their surrounding network of coarse angling lakes and rivers are an important tourist resource for the region. Many of these lakes and rivers are contained within or adjacent to Corridor A such as Lough Talt at the north end or the River Moy which flows through the midpoint of the corridor.

The landscape within corridor A is described locally in terms of its unspoilt scenic beauty in particular around the Ox Mountain Range. There are hiking and kayaking tours offered around Lough Talt by businesses based in both Ballina and Sligo.

With regard to the above corridor option A is considered a **moderate risk (dark green)** in terms of recreation and tourism.

6.2.5.4 Cultural Resources and sense of place

The cultural resources and sense of place among the communities within the North Connacht study area have been shaped by the unique history of the area. This part of the country was one of the worst affected areas of Ireland during the great famine of 1845-1849. [4] [5] [6] A legacy that grew out of this famine experience was a dedication among many in the locality towards supporting tenant farmers. The Irish National Land League movement was a significant organisation in this regard and was founded in this part of Mayo in 1879.

In the decades that followed the Irish Land Commission was established and had responsibility for redistributing land in Ireland. The largest redistribution programme was implemented in the western counties of Ireland in what was termed “Congested Districts”.[7] Much of the land holdings in the current Project study area were redistributed in this programme.

It is also worth noting the influence of Catholicism in terms of cultural resources and sense of place. Knock Shrine is located 5km south of the study area and is a significant Catholic Pilgrimage site. The Catholic Church has played a role in shaping the culture and values of the area and indeed a third of the activists in the Land League movement were Catholic priests.

The history and culture attached to the lands within the study area, along with the predominance of smaller landholdings and the sense of place that landscape and land conjures is acknowledged in the consideration of options,in particular for OHL.

It is in the above context, with particular regard to the emotive issue surrounding ownership and rights over land and the sense of place that it gives rise to, that it is deemed the affect of an OHL on the cultural resources and sense of place is **moderate-high risk (blue)**.

6.2.5.5 Nuisance

As emphasised under section 6.2.5.1 (Settlements) corridor option A has a low density of housing dispersed across the landscape. With appropriate routing of an OHL within the corridor noise impacts on local residential properties during the construction phase should be a low risk concern.

Accessibility throughout the corridor is mostly from narrow secondary roads and road closures and traffic disruptions may impact on local residents during a construction phase. An appropriate traffic management plan will be designed to minimise this impact. Any plan should ensure it facilitates farming operations such as the movement of machinery and livestock

There is evidence of active turf banks throughout the corridor and reduced access and egress to these banks in the months of March to May when turf cutting operations are generally at their most active may cause some nuisance. In many of these rural dwellings turf may be the sole source of fuel.

With regard to the above it is considered that nuisance during the construction phase will be a **low – moderate risk (green).**

[4] https://www.arcgis.com/apps/MapSeries/index.html?appid=8de2b863f4454cbf93387dacb5cb8412

[5] http://www.theirisharchives.com/

[6] http://airo.maynoothuniversity.ie/external-content/famine-mapping-1841-1851-county-mayo

[7] https://iale.uk/land-distribution-ireland-twentieth-century

6.2.5.6 Visual Impacts

This section focuses on the visual impacts across the wider corridor without special regard to the officially designated views and routes within the relevant County Development Plans which are covered in section 6.2.4.6. The area of highest visibility along corridor A will be in the upland areas of the Ox Mountain range. This stretches from the townland of Drumsheen to Tullaghglass where the highest point within the corridor is, measuring 370m above sea level. This is also the least populated area of the corridor where there are no buildings within a circa 3km stretch. The greatest visual impact here will be on the appreciation of the local scenery by visitors to the area.

Following south of the Ox Mountain range the corridor passes through a low lying landscape with buildings sparsely dispersed throughout. There are many pockets of commercial forestry throughout the corridor offering potential screening from the visual impact of an OHL.

Having regard to the above it is considered that the visual impact from OHL's in this area is a **moderate risk (dark green).**

6.2.5.7 Land Use

As described in section 6.2.5.1 (Settlements) Corridor A is a predominantly rural location consisting of a mixture of pasture lands, peat bogs and forestry. An OHL will result in permanent above ground structures along with a restricted corridor either side of the OHL. Thus limitations will be placed on the current and future landuse of land holdings over which an OHL is to be installed. Areas already planted in forestry will be felled where necessary whilst limitations will be placed on future afforestation as a land use option.

There are large tracts of bogland in the townlands of Rooskey and Derrykinlough along Corridor A that span the entirety of the 1km corridor. The routing of OHL's through these peatlands and cutaway bog may limit any future rehabilitation or reclamation of these areas. The rehabilitation of bogland ordinarily requires the blocking of drains and rewetting of the land which may be incompatible with OHL structures and associated access requirements.

There is a horse riding stables business within the corridor in Banada. It is recognised that the equine industry may be more sensitive to the impact of OHL's [8] and while every effort is made to avoid these sensitive receptors, it may not always be the possible to achieve.

The impact from OHL's in terms of land use is considered **moderate-high (blue)** taking into account the above factors.

6.2.5.8 Combined Social Performance

Taking the combined social performance sub criteria into account, option A, results in a combined social performance of **moderate – high risk (blue).**

[8] http://www.eirgridgroup.com/site-files/library/EirGrid/EirGridEquineReview.pdf

Table 6.5: Summary of Social Performance – OHL Corridor Option A

Option A	Settlements	Communities	Recreation and Tourism	Cultural Resources & Sense of Place	Nuisance	Visual Impacts	Land Use	Combined Social Performance
Social Performance								

Source: Mott MacDonald

6.2.6 Deliverability Performance - Option A

6.2.6.1 Implementation Timelines

The construction of option A is expected to take approximately 38 months. This timeline is based on assumptions and installation rates as outlined in section 5.6.1. However, there is risk associated with potential for access constraints. Considering this risk and corridor length, option A is considered moderate to **high (blue)** risk for implementation timelines.

6.2.6.2 Project plan flexibility

For option A, there is a reasonable level of flexibility to identify an OHL route within the corridor. However, once the route is designed within the corridor and the planning consent secured there would be very little flexibility at that stage. Option A is therefore considered to have a **moderate (dark green)** risk in terms of project plan flexibility.

6.2.6.3 Dependence on other projects

The proposed options do not have a dependence on other infrastructure projects and is therefore considered to be **low (yellow)** risk.

6.2.6.4 Permits and Wayleaves

As described in section 5.6.4, it can be very difficult to obtain wayleaves for OHLs and this creates a significant risk to the project. Option A is therefore considered to be **high (dark blue)** risk in terms of permits and wayleaves.

6.2.6.5 Design Complexity

The OHL corridor option A is generally rural-agricultural lands. The corridor crosses the River Moy SAC at a single location, south west of Tubbercurry. An OHL route will need to cross the SAC which may increase the complexity of the design at this location.

In the areas of Drummartin and Glenree, the corridor crosses the R294 and the existing Clunghill – Glenree 110 kV OHL at both locations. In the design of a new overhead line route these crossings may present challenges and increase the complexity of the design at these locations.

The corridor also passes elevated terrain between Lough Hoe Bog SAC to the south and Ox Mountain Bogs SAC to the north as it passes Lough Talt. This elevated terrain presents difficulty for access and increases the risks for constructability.

For these reasons, option A is considered to be **moderate to high (blue)** risk for design complexity.

6.2.6.6 Combined Deliverability Performance

Taking the combined technical sub criteria into account, option A, results in a combined deliverability performance of **moderate to high (blue)** risk.

Table 6.6: Summary of Deliverability Performance - Option A

Option A	Implementation Timelines	Project plan flexibility	Dependence on other projects	Permits and Wayleaves	Design Complexity	Combined Deliverability Performance
Deliverability Performance						

Source: Mott MacDonald

6.2.7 Summary Option A

A summary of the risks associated with OHL corridor option A is provided in Table 6.7 below.

Table 6.7: Summary of Option A

Option A	Technical Performance	Economic Performance	Environmental Performance	Social Performance	Deliverability	Overall Performance
Performance						

Source: Mott MacDonald

6.3 OHL Corridor Option B (orange on map)

6.3.1 Description of OHL Corridor Option B

The overall length of corridor option B is approximately 44km. Corridor option B, after leaving the River Moy Area, runs in a south-east direction approximately 7km east of Foxford, and approximately 5km north of Swinford. Corridor option B thereafter runs north of the N26 and N5. Corridor Option B turns in a south-east direction after passing Charlestown, and heads toward Ballaghaderreen where it crosses over the N5 and merges with corridor option C for the last 10km before reaching Tonroe substation. The topography of the corridor is relatively low-lying for a large extent of the option after the corridor extends over the southern area of the Ox Mountain Range.

6.3.2 Technical Performance - Option B

6.3.2.1 System Reliability:

System reliability is based on the average failure statistics as outlined in section 5.2.1. The figures for OHL's compare favourably with international statistics and for this reason, option B is considered to be **low (yellow)** risk in terms of system reliability.

6.3.2.2 Expansion / Extendibility:

For the reasons outlined in section 5.2.2, option B is considered to be **low (yellow)** risk for expansion / extendibility.

6.3.2.3 Repeatability:

For the reasons outlined in section 5.2.3, option B is considered to have a **low (yellow)** risk in terms of repeatability.

6.3.2.4 Technical Operational Risk:

For the reasons outlined in section 5.2.4, option B is considered to have a **low (yellow)** risk in terms of repeatability.

6.3.2.5 Combined Technical Performance

Taking the combined technical sub criteria into account, option B, results in a combined technical performance of **low (yellow)** risk.

Table 6.8: Summary of Technical Performance - Option B

Option B	System Reliability	Expansion / Extendibility	Repeatability	Technical Operational Risk	Combined Technical Performance
Technical Performance					

Source: Mott MacDonald

6.3.3 Economic Performance - Option B

The estimated implementation costs for option B have been developed in accordance with section 5.3. The estimated implementation costs for option B is €19.9m. See Table 6.9 below.

Table 6.9: Costs - Option B

Description	Cost (€m)
Overhead line	€ 17.3
Contingency 15%	€ 2.6
Total	€ 19.9

Source: Mott MacDonald

Comparing the cost to bands for economic assessment as outlined in Table 5.3, the cost for option B is below €20m and is considered **low (yellow)** risk for economic performance.

Table 6.10: Summary of Economic Assessment - Option B

Option B	Project Implementation Costs
Economic Performance	

Source: Mott MacDonald

6.3.4 Environmental Performance - Option B

6.3.4.1 Biodiversity

There is a single crossing of the River Moy SAC in the townlands of Dromada, Carowliam More and Cloonainra. The SAC is between 400m - 500m wide at this location. It is noted based on aerial imagery, and analysis of NPWS Conservation Objective mapping of habitat areas, that this area is likely to be managed farmland, and not qualifying interest habitat of the SAC. However, given the designated status this increases the complexity of the crossing. Further detailed biodiversity surveys are required to assess this location.

There are a number of areas of non-designated potential Annex I wet heath, dry heath and blanket bog within the corridor, at a number of locations:

- In the centre of the corridor in the townland of Kilgellia.

- Spanning the corridor near Glanduff, the approximate width of the habitat at this location is approximately 600m at its narrowest part.
- Spanning the corridor in the townlands of Doonty and Prebaun - here the approximate width of the habitat is 400m at its narrowest part.

There are a number of lakes located in the corridor near Glanduff. Routing OHL between lakes would present a potential bird flight path collision risk. Bog crossed in the townlands of Cloonagh, Cloonainra and Tonroe have potential for breeding birds of conservation importance including possibly curlew.

The River Moy SAC partially intersects the corridor at Brackloonagh South. Works within the SAC should be avoided.

Based on the above Corridor Option B is assigned a **moderate to high (blue)** risk mainly due to the width of the River Moy SAC at Dromada which will likely require works/ infrastructure in the SAC. Detailed biodiversity surveys will be required to inform works areas and access points to works areas.

6.3.4.2 Surface Water

Corridor option B is crossed by 17 watercourses, and there are 10 lakes within the corridor. There is a single crossing of the River Moy within the River Moy SAC in the townlands of Dromada, Carowliam More and Cloonainra. The River Moy is assigned Good WFD status at this location. All of the watercourses within the corridor have connectivity to the River Moy SAC.

For the OHL corridor options, the evaluation is made taking account of the anticipated proximity of pole sets and steel angle towers to watercourses. For option B, there is a reasonable level of flexibility to identify an OHL route within the corridor, whereby groundworks are not anticipated in proximity to the watercourses.

There is a recorded The Office of Public Works (OPW) Past Flood Event (recurring, source: Yellow River) in the Glanduff area.

There are no public supply source protection areas (GSI) or EPA Public Water Supply Protection Areas within corridor option B.

Due to the width of the corridor, and the flexibility that OHL's afford with respect to watercourse crossings, option B is considered to have a **low-moderate (green)** risk with respect to potential impacts on watercourses.

6.3.4.3 Ground Conditions

Land cover as described in the Corine Land cover dataset within the corridor is predominantly pasture with smaller areas of coniferous forest, land principally occupied by agriculture with significant areas of natural vegetation, peat bog and transitional woodland-shrub. There are substantial areas of peat bog spanning the corridor at a number of locations along the corridor. This occurs in the following areas: Peat bog comprises approximately 29.3% of the corridor.

There is a quarry (Mayo County Council Quarry) located centrally in the corridor south of the Yellow [Foxford] River west of Corlee.

There are two areas within the corridor of Regionally Important Aquifer. One is in the Currower area at the northern end of the corridor where the aquifer is the Ballina Limestone Formation (Upper) (karstified). The aquifer vulnerability in this area is high and moderate. The second is in the Dromada area (between Dunmaynor and Cloonainra) where the aquifer is the Oakport

Limestone Formation (Karstified conduit). Here aquifer vulnerability is low, and moderate in places.

Substantial areas of extreme/high aquifer vulnerability occur at the following locations along the corridor: the area north west of Dunmaynor, and from Brackloonagh (South) to the Kilkeeran and Derrynagur areas near Tonroe.

The Killasser Group Water Scheme is situated east of the corridor in the townland of Cartronmacmanus, County Mayo. The Killasser Group Water Scheme (GWS) is supplied from three springs, and in 2010 it distributed an estimated 900 m^3 /d on average to approximately 400 households, of which 50% were cattle farms. The overall abstraction from the springs was expected to decrease in 2011 in line with ongoing network improvement works and the introduction of water meters to GWS customers (EPA, Establishment of Groundwater Source Protection Zones Killasser Group Water Supply Scheme: Killasser Springs, August 2011).

With regard to the above, corridor option B is assigned a **moderate (dark green)** risk with respect to ground conditions.

6.3.4.4 Material Assets

There are two national road crossings associated with corridor option B: the N17 north of Charlestown and the N5 east of Ballyglass. Corridor option B intersects the study area for the N17 Tobercurry To Knock Bypass north of Ballyglass.

Corridor option B is assigned a **low (yellow)** risk with respect to material assets.

6.3.4.5 Land Cover

Land cover is predominantly pasture and pasture interspersed with natural vegetation. The corridor is characterised by sheep or beef farms comprising smaller than average field sizes. The area at the foothills of the Ox Mountains near Glanduff and Attymachugh has some land held in commonage. In addition, there are areas of peatlands interspersed along the corridor (which appear to be non-commercial), as well as small areas of commercial forestry.

With regard to the above Option B is considered **low-moderate (green)** risk in terms of settlements and communities.

6.3.4.6 Landscape and Visual

Corridor Option B traverses both landscape policy areas 3 and 4 of the Mayo County Council Development Plan. The Mayo County Council Development Plans Landscape Sensitivity Matrix considers the impact of power lines on these policy areas to be medium to high with regards policy area 4 and to be high impact for policy area 3. This corridor also passes through an area of Sligo categorised as a Sensitive Rural Landscape.

There are no designated scenic routes or views within or adjacent to Corridor Option B. There are however 3 areas categorised as “Vulnerable Areas” in the Mayo County Development plan. These are the River Moy, Yellow River and Ballymore Lough. Section 3.1 (b) of the Mayo County Councils Landscape Appraisal plan describes these vulnerable areas as features which sustain the character and distinctiveness of the surrounding landscape. Any development in the environs of these areas must not impinge in any significant way on the “character, integrity or uniformity” of these vulnerable features when viewed from the surroundings.

A circa 2.5km section of the corridor around the townland of Carrowneden impacts on two Mayo County Council Looped Walks known as The Foxford Way looped walk and the Prebaun Loop Walk.

For the reasons outlined above, corridor B is considered **moderate to high (blue)** risk in terms of Landscape and Visual.

6.3.4.7 Archaeological and Cultural Heritage

There are 106 SMR sites and three NIAH's within this corridor. These comprise a range of features which include ogham stones, standing stones, mounds, enclosure, cist, ringfort, holy well, church, children's burial ground, cross, stone row, field boundary, ring barrow, and souterrains. More detail is provided below:

- There is a grouping/cluster of SMR sites in the Currower townland. These comprise ogham stones, standing stones, mounds, enclosure
- A children's burial ground (MA02395), a church (MA02394), a cross (MA02396), and a cross inscribed stone (MA02397) are located along the Glanduff Road within the corridor.
- There is a significant scattering of SMR sites across the corridor in the townland of Carrowneden, some of which are associated with the Foxford Way Loop Walk.
- There are six SMR sites (ringforts, ditch barrow) centrally located within the corridor in the townland of Bunnacranagh, close to the N17.

For OHL corridor option B the evaluation has regard to the opportunity to avoid works within or in close proximity to the sites. A **low-moderate score (green)** is assigned due to the anticipated changes to the character of the surrounding environment of the heritage sites.

6.3.4.8 Noise

Effects of OHL on the noise environment will be temporary in nature during the construction phase.

Corridor option B is located in a quiet rural environment, characterised by one off rural dwellings along the local road network. There are 645 buildings with an address within the corridor, of which the majority are residential (only 4 properties categorised as solely commercial).

Corridor option B is therefore considered **low (yellow)** risk in terms of noise.

6.3.4.9 Combined Environmental Performance

Taking the combined environmental sub criteria into account, option B, results in a combined environmental performance of **moderate-high (blue)** risk.

Table 6.11: Summary of Environmental Performance – OHL Corridor Option B

Option B	Biodiversity	Surface Water	Ground Conditions	Material Assets	Land Cover	Landscape & Visual	Cultural Heritage	Noise	Combined Environmental Performance
Environmental Performance									

Source: Mott MacDonald

6.3.5 Social Performance – Option B

6.3.5.1 Settlements

Corridor option B leaves the River Moy Area running in a south-east direction north of the town of Charlestown. To the north of the corridor the village of Attymas is only 400m outside of the corridor just south of Ballymore Lough. At the midpoint of corridor B it includes part of the southern settlement of Curry, a small town circa 4km north of Charlestown. The rest of the corridor is characterised by one off rural dwellings along a network of mostly secondary roads. There are a total of 645 buildings with an address within the catchment of the approximately 1km wide corridor. The vast majority of these addresses are residential with only 4 properties categorised as solely commercial. The most sparsely populated area is south of the Ox Mountain Range whilst the most densely populated area is around Tonroe substation on the outskirts of Ballaghaderreen.

Considering the above, and in particular its proximity to Attymass and Curry, this corridor option is considered **moderate-high (blue)** in terms of settlements.

6.3.5.2 Communities

According to the CSO Small Area Population Statistics dataset (SAPS) corridor B is characterised as having a low density of population based on the 2016 census data. The average household size along the corridor is 1.9 to 2.5 people per household. This is below the national average of 2.75 people per household. There is also a higher than average age profile throughout the corridor. The Electoral Districts (EDs) within the corridor fall within the top two categories for average age, having an average population age of either 40.1 to 42.5 years or 42.6 to 51.7 years. The average age nationally in 2016 was 37.4 years.

The community within corridor B is a rural one containing farm holdings of predominantly beef or sheep farms, or a mixture of both. According to a 2018 Teagasc survey of the average size of enclosed agricultural fields by townland in Ireland this part of the country contains smaller than average field sizes. Generally lower than average field sizes are an indicator of lower intensity agricultural practices. The section of corridor B located at the foothills of the Ox mountain range has a high prevalence of land held in commonage. This would suggest a higher prevalence of low intensity sheep farming in this area of more naturally vegetated lands whilst pasture lands more amenable to cattle are on the less elevated lands of the corridor.

There are pockets of commercial forestry interspersed throughout corridor B. There are also peatlands throughout the corridor which largely appear to be operated non-commercially. They comprise for the most part individual turf banks for home fuel consumption or cutaway bog.

With regard to the above option B is considered **moderate (dark green)** risk in terms of communities.

6.3.5.3 Recreation and Tourism

Corridor option B covers an area of Counties Mayo, Sligo, and Roscommon south of the major town of Ballina. Ballina is a town included in Fáilte Irelands defined tourist route known as the Wild Atlantic Way but it has a much greater focus on freshwater fishing tourism than activities connected to the Atlantic Ocean. This part of Ireland is internationally recognised as being a prime salmon fishing destination. The River Moy, Lough Conn and their surrounding network of lakes and rivers are an important tourist resource for the region. The River Moy, which is connected to Lough Conn, passes through the midpoint of Area B. At the northern half of the

corridor lies a number of smaller lakes and the Yellow River which all encompass part of the wider network of coarse fishing options in this area.

The village of Attymas, located 400m west of the Corridor, is home to the Father Patrick Peyton Memorial Centre. This is a religious centre opened in 1998 and dedicated to the life of Father Patrick Peyton who was a famous Irish Catholic Priest noted for his promotion of the Rosary throughout the world. The centre serves as a place of respite prayer and hosts mass, lunch and social activities for senior citizens living in the surrounding area and from further afield.

From the Step 4A public consultation feedback received it is evident that walking routes in and around area B at the foothills of the Ox Mountain Range are a particularly important local recreation resource. There is a walking route known as Prebaun Loop which starts and finishes at Attimachugh Church. This looped walk encompasses a section of corridor B just South of the Ox Mountain Range and is characterised by country lanes, mountain tracks and bogland walks. There are a large number of heritage sites such as cairns, cillíns, standing stones, fullacht fias and ancient churches in the vicinity of this walking route. This Prebaun Loop also forms part of the wider network of walking routes in the locality known as the Foxford Way.

There was a notable emphasis placed on the importance to the local community of walking routes in this area arising out of the public consultation. Corridor Option B is considered to be **moderate - high risk (blue)** for recreation and tourism considering the close proximity of the Father Peyton Centre along with the presence of looped walks and fishing sites within the corridor.

6.3.5.4 Cultural Resources and Sense of Place

The cultural resources and sense of place as outlined in section 6.2.5.4 in relation to corridor A is equally applicable to all four overhead line corridors.

It is in the above context, with particular regard to the emotive issue surrounding ownership and rights over land, that it is deemed the affect of an OHL on the cultural resources and sense of place is **moderate-high risk (blue)**.

6.3.5.5 Nuisance

As emphasised under section 6.3.5.1 (Settlements) corridor option B has a low density of housing dispersed across the landscape. With appropriate routing of an OHL within the corridor noise impacts on local residential properties during the construction phase will be a low risk concern. An appropriate traffic management plan will be designed to minimise this impact

With regard to the above it is considered that nuisance during the construction phase will be a **low – moderate risk (green)**.

6.3.5.6 Visual Impacts

This section focuses on the visual impacts across the wider corridor without special regard to the officially designated views and routes within the relevant County Development Plans which are covered in section 6.3.4.6. The area of highest visibility along corridor B will be in the upland areas at the foothills of the Ox Mountain range. This stretches from the townland of Carrowneden, where Prebaun Walking Loop is located, northwards to the townland of Glendaduff. It is in Glendaduff where the highest point in corridor B is located measuring 289 metres above sea level. This circa 7km stretch of the corridor is where most of the walking routes in the locality are. Feedback from the Step 4A public consultation suggest OHL's in the vicinity of these walking routes may negatively impact the local community's visual enjoyment and appreciation of these routes.

In terms of views from residential properties it is those properties located south and west of this elevated area that will be most impacted. However, this area is also characterised by being the least populated throughout corridor B. There are also many pockets of commercial forestry throughout the corridor offering potential screening from the visual impact of an OHL.

Having regard to the above it is considered that the visual impact from OHL's in this area is **moderate (dark green)**.

6.3.5.7 Land Use

As described in section 6.3.5.1 (Settlements) Corridor B is a predominantly rural location consisting of a mixture of pasture lands, peat bogs and forestry. An OHL will result in permanent above ground structures along with a restricted corridor either side of the OHL. Thus limitations will be placed on the current and future landuse of land holdings over which an OHL is to be installed. Areas already planted in forestry will be felled where necessary whilst limitations will be placed on future afforestation as a land use option.

In addition to forestry there is a considerable amount of peatlands throughout the corridor. The rehabilitation of bogland ordinarily requires the blocking of drains and rewetting of the land which may be incompatible with OHL structures and associated access requirements.

The impact from OHL's in terms of landuse is considered **moderate-high (blue)** taking into account the above factors.

6.3.5.8 Combined Social Performance

Taking the combined social performance sub criteria into account, option B, results in a combined social performance of **moderate-high risk (blue).**

Table 6.12: Summary of Social Performance – OHL Corridor Option B

Option B	Settlements	Communities	Recreation and Tourism	Cultural Resources & Sense of Place	Nuisance	Visual Impacts	Land Use	Combined Social Performance
Social Performance								

Source: Mott MacDonald

6.3.6 Deliverability Performance - Option B

6.3.6.1 Implementation Timelines

The construction of option B is expected to take approximately 36 months. This timeline is based on assumptions and installation rates as outlined in section 5.6.1. However, there is risk associated with potential for access constraints. Considering this risk and corridor length, option B is considered moderate to **high (blue)** risk for implementation timelines.

6.3.6.2 Project plan flexibility

For option B, there is a reasonable level of flexibility to identify an overhead line route within the corridor. However, once the route is designed within the corridor and the planning consent secured there would be very little flexibility at that stage. Option B is therefore considered to have a **moderate (dark green)** risk in terms of project plan flexibility.

6.3.6.3 Dependence on other projects

The proposed options do not have a dependence on other infrastructure projects and is therefore considered to be **low (yellow)** risk.

6.3.6.4 Permits and Wayleaves

As described in section 5.6.4, overhead lines it can be difficult to obtain wayleaves and this creates risk. Option B is therefore considered to be **high (dark blue)** risk in terms of permits and wayleaves.

6.3.6.5 Design Complexity

The overhead line corridor option B is generally rural-agricultural lands. The corridor crosses the River Moy SAC on two occasions. In the area north of Bellanacurra, the River Moy SAC transverses the corridor with widths ranging from 370m to 750m approximately. The typical maximum span for wood polesets is 320m. The width the SAC may increase the complexity of the design at this location.

The corridor also passes elevated terrain north of Glanduff. This elevated terrain presents difficulty for access and increases the risks for constructability.

For these reasons, option B is considered to be **moderate (dark green)** risk for design complexity.

6.3.6.6 Combined Deliverability Performance

Taking the combined technical sub criteria into account, option B, results in a combined deliverability performance of **moderate to high (blue)** risk.

Table 6.13: Summary of Deliverability Performance - Option B

Option B	Implementation Timelines	Project plan flexibility	Dependence on other projects	Permits and Wayleaves	Design Complexity	Combined Deliverability Performance
Deliverability Performance						

Source: Mott MacDonald

6.3.7 Summary Option B

A summary of the risks associated with OHL corridor option B is provided in Table 6.14 below.

Table 6.14: Summary of Option B

Option B	Technical Performance	Economic Performance	Environmental Performance	Social Performance	Deliverability	Overall Performance
Performance						

Source: Mott MacDonald

6.4 OHL Corridor Option C (pink on map)

6.4.1 Description of OHL Corridor Option C

The overall length of corridor option C is approximately 50km. Option C departs from The River Moy Area on the west side of the River Moy and then crosses the river at Tonybaun/Shanclough having first crossed the rail line lying to the west of the River Moy. Corridor Option C then runs in a south-east direction keeping east of Foxford, approximately 4km, and approximately 1km

north of Swinford. It passes approximately 1km south of Charlestown. Thereafter, corridor option C runs south of the N5 and turns to merge with Corridor option B for a distance of approximately 10km before entering Ballaghaderreen. The general topography of the corridor is low-lying south of the Ox Mountain Range as it extends to the existing substation at Tonroe.

6.4.2 Technical Performance - Option C

6.4.2.1 System Reliability:

System reliability is based on the average failure statistics as outlined in section 5.2.1. The figures for OHL's compare favourably with international statistics and for this reason, option C is considered to be low (yellow) risk in terms of system reliability.

6.4.2.2 Expansion / Extendibility:

For the reasons outlined in section 5.2.2, option C is considered to be **low (yellow)** risk for expansion / extendibility.

6.4.2.3 Repeatability:

For the reasons outlined in section 5.2.3, option C is considered to have a **low (yellow)** risk in terms of repeatability.

6.4.2.4 Technical Operational Risk:

For the reasons outlined in section 5.2.4, option C is considered to have a **low (yellow)** risk in terms of repeatability.

6.4.2.5 Combined Technical Performance

Taking the combined technical sub criteria into account, option C, results in a combined technical performance of **low (yellow)** risk.

Table 6.15: Summary of Technical Performance - Option C

Option C	System Reliability	Expansion / Extendibility	Repeatability	Technical Operational Risk	Combined Technical Performance
Technical Performance					

Source: Mott MacDonald

6.4.3 Economic Performance - Option C

The estimated implementation costs for option C have been developed in accordance with section 5.3. The estimated implementation costs for option C is €20.7m. See Table 6.16 below.

Table 6.16: Costs - Option C

Description	Cost (€m)
Overhead line	€ 18.0
Contingency 15%	€ 2.7
Total	€ 20.7

Source: Mott MacDonald

Comparing the cost to bands for economic assessment as outlined in Table 5.3, the cost for option C is in the range of €20m to €30m and is considered **low to moderate (green)** risk for economic performance.

Table 6.17: Summary of Economic Assessment - Option C

Option C	Project Implementation Costs
Economic Performance	

Source: Mott MacDonald

6.4.4 Environmental Performance – Option C

6.4.4.1 Biodiversity

Corridor option C intersects the River Moy SAC at the following four locations:

- At Colagagh: the width of the SAC ranges from 90m - 300m. There is an area of potential qualifying oak woodland habitat within the SAC boundary at northern part of the corridor at this location
- At Cloongullaun: the centre of the SAC is ca. 90m wide, while the eastern and western boundaries range between 140-240m wide. The crossing points consist predominantly of managed farmland. Fringing semi natural woodland and river habitat can be avoided. Potential crossing locations may be restricted at this location.
- At Cartron: the width of the SAC ranges between 70-200m. There is a Local Biodiversity area consisting of relatively intact blanket bog spanning up to 600m across the width of the corridor at this location which will constrain the potential crossing location.
- At Ballyglass: here it does not extend across the entire corridor. The width of the SAC is approximately 160m-320m. This may require having to route the OHL along the southern boundary to avoid the SAC.

The OHL route may be determined by the narrow sections of the SAC in each of the above locations.

There is a large area of Potential Annex I habitat; wet heath and blanket bog which spans the corridor near Roosky. Surveys to establish the presence of Annex I habitats should be undertaken. A smaller area of potential Annex I blanket bog habitat is centrally located in the corridor at Creggaballagh townland. There is also an Area of Annex I wet heath habitat located in the centre of the corridor at Cartron adjacent to the SAC. Surveys to confirm the presence of Annex 1 habitat will be required. The Cartron bogs are potentially used by sensitive bird species including breeding curlew and wintering raptors.

Based on the above Corridor Option C is assigned a **moderate (dark green)** risk in terms of biodiversity.

6.4.4.2 Surface Water

Corridor Option C crosses 21 watercourses, and there are four lakes within the corridor. The corridor crosses the following watercourses within the River Moy SAC:

- Yellow [Foxford] near Coolagagh (a high WFD status is assigned)
- Moy at Cloongullaun (a good WFD status is assigned)
- Sonnagh in the townland of Sonnagh (a poor WFD status is assigned) and

- Charlestown Stream near Ballyglass where a moderate WFD status is assigned.

There are no public supply source protection areas (GSI) or EPA Public Water Supply Protection Areas within corridor option C.

For the OHL corridor options, the evaluation is made taking account of the anticipated proximity of pole sets and steel angle towers to watercourses. For option C, there is a reasonable level of flexibility to identify an overhead line route within the corridor, whereby groundworks are not anticipated in proximity to the watercourses.

Due to the width of the corridor, and the flexibility that overhead lines afford with respect to watercourse crossings, option C is considered to have a **low-medium (green)** risk with respect to potential impacts on watercourses.

6.4.4.3 Ground Conditions

Land cover as described in the Corine Land cover dataset within the corridor is predominantly pasture with smaller areas of coniferous forest, land principally occupied by agriculture with significant areas of natural vegetation, peat bog and transitional woodland-shrub. There are substantial areas of peat bog spanning the corridor at a number of locations along the corridor. This occurs in the following areas: south of Roosky, the townlands of Callow, Creggaballagh, Cartron, and Derrynacross. Peat bog comprises approximately 23.7% of the corridor.

There is a large quarry extending approximately halfway across the corridor near Roosky. The area south of Roosky is characterised by bedrock outcrop and a number of landslide events are recorded in this area. There is also significant bedrock outcrop north of this area near Bunny Finglas.

There is an area of Regionally Important Aquifer near Esker. Aquifer vulnerability is extreme or high in the Roosky area, north of Callow lakes, near Cartron, and at the southern end of the corridor extending from Fauleens to Tonroe.

Corridor option C is considered **moderate (dark green)** risk in terms of ground conditions.

6.4.4.4 Material Assets

There are two national road crossings associated with corridor option C: the N5 west of Ballyglass and the N17 south of Ballyglass. Corridor option C intersects the study area for the N17 Tobercurry To Knock Bypass east of Ballyglass.

Corridor option B is assigned a **low (yellow)** risk with respect to material assets.

6.4.4.5 Land Cover

Land cover is predominantly pasture and pasture interspersed with natural vegetation. The corridor is characterised by sheep or beef farms comprising smaller than average field sizes. There is a large area of land held in commonage in the elevated terrain near Rooskey. In addition, there are areas of peatlands (which appear to be non-commercial), and small areas of commercial forestry within the corridor.

With regard to the above, corridor option C is assigned a **low-medium (green)** risk with respect to landcover.

6.4.4.6 Landscape and Visual

Corridor Option C traverses both landscape policy areas 3 and 4 of the Mayo County Council Development Plan. The Mayo County Council Development Plans Landscape Sensitivity Matrix considers the impact of power lines on these policy areas to be medium to high with regards policy area 4 and to be high impact for policy area 3.

Mayo County Councils Foxford Way and Largan More Looped Walks cross the corridor at 3 locations. There are also 2 highly scenic viewpoints according to the Mayo County Council Development Plan at Callow Lough Lower and Upper. Whilst these viewpoint locations are not directly contained in Corridor C, they do likely offer views north of the Loughs onto Corridor C impacting the viewshed.

For the reasons outlined above, corridor C is considered **moderate to high (blue)** risk in terms of Landscape and Visual.

6.4.4.7 Archaeological, Architectural and Cultural Heritage

There are 155 SMR sites and 6 NIAH's within corridor C. The majority of the features are souterrain, ringfort-cashel, ringfort-rath, fulacht fia, burnt mounds and enclosures. More detail is provided below:

- In the townlands of Coollagagh, Callow, Lismora and Cuildoo there are a significant number of SMR sites scattered across the corridor, some of which are clustered.
- There is a children's burial ground (MA08332) and a ringfort- rath (MA03201) in the townland of Sonnagh located in the centre of the corridor.
- There are 2 no. NIAH's along the corridor: Rathscanlan bridge in the townland of Rathscanalan and Sonnagh Bridge situated in the townland of Sonnagh, these are also listed as heritage bridges under Mayo County Council
- 2 no. NIAH's are located along the railway in Sonnagh, both of which are railway bridges and disused railway bridge is also located in Rathscanlan.

Regard has been given to opportunity to avoid works within or in close proximity to the SMR sites within corridor C. A **low-moderate score (green)** is assigned due to the anticipated changes as a result of overhead lines to the character of the surrounding environment of the heritage sites.

6.4.4.8 Noise

Effects of overhead line on the noise environment will be temporary in nature during the construction phase.

Corridor option C is located in a quiet rural environment, characterised by one off rural dwellings along the local road network. There are 648 buildings with an address within the corridor, of which the majority are residential (only 5 properties categorised as solely commercial).

Corridor Option C is located approximately 2.5km north of Knock Airport at it's closest point.

Corridor option C is therefore considered **low (yellow)** risk in terms of noise.

6.4.4.9 Combined Environmental Performance

Taking the combined environmental sub criteria into account, option C, results in a combined environmental performance of **moderate (dark green)** risk.

Table 6.18: Summary of Environmental Performance – OHL Corridor Option C

Option C	Biodiversity	Surface Water	Ground Conditions	Material Assets	Land Cover	Landscape & Visual	Cultural Heritage	Noise	Combined Environmental Performance
Environmental Performance									

Source: Mott MacDonald

6.4.5 Social Performance – Option C

6.4.5.1 Settlements

Corridor option C leaves the River Moy Area running in a south-east direction north of the town of Swinford. It continues in this direction south of the town of Charlestown and avoids any major settlements before approaching the town of Ballaghaderreen from its western side. Whilst there are small clusters of housing, such as at Drumscoba to the north and Sonnagh near the midpoint of the corridor, the corridor is predominantly characterised by one off rural dwellings along a network of mostly secondary roads. There are a total of 648 buildings with an address within the catchment of the approximately 1km wide corridor. The vast majority of these addresses are residential with only 5 properties categorised as solely commercial.

Considering the above this corridor option is considered **moderate risk (dark green)** in terms of settlements.

6.4.5.2 Communities

According to the CSO Small Area Population Statistics dataset (SAPS) corridor C is characterised as having a low density of population based on the 2016 census data. The average household size along the corridor is 1.9 to 2.5 people per household. This is below the national average of 2.75 people per household. There is also a higher than average age profile throughout the corridor. The Electoral Districts (EDs) within the corridor fall within the top two categories for average age, having an average population age of either 40.1 to 42.5 years or 42.6 to 51.7 years. The average age nationally in 2016 was 37.4 years.

The community within corridor C is a rural one containing farm holdings of predominantly beef or sheep farms, or a mixture of both. According to a 2018 Teagasc survey of the average size of enclosed agricultural fields by townland in Ireland this part of the country contains smaller than average field sizes. Generally lower than average field sizes are an indicator of lower intensity agricultural practices. The section of corridor B located at the foothills of the Ox mountain range, such as in the townlands of Rooskey and Boherhallagh, has a high prevalence of land held in commonage. This would suggest a higher prevalence of low intensity sheep farming in this area of more naturally vegetated lands whilst pasture lands more amenable to cattle are on the less elevated lands of the corridor.

There are pockets of commercial forestry interspersed throughout corridor B. There are also peatlands throughout the corridor which largely appear to be operated non-commercially. They comprise for the most part individual turf banks for home fuel consumption or cutaway bog.

With regard to the above Option C is considered **moderate (dark green)** risk in terms of settlements and communities.

6.4.5.3 Recreation and Tourism

Corridor option C covers an area of Counties Mayo and Roscommon south of the major town of Ballina. Ballina is a town included in Fáilte Irelands defined tourist route known as the Wild Atlantic Way but it has a much greater focus on freshwater fishing tourism than activities connected to the Atlantic Ocean. This part of Ireland is internationally recognised as being a prime salmon fishing destination. The River Moy, Lough Conn and their surrounding network of lakes and rivers are an important tourist resource for the region. The River Moy, which is connected to Lough Conn, passes through the midpoint of Area C. At the northern half of the corridor lies a number of smaller lakes and the Yellow River which all encompass part of the wider network of coarse fishing options in this area.

From the Step 4A public consultation feedback received it is evident that walking routes in and around the northern section of area C are a particularly important local recreation resource. In the townlands of Rooskey and Boherhallagh there is a looped walk within the corridor known as the Larganmore Loop. This forms part of the wider network of walking routes in the locality known as the Foxford Way.

Corridor Option C is considered to be **moderate - high risk (blue)** for recreation and tourism considering the presence of a number of walking routes and for the network of fishing sites within the corridor. There was a notable emphasis placed on the importance to the local community of walking routes in this area arising out of the public consultation.

6.4.5.4 Cultural Resources and sense of place

The cultural resources and sense of place as outlined in section 6.2.5.4 in relation to corridor A is equally applicable to all four overhead line corridors.

It is in the above context, with particular regard to the emotive issue surrounding ownership and rights over land, that it is deemed the affect of an OHL on the cultural resources and sense of place is **moderate-high risk (blue)**.

6.4.5.5 Nuisance

As emphasised under section 6.4.5.1 (Settlements) corridor option C has a low density of housing dispersed across the landscape. With appropriate routing of an overhead line within the corridor noise impacts on local residential properties during the construction phase should be a low risk concern. There is a nursing home, Saint Anne's located in the townland of Sonnagh, within Corridor option C that may be a more sensitive receptor to both noise and traffic in terms of nuisance.

Accessibility throughout the corridor is mostly from narrow secondary roads and therefore road closures and traffic disruptions may impact on local residents during a construction phase. An appropriate traffic management plan will be designed to minimise this impact.

It is considered that nuisance during the construction phase will be a **low – moderate** risk **(green)** as long as appropriate mitigation measures are in place.

6.4.5.6 Visual Impacts

This section focuses on the visual impacts across the wider corridor without special regard to the officially designated views and routes within the relevant County Development Plans which are covered in section 6.4.4.6. The area of highest visibility along corridor C will be in the upland areas at the foothills of the Ox Mountain range. There is a circa 8km stretch of the corridor from the townland of Rooskey in the north to Cuildoo in the south that contains a number of walking

routes over lands more elevated than their surroundings. The highest point within the corridor is in an upland area surrounded by a looped walk known as Larganmore. This is the least populated area within the corridor. However, feedback from the public consultation identifies opposition to overhead lines in the vicinity of these walking routes on the basis of negative visual impacts.

There are many pockets of commercial forestry throughout the corridor offering potential screening from the visual impact of an overhead line.

Having regard to the above it is considered that the visual impact from overhead lines within corridor C is **moderate (dark green)**.

6.4.5.7 Land Use

As described in section 6.4.5.1 (Settlements) Corridor C is a predominantly rural location consisting of a mixture of pasture lands, peat bogs and forestry. An OHL will result in permanent above ground structures along with a restricted corridor either side of the OHL. Thus limitations will be placed on the current and future land use of land holdings over which an OHL is to be installed. Areas already planted in forestry will be felled where necessary whilst limitations will be placed on future afforestation as a land use option.

In addition to forestry there is a considerable amount of peatlands throughout the corridor. The routing of overhead lines through peatlands and cutaway bog may impact and limit any future rehabilitation or reclamation of these areas. The rehabilitation of bogland ordinarily requires the blocking of drains and rewetting of the land which may be incompatible with OHL structures and associated access requirements.

Culmore horse training and trekking centre is located within the corridor in the townland of Cuilmore. It is recognised that the equine industry may be more sensitive to the impact of overhead lines [9] and while every effort is made to avoid these sensitive receptors, it may not always be the possible to achieve.

The impact from overhead lines in terms of landuse within corridor C is considered **moderate-high (blue)** taking into account the above factors.

6.4.5.8 Combined Social Performance

Taking the combined social performance sub criteria into account, option C, results in a combined social performance of **moderate-high risk (blue)**.

Table 6.19: Summary of Social Performance – OHL Corridor Option C

Option C	Settlements	Communities	Recreation and Tourism	Cultural Resources & Sense of Place	Nuisance	Visual Impacts	Land Use	Combined Social Performance
Social Performance								

Source: Mott MacDonald

[9] http://www.eirgridgroup.com/site-files/library/EirGrid/EirGridEquineReview.pdf

6.4.6 Deliverability Performance - Option C

6.4.6.1 Implementation Timelines

The construction of option C is expected to take approximately 37 months. This timeline is based on assumptions and installation rates as outlined in section 5.6.1. However, there is risk associated with potential for access constraints. Considering this risk and route length, option C is considered **moderate to high (blue)** risk for implementation timelines.

6.4.6.2 Project plan flexibility

For option C, there is a reasonable level of flexibility to identify an overhead line route within the corridor. However, once the route is designed within the corridor and the planning consent secured there would be very little flexibility at that stage. Option C is therefore considered to have a **moderate (dark green)** risk in terms of project plan flexibility.

6.4.6.3 Dependence on other projects

The proposed options do not have a dependence on other infrastructure projects and is therefore considered to be **low (yellow)** risk.

6.4.6.4 Permits and Wayleaves

As described in section 5.6.4, overhead lines can be difficult to achieve wayleaving and creates risk. Option C is therefore considered to be **high (dark blue)** risk in terms of permits and wayleaves.

6.4.6.5 Design Complexity

The overhead line corridor option C is generally rural-agricultural lands. This corridor option crosses the River Moy SAC five times with widths ranging from 100m to 250m approximately. The widths of the SACs are relatively short when compared to option B. For this reason, option C is considered to be **low to moderate (green)** risk for design complexity.

6.4.6.6 Combined Deliverability Performance

Taking the combined technical sub criteria into account, option C, results in a combined deliverability performance of **moderate to high (blue)** risk.

Table 6.20: Summary of Deliverability Performance - Option C

Option C	Implementation Timelines	Project plan flexibility	Dependence on other projects	Permits and Wayleaves	Design Complexity	Combined Deliverability Performance
Deliverability Performance						

Source: Mott MacDonald

6.4.7 Summary Option C

A summary of the risks associated with OHL corridor option C is provided in Table 6.21 below.

Table 6.21: Summary of Option C

Option C	Technical Performance	Economic Performance	Environmental Performance	Social Performance	Deliverability	Overall Performance
Performance						

Source: Mott MacDonald

6.5 OHL Corridor Option D (blue on map)

6.5.1 Description of OHL Corridor Option D

The overall length of Corridor Option D is approximately 55km. Corridor Option D is comprised initially of a common corridor with Corridor Option C until Corridor Option C crosses to the east bank of the River Moy where Corridor Option D diverges and turns due south, a distance of approximately 10km. Corridor Option D crosses the N26 approximately 1km east of Foxford and then travels in a south-east direction and runs approximately 3km south of Swinford, crossing the N5 as it does so. Corridor Option D then moves in an easterly direction and approaches Ballaghaderreen from the south-west partially merging with Corridor Options B and C on entering the urban area. The general topography of the corridor is undulating and extends over areas of bogland, agricultural use and woodland.

6.5.2 Technical Performance - Option D

6.5.2.1 System Reliability:

System reliability is based on the average failure statistics as outlined in section 5.2.1. The figures for overhead lines compare favourably with international statistics and for this reason, option D is considered to be **low (yellow)** risk in terms of system reliability.

6.5.2.2 Expansion / Extendibility:

For the reasons outlined in section 5.2.2, option D is considered to be **low (yellow)** risk for expansion / extendibility.

6.5.2.3 Repeatability:

For the reasons outlined in section 5.2.3, option D is considered to have a **low (yellow)** risk in terms of repeatability.

6.5.2.4 Technical Operational Risk:

For the reasons outlined in section 5.2.4, option D is considered to have a **low (yellow)** risk in terms of repeatability.

6.5.2.5 Combined Technical Performance

Taking the combined technical sub criteria into account, option D, results in a combined technical performance of **low (yellow)** risk.

Table 6.22: Summary of Technical Performance - Option D

Option D	System Reliability	Expansion / Extendibility	Repeatability	Technical Operational Risk	Combined Technical Performance
Technical Performance					

Source: Mott MacDonald

6.5.3 Economic Performance - Option D

The estimated implementation costs for option D have been developed in accordance with section 5.3. The estimated implementation costs for option D is €21.4m. See Table 6.23 below.

Table 6.23: Costs - Option D

Description	Cost (€m)
Overhead line	€ 18.6
Contingency 15%	€ 2.8
Total	€ 21.4

Source: Mott MacDonald

Comparing the cost to bands for economic assessment as outlined in Table 5.3 the cost for option D is in the range of €20m to €30m and is considered **low to moderate (green)** risk for economic performance.

Table 6.24: Summary of Economic Assessment - Option D

Option D	Project Implementation Costs
Economic Performance	

Source: Mott MacDonald

6.5.4 Environmental Performance – Option D

6.5.4.1 Biodiversity

Corridor option D intersects the River Moy SAC at three locations. In each case the width of the SAC may determine the OHL route:

- At Craggagh (south of Ballina): The width of the SAC in this area varies between approximately 20-200m.
- At Ballintemple: The width of the SAC ranges between 60-270m.
- At Bothaul: The width of the SAC ranges between 75-320m.

Habitats within the SAC at these three locations include localised fringing semi natural woodland along the main river channel which may require tree trimming, if not avoided. Further biodiversity surveys would be required in particular at these locations.

Lough Muck is situated south of Shanwar. Bird surveys undertaken by MKO at the lake recorded mallard, little grebe and cormorant recorded using the lake. Lough Muck is used occasionally by small numbers of Whooper Swan and Mute Swan. Further surveys will be required to establish any flights paths to the lake.

Shammer Lough is located centrally in the corridor in the townland of Shammerbaun. Surveys at the lake undertaken by MKO recorded a number of whooper swan and mute swan. Additional surveys to establish flight paths of the swan species and/or inform mitigation requirements (potentially including bird flight diverters) would be required.

Based on the above Corridor Option D is assigned a **low-moderate (green)** risk in terms of biodiversity.

6.5.4.2 Surface Water

Corridor Option D crosses 29 watercourses, and there are 6 lakes within the corridor. The corridor crosses the following watercourses within the River Moy SAC:

- The Yellow [Foxford] at Craggagh (south of Ballina). A high WFD status is assigned at this location.

- The River Moy at Ballintemple. A good WFD status is assigned at this location.
- The Spaddagh at Bothaul. A good WFD status is assigned at this location.

Lough Muck is located in the corridor south of Shanwar and extends approximately two thirds of the way across the corridor at this location. The area within the corridor adjacent to the lough is potential Annex 1 wet heath and blanket bog habitat.

There are no public supply source protection areas (GSI) or EPA Public Water Supply Protection Areas within Corridor Option D.

For the OHL corridor options, the evaluation is made taking account of the anticipated proximity of pole sets and steel angle towers to watercourses. For option D, there is a reasonable level of flexibility to identify an overhead line route within the corridor, whereby groundworks are not anticipated in proximity to the watercourses.

Due to the width of the corridor, and the flexibility that overhead lines afford with respect to watercourse crossings, option D is considered to have a **low-medium (green)** risk with respect to potential impacts on watercourses.

6.5.4.3 Ground Conditions

Land cover as described in the Corine Land cover dataset within the corridor is predominantly pasture with smaller areas of coniferous forest, land principally occupied by agriculture with significant areas of natural vegetation, peat bog and transitional woodland-shrub. There are substantial areas of peat bog spanning the corridor at a number of locations along the route. This occurs in the following areas: near Lismorane, northwest of Knockbrack, in the townlands of Barcull, Egool and Derrynacross. Peat bog comprises approximately 18.1% of the corridor.

There is an area of bedrock outcrop surrounding Shanwar Lake within the corridor. This is also an area of high aquifer vulnerability. A large quarry is centrally located within the corridor in Craggagh. There is another large quarry extending approximately halfway across the corridor near Roosky.There is also significant bedrock outcrop north of this area near Bunny Finglas. This area in an area of high aquifer vulnerability. An additional area of predominantly high aquifer vulnerability extends west of the N17 to Tonroe.

Corridor option D is considered **moderate (dark green)** risk in terms of ground conditions.

6.5.4.4 Material Assets

There are three national road crossings associated with corridor option B: the N26 east of Foxford, the N5 southwest of Swinford, and the N17 at Glentafraun. Corridor option C intersects the study area for the N17 Tobercurry To Knock Bypass at Glentafraun. It also intersects the study area for the N5 N26 N58 Castlebar Bohola east of Foxford.

Corridor option D is assigned a **low (yellow)** risk with respect to material assets.

6.5.4.5 Land Cover

Land cover is predominantly pasture and pasture interspersed with natural vegetation. The corridor is characterised by sheep or beef farms comprising smaller than average field sizes. There is a small area of land held in commonage south of Shanwar Lough. In addition, there are areas of peatlands (which appear to be non-commercial), and small areas of commercial forestry within the corridor.

With regard to the above, corridor option D is assigned a **low-medium (green)** risk with respect to land cover.

6.5.4.6 Landscape and Visual

Corridor Option D traverses both landscape policy areas 3 and 4 of the Mayo County Council Development Plan. The Mayo County Council Development Plans Landscape Sensitivity Matrix considers the impact of power lines on these policy areas to be medium to high with regards policy area 4 and to be high impact for policy area 3.

Mayo County Councils Foxford Way and Shanwar / Belgarrow Looped Walks cross the corridor a number of times along a length of circa 4.5km of this corridor at its most westerly point. There is a highly scenic viewpoint according to the Mayo County Development plan directly within the corridor in the townland of Cuillonaghtan. This area offers scenic views of Lough Muck, contained within corridor D, and both Callow Lough Lower and Upper. There is a further Scenic Viewpoint (not considered *highly* scenic however) further east along this corridor in the townland of Gowlaun.

For the reasons outlined above, corridor D is considered **moderate to high (blue)** risk in terms of Landscape and Visual.

6.5.4.7 Archaeological, Architectural and Cultural Heritage

There are 136 SMR sites and 1 NIAH within corridor D. Many of the features that are found are souterrain, ringforth-rath, fulacht fia, enclosures. See details below:

- The sites are generally scattered along the corridor. There are no SMR sites located for approximately 17km from the townland of Faheens westwards to the townland of Carrownlacka;
- There is a cluster of sites located at the border of Brackloon and Faheens. There are nine listed structures which are all classified as Fulacht Fia;
- Within the townland of Ballintemple there is a church (MA03055) and associated graveyard (MA03056); and
- An enclosure is located adjacent to the N25.

Regard has been given to opportunity to avoid works within or in close proximity to the SMR sites within corridor D. A **low-moderate score (green)** is assigned due to the anticipated changes as a result of overhead lines to the character of the surrounding environment of the heritage sites.

6.5.4.8 Noise

Effects of overhead line on the noise environment will be temporary in nature during the construction phase.

Corridor option D is located in a quiet rural environment, characterised by one off rural dwellings along the local road network. There are 778 buildings with an address within the corridor, of which the majority are residential (only 4 properties categorised as solely commercial). Corridor option D is located approximately 1km south of Knock Airport at it's closest point.

Corridor option D is therefore considered **low (yellow)** risk in terms of noise.

6.5.4.9 Combined Environmental Performance

Taking the combined environmental sub criteria into account, option D, results in a combined environmental performance of **low-moderate (green)** risk.

Table 6.25: Summary of Environmental Performance – OHL Corridor Option D

Option D	Biodiversity	Surface Water	Ground Conditions	Material Assets	Land Cover	Landscape & Visual	Cultural Heritage	Noise	Combined Environmental Performance
Environmental Performance									

Source: Mott MacDonald

6.5.5 Social Performance Option D

6.5.5.1 Settlements

Corridor option D leaves the River Moy Area running southwards and eventually east of the town of Foxford. It continues along the southern section of the study area and avoids all major settlements before approaching Ballaghaderreen town from its western side. The corridor is predominantly characterised by one off rural dwellings along a network of mostly secondary roads. There are a total of 778 buildings with an address within the catchment of the approximately 1km wide corridor. The vast majority of these addresses are residential with only 4 properties categorised as solely commercial.

Considering the above this corridor option is considered **moderate risk (dark green)** in terms of settlements.

6.5.5.2 Communities

According to the CSO Small Area Population Statistics dataset (SAPS) corridor D is characterised as having a low density of population based on the 2016 census data. The average household size along the corridor is 1.9 to 2.5 people per household. This is below the national average of 2.75 people per household. There is also a higher than average age profile throughout the corridor. The Electoral Districts (EDs) within the corridor fall within the top two categories for average age, having an average population age of either 40.1 to 42.5 years or 42.6 to 51.7 years. The average age nationally in 2016 was 37.4 years.

The community within corridor D is a rural one containing farm holdings of predominantly beef or sheep farms, or a mixture of both. According to a 2018 Teagasc survey of the average size of enclosed agricultural fields by townland in Ireland this part of the country contains smaller than average field sizes. Generally lower than average field sizes are an indicator of lower intensity agricultural practices. There are pockets of commercial forestry interspersed throughout corridor D with a circa 10km stretch of the corridor north of Kilkelly town and south of Knock Airport particularly characterised by a large number of commercial forests. There are also peatlands throughout the corridor which largely appear to be operated non-commercially. They comprise for the most part individual turf banks for home fuel consumption or cutaway bog.

With regard to the above Option D is considered **moderate (dark green)** risk in terms of settlements and communities.

6.5.5.3 Recreation and Tourism

Corridor option D covers an area of Counties Mayo and Roscommon south of the major town of Ballina. Ballina is a town included in Fáilte Irelands defined tourist route known as the Wild Atlantic Way but it has a much greater focus on freshwater fishing tourism than activities connected to the Atlantic Ocean. This part of Ireland is internationally recognised as being a

prime salmon fishing destination. The River Moy, Lough Conn and their surrounding network of lakes and rivers are an important tourist resource for the region. The River Moy, which is connected to Lough Conn, passes through the northern section of corridor D. At the northern half of the corridor lies a number of smaller lakes such as Lough Muck, and Callow Lough Upper and Lower which all encompass part of the wider network of coarse fishing options in this area.

Part of the Foxford Way walking route passes through the corridor. There is a looped walk known as the Callow Loop within the corridor at Cuillonaghtan townland. There are two clusters of designated scenic views at the south and north of the corridor focused around two groupings of lakes.

Corridor Option D is considered to be a **moderate (dark green)** risk for recreation and tourism considering the presence of a number of walking routes and lakes within the corridor.

6.5.5.4 Cultural Resources and sense of place

The cultural resources and sense of place as outlined in section 6.2.5.4 in relation to corridor A is equally applicable to all four overhead line corridors

It is in the above context, with particular regard to the emotive issue surrounding ownership and rights over land, that it is deemed the affect of an OHL on the cultural resources and sense of place is **moderate-high risk (blue)**.

6.5.5.5 Nuisance

As emphasised under section 6.5.5.1 (Settlements) corridor option D has a low density of housing dispersed across the landscape. With appropriate routing of an overhead line within the corridor noise impacts on local residential properties during the construction phase will be a low risk concern.

However, accessibility throughout the corridor is mostly from narrow secondary roads and therefore road closures and traffic disruptions may impact on local residents during a construction phase. An appropriate traffic management plan would be designed to minimise this impact. Any plan should ensure it facilitates farming operations such as the movement of machinery and livestock in the area which should thus reduce traffic nuisance. As noted already corridor D contains a mix of sheep and / or beef farms. The impacts may be more pronounced during lambing and / or calving season if livestock access to certain lands is restricted

There is evidence of active turf banks throughout the corridor and access and egress to these banks in the months of March to May when turf cutting operations are generally at their most active may cause some nuisance that will need to be mitigated. In many of these rural dwellings turf may be the sole source of fuel.

It is considered that nuisance during the construction phase will be a **low – moderate risk (green)** as long as appropriate mitigation measures are in place.

6.5.5.6 Visual Impacts

This section focuses on the visual impacts across the wider corridor without special regard to the officially designated views and routes within the relevant County Development Plans which are covered in section 6.5.4.6. The area surrounding Lough Muck contains a number of scenic views and includes the highest point within the corridor measuring 154 metres above sea level in the townland of Belcarrow. There are also a number of scenic views on the southern end of

the corridor north of the town of Kilkelly. These areas of the corridor may be most sensitive from a visual perspective to the installation of overhead lines.

The remainder of the corridor is low-lying with buildings sparsely dispersed throughout. There are many pockets of commercial forestry throughout the corridor offering potential screening from the visual impact of an overhead line.

Having regard to the above it is considered that the visual impact from overhead lines within corridor D is **moderate (dark green)**.

6.5.5.7 Land Use

As described in section 6.5.5.1 (Settlements) Corridor D is a predominantly rural location consisting of a mix of pasture lands, peat bogs and forestry. An OHL will result in permanent above ground structures along with a restricted corridor either side of the OHL. Thus limitations will be placed on the current and future landuse of land holdings over which an OHL is to be installed. Areas already planted in forestry will be felled where necessary whilst limitations will be placed on future afforestation as a land use option.

In addition to forestry there is a considerable amount of peatlands throughout the corridor. The routing of overhead lines through these peatlands and cutaway bog may impact and limit any future rehabilitation or reclamation of these areas. The rehabilitation of bogland ordinarily requires the blocking of drains and rewetting of the land which may be incompatible with OHL structures and associated access requirements.

The impact from overhead lines in terms of landuse within corridor D is considered **moderate-high (blue)** taking into account the above factors.

6.5.5.8 Community Benefits

6.5.5.9 Combined Social Performance

Taking the combined social performance sub criteria into account, option A, results in a combined social performance of **moderate-high risk (blue)**.

Table 6.26: Summary of Social Performance – OHL Corridor Option D

Option D	Settlements	Communities	Recreation and Tourism	Cultural Resources & Sense of Place	Nuisance	Visual Impacts	Land Use	Combined Social Performance
Social Performance								

Source: Mott MacDonald

6.5.6 Deliverability Performance - Option D

6.5.6.1 Implementation Timelines

The construction of option D is expected to take approximately 37 months. This timeline is based on assumptions and installation rates as outlined in section 5.6.1. However, there is risk associated with potential for access constraints. Considering this risk and route length, option D is considered moderate to **high (blue)** risk for implementation timelines.

6.5.6.2 Project plan flexibility

For option D, there is a reasonable level of flexibility to identify an overhead line route within the corridor. However, once the route is designed within the corridor and the planning consent secured there would be very little flexibility at that stage. Option D is therefore considered to have a **moderate (dark green)** risk in terms of project plan flexibility.

6.5.6.3 Dependence on other projects

The proposed options do not have a dependence on other infrastructure projects and is therefore considered to be **low (yellow)** risk.

6.5.6.4 Permits and Wayleaves

As described in section 5.6.4, for overhead lines it can be difficult to obtain wayleaves and this creates risk. Option D is therefore considered to be **high (dark blue)** risk in terms of permits and wayleaves.

6.5.6.5 Design Complexity

The overhead line corridor option D is generally rural-agricultural lands. This corridor option crosses the River Moy SAC three times with widths ranging from 100m to 300m approximately. The widths of the SACs are relatively short when compared to option B.

There is, however, significantly more dwellings within this corridor option compared to the other options. In particular dwellings are observed at potential angle locations where the corridor changes direction. This increases the risk of identifying a suitable overhead line route. For this reason, option D is considered to be **moderate - high (blue)** risk for design complexity.

6.5.6.6 Combined Deliverability Performance

Taking the combined technical sub criteria into account, option D, results in a combined deliverability performance of **moderate to high (blue)** risk.

Table 6.27: Summary of Deliverability Performance - Option D

Option D	Implementation Timelines	Project plan flexibility	Dependence on other projects	Permits and Wayleaves	Design Complexity	Combined Deliverability Performance
Deliverability Performance						

Source: Mott MacDonald

6.5.7 Summary Option D

A summary of the risks associated with OHL corridor option D is provided in Table 6.28 below.

Table 6.28: Summary of Option D

Option D	Technical Performance	Economic Performance	Environmental Performance	Social Performance	Deliverability	Overall Performance
Performance						

Source: Mott MacDonald

6.6 Evaluation Matrix (Overhead Line)

Table 6.29 below summarises the evaluation of the OHL corridor options.

Table 6.29: Multicriteria Assessment

Source: Mott MacDonald

Criteria	Option A	Option B	Option C	Option D
Technical Performance				
Economic Performance				
Environmental Performance				
Social Performance				
Deliverability				
Overall Performance				

Based on the evaluations undertaken in sections 6.2 to 6.5 of this report, and as summarised in Table 6.29 (Multicriteria Assessment), option D is the emerging BPO for OHL technology.

The technical, economic, social performance and deliverability criteria are not key differentiators with respect to the four OHL corridor options. Under Environmental Performance Option D performs better than the other OHL options. Option D performs better than options A and C due to the presence of potential Annex 1 habitat which spans the corridors within corridor options A and C. Option D performs better than option B under environmental performance due to the complexity of the crossing of the River Moy SAC at Dromada, for option B. The SAC is approximately 400-500m wide across the corridor at this location. Option D is therefore identified as the EBPO for OHL technology.

7 Evaluation of Underground Cable Corridor Options

7.1 Introduction

This section provides an assessment of each underground cable route corridor option against the five criteria, and their sub-criteria as described in Chapter 4.

7.2 UGC Corridor Option 1 (orange on map)

7.2.1 Description of UGC Corridor Option 1

This corridor originates at Moy substation to the west of Ballina, Co. Mayo and proceeds south along the public road (L1109) continuing in a southward direction along the N59. As the N59 approaches Ballina in an east-west direction, the corridor option 1 turns south on the third-class road network before turning east just south of Ballina to join up with the N26. Route Option 1 crosses the Irish Rail train track immediately before joining the N26.

Once on the N26 this corridor option 1 runs south along the N26 to Foxford. After Foxford, option 1 heads east on the N26 and re-joins the third-class road network via Noorey Park and runs eastward through Coolagagh, Coolegraine and Bokeen. This option runs south-east along this road network towards Drumalooaun. option 1 thereafter runs in a south-west direction to Swinford.

After Swinford option 1 heads east on the third-class road network to the south of the N5 (along which Route option 2 runs) and crosses the N17 south of Charlestown. After crossing the N17, Route option 1 travels east then south-east along the third-class road network to the south of the N5 until it comes to Ballaghaderreen, Co. Roscommon where Tonroe substation is located. It is estimated that option 1 runs for a distance of circa 64km from Moy substation to Tonroe substation.

7.2.2 Technical Performance - Option 1

7.2.2.1 System Reliability:

System reliability is based on the average failure statistics as outlined in section 5.2.1. The figures for UGC's are less favourable when compared with international statistics and for this reason, option 1 is considered to be **moderate (Dark Green)** risk in terms of system reliability.

7.2.2.2 Expansion / Extendibility:

For the reasons outlined in section 5.2.2, option 1 is considered to be **moderate (dark green)** risk for expansion / extendibility.

7.2.2.3 Repeatability:

For the reasons outlined in section 5.2.3, option 1 is considered to have a **moderate (dark green)** risk in terms of repeatability.

7.2.2.4 Technical Operational Risk:

For the reasons outlined in section 5.2.4, option 1 is considered to have a low to **low – moderate (green)** risk in terms of repeatability.

7.2.2.5 Combined Technical Performance

Taking the combined technical sub criteria into account, option 1, results in a combined technical performance of **moderate (dark green)** risk.

Table 7.1: Summary of Technical Performance - Option 1

Option 1	System Reliability	Expansion / Extendibility	Repeatability	Technical Operational Risk	Combined Technical Performance
Technical Performance					

Source: Mott MacDonald

7.2.3 Economic Performance - Option 1

The estimated implementation costs for option 1 have been developed in accordance with section 5.3. The estimated implementation costs for option 1 is €59.3m. See Table 7.2 below.

Table 7.2: Costs - Option 1

Description	Cost (€m)
Underground cable	€ 50.3
Shunt Reactors	€ 1.3
Contingency 15%	€ 7.7
Total	€ 59.3

Source: Mott MacDonald

Comparing the cost to bands for economic assessment as outlined in Table 5.3, the cost for option 1 is in the range of €50m to €60m and is considered **high (dark blue)** risk for economic performance.

Table 7.3: Summary of Economic Assessment - Option 1

Option 1	Project Implementation Costs
Economic Performance	

Source: Mott MacDonald

7.2.4 Environmental Performance – Option 1

7.2.4.1 Biodiversity

There are two crossings of the River Moy SAC associated with corridor option 1: at Foxford, and at Drumaloouan. Semi natural woodland fringes the main river crossing at Drumalooaun and can be avoided using HDD. Both crossings are bridge crossings of the River Moy within the SAC. A number of the bridges along the corridor may not be suitable to accommodate the cable, and alternative options such as HDD may be required. The bridge over the River Moy at Foxford has been identified as unsuitable for cable.

Open cut trenching may be required across smaller streams within the corridor. All watercourses crossed by the corridor have connectivity to the River Moy SAC. Many of these

streams will be spawning and nursery areas for Atlantic Salmon (*Salmo salar*) a sensitive qualifying aquatic species of the River Moy SAC. Any works within watercourses will be limited seasonally to mitigate impacts.

The road (N26) is located immediately adjacent to the River Moy SAC for a distance of approximately 500m at Drumrevagh.

There are areas of native woodland, fen and bog located immediately adjacent to the road at a number of locations along the route. These which may be impacted by drainage or direct habitat loss for joint bays/ laydown areas etc including.

- Bog at Shraheen townland (coordinates: 526021, 808180)
- Fen and ponds at Bushfield townland (coordinates: 545445, 799276)
- Native woodland Townlands Coolagagh (coordinates: 530207, 805747) (coordinates:528059, 804761)
- Grassland habitats potential Annex 1 habitat within the River Moy SAC (coordinates 524849, 811984) adjacent to the route would require more detailed site surveys.

MKO recorded large flocks of whooper swan (one flock of 63 and one flock of 21) in agricultural grassland located immediately easts of the road near Drumrevagh (coordinates: 524876, 812091).

Based on the above option 1 was assigned a **moderate-high (blue)** risk in terms of Biodiversity, mainly due to multiple stream crossings linked to the River Moy SAC.

7.2.4.2 Surface Water

The route requires the crossing of 35 watercourses, all of which have connectivity to Natural 2000 sites (the River Moy SAC).

There are six bridges that have been identified on the N26 that are along the option 1 route. Generally, these bridges are masonry arch with insufficient deck space to install cable ducts. As such, HDD would be required off-road for each of these crossings which may impact the cable rating. In particular, the bridge over the River Moy at Foxford has been identified as having insufficient deck space to install cable ducts and will require HDD or a stand-alone cable bridge to facilitate the crossing of the River Moy. This crossing is within the River Moy SAC. No information on the bridge crossing the River Moy at Drumalooaun, also within the SAC, has been received to date, however it can be reasonably expected that HDD would also be required for this crossing. In addition, in-stream works in smaller streams along the route, may be required.

Lough Marl is located adjacent to the road at Tiranniny. There is a Tufa spring to the east of the lake. Killaturly Lough is situated south of the road at Killaturly. The road crosses the Sonnagh [Moy] Riverat Stripe/Kileen. The Sonnagh has poor status at this location and flows into the River Moy SAC just north of this location.

Based on OPW flood mapping (www.floodinfo.ie), there are a number of areas where the extent of flooded land for a low probability flood event (1 in 1000) is within the corridor. This occurs at Drumrevagh, Rathbane (where it extends across the N26), and in Belass on the approach into Foxford.

Having regard to the above, option 1 is assigned a **moderate to high (blue)** risk in terms of surface water.

7.2.4.3 Ground Conditions

Option 1 passes through areas of pasture with smaller areas of coniferous forest, transitional woodland scrub and peat bog. There are substantial areas of peat bog spanning the corridor at a number of locations along the route. This occurs at the following locations: Tiranniny and Rubble, Loobnamuck, Kilaturly, Cloonierin.

There is a regionally important aquifer (karstified) associated with Dinantian Pure Bedded Limestones in the northern section of the route (north of Rathbane), and in the Swinford area. Most of option 1 is in an area of high aquifer vulnerability, with a substantial area of extreme aquifer vulnerability in the Coolcronan area. There are karst features (Kilaturley Source/swallow holes) on the northern and southern sides of the road east of Swinford. The Swinford public water supply scheme and the Killaturly group water scheme is located in this area to the south of the road. The Swinford public water supply scheme is supplied from a single spring in the townand of Kilbride: the Killaturly group water scheme is supplied from two springs in the area.

There are two large quarries on the northern side of the road at Craggagh and one south of the road at Coolagagh.

Having regard to the above, option 1 is considered to be **moderate (dark green)** risk in terms of ground conditions.

7.2.4.4 Material Assets

Option 1 follows the existing road network, the N59, the N26 and the third-class road network and thus has associated anticipated effect on services, road closures etc. Option 1 crosses the Irish Rail train track at Cloonturk, which will require careful management and planning. HDD could be used to facilitate the crossing. The total length of the route is approximately 64km.

Analysis completed indicates that the length of anticipated road closure necessitating diversions for option 1 is 42.1km, the length of anticipated single lane operation is 12.6km, and the length of anticipated local carriageway closure while maintaining 2-way traffic is 4km (N26) for option 1.

Option 1 intersects the proposed N26/N59 Ballina Bypass at two locations, west, and south-west of Ballina respectively. Option 1 intersects the N26 Swinford to Mount Falcon Road Project between Ballina and Foxford.

On entry to Moy substation there is an existing Medium Voltage (MV) cable which runs parallel to the proposed route. The MV cable may require relocating to allow sufficient space for the new 110 kV cable.

The route passes the towns of Foxford, Swinford and Ballaghaderreen. It is likely that a cable route will encounter obstacles such as Low Voltage (LV) underground cables, water services and possibly gas services in these urban areas. Such obstacles may present challenges and increase the complexity of the design at these locations.

Option 1 is considered to be **moderate (dark green)** risk in terms of material assets.

7.2.4.5 Land Cover

Land cover along option 1 is predominantly small pasture fields, associated one-off dwellings and patches of wooded areas adjacent to the road. It passes the Gurteen Industrial estate west of Ballina, and a stables at Knockleagha. The rail crossing at Cloonturk is within an area of ‘discontinuous urban fabric’ (Corine dataset). There are areas of peatlands, and forestry south

of Rathbane, and a number of housing estates associated with the town of Foxford. East of Foxford option 1 deviates from the N26 onto a narrow local road; there are two quarries and a graveyard close to the road in this area. There are pockets of commercial forestry along the route, most notably at Tiraninny, Carrowbeg/Loobnamuck, Glenmullynaha West and Boghtaduff.

Having regard to the above, option 1 is assigned **moderate (dark green)** risk in terms of land cover.

7.2.4.6 Landscape and Visual

Option 1 traverses Mayo County Council Landscape Policy Areas 3 and 4. These policy areas are considered to carry medium to low potential for adverse impacts in terms of road projects. There is a risk for potential minor visual impacts if the cable cannot be accommodated within existing bridges along the route. Given the non-intrusive visual nature of an UGC the risk to landscape and visual is considered **low (yellow)**.

7.2.4.7 Archaeological, Architectural and Cultural Heritage

The archaeological, architectural and cultural heritage criterion examines the impact of the UGC on the National Inventory of Architectural Heritage and the Sites and Monuments Records within the vicinity of the UGC's.

There are 110 number of recorded archaeological sites (SMR sites) and 3 no. NIAH's within the within a 250m buffer of the corridor. This does not include recorded sites within the towns of Foxford, Swinford and Ballaghaderreen where the route is not indicated.

In addition, there are 14 NIAH's within Foxford, one of which is the bridge over the River Moy in the centre of the town (NIAH Reg. No. 31206002). The bridge is also listed as a Heritage Bridge by Mayo County Council and is recognised as an important component of civil engineering heritage of Co. Mayo.

Corridor 1 passes through Swinford also which has approximately 8 NIAH's within close proximity to the main street and bridge street roads through the town.

Recorded cultural heritage features of note within close proximity to the corridor are listed below:

- Ringfort (MA039-052001-) and souterrain (MA039-052001-) at Ballynaraha townland and a second ringfort at Drumrevagh townland in wooded area adjacent to the road;
- Metalworking site (MA039-107002-) and Penitential station (MA039-101001-) on eastern side of road adjacent to River Moy in the townland of Tonybaun;
- Burial ground in the townland of Tonybaun which is very close to the road;
- A children's burial ground located east of the corridor at Sraheen (MA02360---);
- Craggagh Cemetery outside Foxford north of wooded area;
- Burial ground and a cemetery adjacent to the road on a bend at Church Park;
- Burial ground (MA049-078001-) and Megalithic tomb (MA049-083--) at Coolagagh; and
- Church (MA063-050001-) and graveyard (MA063-05002-) in the townland of Temple close to the road on a sharp bend.

There is increased potential to encounter or encroach on protected structures at narrow sections of the road and bridge crossings and as a result the above factors result in a **moderate (dark green)** risk in terms protected structures.

7.2.4.8 Noise

Effects of UGC's on noise will be temporary in nature during the construction phase.

Option 1 avoids Ballina, the largest town in the study area with an urban population in excess of 10,000. It passes through the towns of Foxford and Swinford and approaches the centre of Ballaghaderreen town. Outside of the towns, option 1 passes through a quiet rural environment, and is approximately 9km longer than the other two options.

Option 1 is located approximately 2km north of Knock Airport at its closest point.

There is a total of 737 addresses along the route excluding the yet undetermined routes through the towns. It passes adjacent to St Joseph's National School at Rathnaconeen, and St Attacta's Nursing Home at Charlestown.

Having regard to the above, option 1 is assigned a **moderate (dark green)** risk with respect to noise.

7.2.4.9 Combined Environmental Performance

Taking the combined environmental sub criteria into account, UGC option 1, results in a combined environmental performance of **moderate (dark green)** risk.

Table 7.4: Summary of Environmental Performance – UGC Option 1

Biodiversity	Surface Water	Ground Conditions	Material Assets	Land Cover	Landscape & Visual	Cultural Heritage	Noise	Combined Environmental Performance

Source: Mott MacDonald

7.2.5 Social Performance

7.2.5.1 Settlements

Option 1 exits Moy substation onto the N59 west of Ballina. It leaves the N59 road onto a series of secondary roads before connecting to the N26 south of Ballina. By following this network of secondary roads, it manages to avoid the major settlement of Ballina.

The route then follows the N26 south into the town of Foxford and passes through the town via an as yet determined route. Upon exiting Foxford the route follows a network of secondary routes north of the main N26 road before entering Swinford from the north along a secondary road. It passes through the town of Swinford along a yet to be determined route before exiting onto a network of secondary roads south of the main N5 road. It enters Ballaghaderreen from the west of the town.

Option 1 is the longest of the 3 options at circa 64km which reflects its less direct route along a greater number of secondary routes.

Considering the route avoids Ballina but impacts on Foxford, Swinford, Ballaghaderreen and a greater number of rural areas off the main roads, option 1 is considered to be a **moderate** risk **(dark green)** in terms of settlements.

7.2.5.2 Communities

Option 1 avoids Ballina which is the largest town in the study area with an urban population of 10,000 plus people. Whilst it avoids Ballina it does impact on the town of Foxford, with an urban population of 1,300, and Swinford with an urban population 1,400. It approaches the centre of Ballaghaderreen town which has an urban population of 1,800 people.

There are a total of 737 addresses along the route excluding the undetermined routes through the towns. Whilst option 1 does avoid Ballina it is 9km longer that the other two options as it meanders along a less direct route through the surrounding rural population.

With regard to the above option 2 is considered a **moderate (dark green)** risk in terms of communities.

7.2.5.3 Recreation and Tourism

As previously outlined in section 6 the area encompassing the North Connacht study area is noted for its freshwater fishing resources and in particular as a Salmon fishing destination. In addition to fishing the rich history and culture of the area is a common theme in the tourism resources of the region. Option 1 passes through the town of Foxford which is noted as a destination for traditional Irish music enthusiasts. It hosts a festival titled “Traditional Weekend” every October which is described as a cultural weekend of music, song, and dance.

Foxford also houses the Admiral Brown Centre in the middle of the town. This is a small museum commemorating Admiral William Brown (1777-1857) who was the founder of the Argentine Navy. Brown was born in Foxford and he is regarded as one of the major figures of Argentine history. There is also a statue in the town dedicated to his memory. Foxford Woollen Mills is an important business located in the town. It has a long history in Foxford and whilst it’s a fully operational mill today it offers tours of the factory exploring the history of the factory and milling techniques passed down through generations. Foxford is also the focal point for much of the walking routes in the surrounding landscape. The Foxford way begins and ends in the town of Foxford. As such the town acts somewhat as a gateway to the wider surrounding region.

As option 1 exits Foxford along a secondary road north of the main N26 road it passes by Hennigans Heritage Centre. This centre is accessed off the option 2 road in the townland of Rubble north of Swinford. It is a heritage centre focused on farming practices in the region from prehistoric times, to landed estates through to the present. It attracts tour groups and is an important attraction in the region.

Option 1 also passes through the town of Swinford. The town is home to the East Mayo Anglers club and there are local guides based in the town who offer fishing tours in the area. Swinford plays host to the Siamsa Sráide festival which translates to “fun in the street” every August. It is a five day festival and the largest summer festival in Mayo. Swinford Indoor Country Market is an organisation of local producers in the community who host a monthly indoor market. The market includes a variety of stalls selling hand-crafted items and local food produce. Swinford Golf Club is located to the south of the town and is an important local recreation resource. Swinford tidy towns have constructed a park called The Procession of the Souls within the town which is dedicated to the history of the great famine in Swinford.

Option 1 follows through the centre of Ballaghaderreen town where there are a number of local pubs in the town.

Whilst option 1 does avoid the largest town of Ballina it does impact Foxford which has an important role within the region as a tourist destination. The major impacts from an UGC on recreation and tourism will be temporary in nature during the construction phase. Considering

this, and with regard to the above outlined tourism and recreation resources along the route, option 1 is considered to be a **moderate (dark green)** risk.

7.2.5.4 Cultural Resources and sense of place

The cultural resources and sense of place as outlined in section 6.2.5.4, in relation to overhead line corridor A, is equally applicable to the three underground cable options within the study area.

It is in the context set out in section 6.2.5.4 that the installation of an UGC along corridor option 1 may affect farm holdings where passing bays are located or in narrow stretches of the road where additional land take will be necessary. However, the affect will be less than that of an overhead line. It is deemed that the impact of this UGC in terms of cultural resources and sense of place is **low-moderate (green).**

7.2.5.5 Nuisance

The installation of an UGC will bring nuisance to a community during the construction phase in the form of noise and traffic disruptions and / or road closures.

Route Option 1 avoids the large town of Ballina thus avoiding disruption to the business and residential community within that town. Option 1 passes through the towns of Foxford and Swinford. These are medium sized towns with a number of community and business facilities potentially impacted from noise and traffic disruptions. Both towns contain a national and primary school. Blackrock nursing home is located in the town of Foxford and both towns contain health centres and community centres. There are parks and playground facilities in both towns. Each town can be considered the business district catering to the wider surrounding population and as such will be particularly sensitive to traffic disruptions and road closures.

Option 1 takes a less direct approach through the study area and follows a network of secondary roads for much of the route. These roads are narrower and will likely require a greater amount of road closures than option 2 which follows the main roads for much of that route. This will impact on farming activities such as the movement of machinery or livestock and may be particularly impacted during lambing and / or calving season.

Outside of the towns impacted there are two primary schools along the route. Saint Josephs primary school in Rehis located south of Ballina and Brusna national school in boghtaduff are both directly off route 1. There is also Saint Attractas nursing home in Treanacally which may be particularly sensitive to noise disruption. Route 1 approaches Ballagahdereen from the west of the town potentially passing a primary school and Youthreach centre located along convent road in the town.

With regard to the above option 1 is considered to be a **moderate-high (blue)** risk in terms of nuisance.

7.2.5.6 Visual Impacts

This section focuses on the visual impacts across the wider corridor without special regard to the officially designated views and routes within the relevant County Development Plans which are covered in section 7.2.4.6. It is anticipated that there will be minor visual changes arising from an UGC installation along the proposed route of option 1. This will come in the form of the removal of walls, trees, hedges, and vegetation along the route. The impact may be most experienced along the narrower secondary network of roads, a good deal of which form part of route 1. However, where possible the removal of trees and walls will be reinstated and where

not possible the visual impact will be minor in comparison to an overhead line. Option 1 is therefore considered to be a **low-moderate (green)** impact in terms of visual impacts.

7.2.5.7 Land Use

The installation of an UGC will primarily impact the public roadway and widening of the roads may be required in parts. Where this widening comes in the form of passing bays their location can be designed in such a way as to minimise impacts. There are sections of route 1 where commercial forestry bounds up to the road. In Coolcronaun and Sraheen townlands for instance there is a circa 2km stretch of forestry either side of the road. Land use may be impacted in such a situation should trees need to be felled and / or additional landtake is required.

With regard to the above option 1 is considered to be a **low (yellow)** risk in terms of impacts on land use.

7.2.5.8 Combined Social Performance

Taking the combined social performance sub criteria into account, option 1, results in a combined social performance of **moderate** risk (**dark green).**

Table 7.5: Summary of Social Performance – UGC Corridor Option 1

Option 1	Settlements	Communities	Recreation and Tourism	Cultural Resources & Sense of Place	Nuisance	Visual Impacts	Land Use	Combined Social Performance
Social Performance								

Source: Mott MacDonald

7.2.6 Deliverability Performance - Option 1

7.2.6.1 Implementation Timelines

The construction of option 1 is expected to take approximately 28 months. This timeline is based on assumptions and installation rates as outlined in section 5.6.1. However, there are risks associated with crossing obstacles, ground investigations and traffic management. Considering these risks, option 1 is considered **moderate to high (blue)** risk for implementation timelines.

7.2.6.2 Project plan flexibility

For option 1, there is a reasonable level of flexibility to identify an underground cable route. However, once the route is designed and the planning consent secured there would be very little flexibility at that stage. Option 1 is therefore considered to have a **moderate (dark green)** risk in terms of project plan flexibility.

7.2.6.3 Dependence on other projects

The proposed options do not have a dependence on other infrastructure projects and is therefore considered to be **low (yellow)** risk.

7.2.6.4 Permits and Wayleaves

For the reasons outlined in section 5.6.4, option 1 is considered to have a **moderate (dark green)** risk in terms of permits and wayleaves.

7.2.6.5 Design Complexity

The N26 from Ballina to Foxford has sufficient width to locate a cable route however sections of the road have been identified as bog rampart construction which increases the risk of ground instability during construction.

The route requires the crossing of 35 watercourses. Six bridges have been identified on the N26 that are along the option 1 route. Generally, these bridges are masonry arch with insufficient deck space to install cable ducts. As such, HDD would be required off-road for each of these crossings which may impact the cable rating.

In particular, Foxford Bridge is a significant crossing of the River Moy with a span of approximately 55m. The bridge has existing services such as lighting, Low Voltage (LV) cable, water supply pipeline and telephone services installed in-situ. These services coupled with insufficient deck space to install cable ducts with HDD to facilitate the crossing of the River Moy.

A further 8 bridges were identified along the route during field surveys. No information has been received to date on these bridges, but it can be reasonably expected that a number of these crossings will have insufficient deck space to install the cable ducts. As such, HDD would be required off-road for each of these crossings. One of these bridges is located at Drumalooaun and crosses the river Moy with a span of approximately 30m.

The route requires the crossing of an Irish Rail train track at Cloonturk. This will require careful management and planning. HDD could be used to facilitate the crossing, but this may impact the cable rating. Should this route become the Emerging Best Performing Option discussions will be required with Iarnród Éireann to agree a solution.

In the area of Loobnamuck the road network is narrow with an average width of 2m which increases the risk for installation of joint bays within the road network and for heavy plant (5t axel loading) movement during construction.

Generally, the minimum bending radius of 6m for duct installation can be accommodated along the route. Where the 6m bending radius cannot be achieved this will require cutting the corner, or alternatively, micro-routing cross-country.

On entry to Moy substation there is an existing Medium Voltage (MV) cable which runs parallel to the proposed route. The MV cable may require relocating to allow sufficient space for the new 110 kV cable.

The route passes the towns of Foxford, Swinford and Ballaghaderreen. It is likely that a cable route will encounter obstacles such as Low Voltage (LV) underground cables, water services and possibly gas services in these urban areas. Such obstacles may present challenges and increase the complexity of the design at these locations.

For these reasons, option 1 is considered to be **moderate to high (blue)** risk for design complexity.

7.2.6.6 Combined Deliverability Performance

Taking the combined technical sub criteria into account, option 1, results in a combined deliverability performance of moderate to **high (blue)** risk.

Table 7.6: Summary of Deliverability Performance - Option 1

Option 1	Implementation Timelines	Project plan flexibility	Dependence on other projects	Permits and Wayleaves	Design Complexity	Combined Deliverability Performance
Deliverability Performance						

Source: Mott MacDonald

7.2.7 Summary Option 1

Table 7.7: Summary of Option 1

Option 1	Technical Performance	Economic Performance	Environmental Performance	Social Performance	Deliverability	Overall Performance
Performance						

Source: Mott MacDonald

7.3 UGC Corridor Option 2 (blue on map)

7.3.1 Description of UGC Corridor Option 2

Route option 2 has a common commencement as Route option 1 from Moy substation but stays on the N59 and does not veer south before Ballina like Route option 1. Route option 2 is marked as indicative through the urban area of Ballina and then continues in a south-east direction along Church Road. Route option 2 then runs south along the third-class road network with the River Moy to the west of Route option 2 and links up with the N26 to the east of Foxford. Apart from a slight deviation to the north of the N26 after Doonamona, Route option 2 follows the N26 to Swinford and thereafter the N5 to Ballaghaderreen departing from the N5 onto the L1244 to link up with Tonroe substation. It is estimated that Route option 2 runs for a distance of circa 55km from Moy substation to Tonroe substation.

7.3.2 Technical Performance - Option 2

7.3.2.1 System Reliability:

System reliability is based on the average failure statistics as outlined in section 5.2.1. The figures for underground cables are less favourable when compared with international statistics and for this reason, option 2 is considered to be **moderate (dark green)** risk in terms of system reliability.

7.3.2.2 Expansion / Extendibility:

For the reasons outlined in section 5.2.2, option 2 is considered to be **moderate (dark green)** risk for expansion / extendibility.

7.3.2.3 Repeatability:

For the reasons outlined in section 5.2.3, option 2 is considered to have a **moderate (dark green)** risk in terms of repeatability.

7.3.2.4 Technical Operational Risk:

For the reasons outlined in section 5.2.4, option 2 is considered to have a **low to moderate (green)** risk in terms of repeatability.

7.3.2.5 Combined Technical Performance

Taking the combined technical sub criteria into account, option 2, results in a combined technical performance of **moderate (dark green)** risk.

Table 7.8: Summary of Technical Performance - Option 2

Option 2	System Reliability	Expansion / Extendibility	Repeatability	Technical Operational Risk	Combined Technical Performance
Technical Performance					

Source: Mott MacDonald

7.3.3 Economic Performance - Option 2

The estimated implementation costs for option 2 have been developed in accordance with section 5.3. The estimated implementation costs for option 2 is €50.8m. See Table 7.9 below.

Table 7.9: Costs - Option 2

Description	Cost (€m)
Underground cable	€ 42.9
Shunt Reactors	€ 1.3
Contingency 15%	€ 6.6
Total	€ 50.8

Source: Mott MacDonald

Comparing the cost to bands for economic assessment as outlined in Table 5.3, the cost for option 2 is in the range of €50m to €60m and is considered **high (dark blue)** risk for economic performance.

Table 7.10: Summary of Economic Assessment - Option 2

Option 2	Project Implementation Costs
Economic Performance	

Source: Mott MacDonald

7.3.4 Environmental Performance – Option 2

7.3.4.1 Biodiversity

There are three crossings of the River Moy SAC associated with corridor option 2: at Ballina, Cloongullan and Boherhallagh. Habitat within the SAC boundary includes semi natural woodland fringe adjacent to the main river channel at some locations, which can be avoided typically using HDD method. A number of the bridges along the corridor may not be suitable to accommodate the cable, and alternative options such as HDD may be required. The bridges over the River Moy at Ballina and at Cloongullan require HDD to facilitate the crossing of the River Moy.

Open cut trenching may be required in smaller streams within the corridor. All watercourses crossed by the corridor have connectivity to the River Moy SAC. Many of these streams will be spawning and nursery areas for Atlantic Salmon (*Salmo salar*) a sensitive qualifying aquatic species of the River Moy SAC. Any works within watercourses will be limited seasonally to mitigate impacts.

In addition to the three crossings of the River Moy SAC, the following ecological constraints have been identified within corridor option 2:

- The River Moy SAC is located immediately west of the road in three locations (525727, 816073) (525785, 815809) and (525886, 815575).
- A large area of bog located immediately adjacent to the road (although it is likely to be cutover). Further surveys will be required.
- Lough Carrowkeribbly is located immediately east of the road (coordinates: 526426, 811603). The lough was surveyed by MKO; whilst no waterfowl were recorded at the lough though Whooper Swan (Annex 1 listed) and other wildfowl do use it.
- Both the River Moy SAC and the Moy Valley pNHA are located immediately adjacent of the road for approximately 700m (coordinates:526914, 809449).
- The River Moy SAC is located immediately east of the road (coordinates:529146, 806377).
- An area of native woodland is located immediately adjacent to either side of the road for 650m (coordinates: 530696, 804366) and (530925, 804223).
- Callow Lough is located ca. 30m south-west of the road (coordinates: 531729, 803726). MKO undertook surveys within the lough and recorded Mute swan, little grebe, heron. Potential for noise disturbance.
- Local Biodiversity Area (bog habitat) traverses across the road and spans ca. 330m along either side of the road (coordinates: 544962, 800351).
- Local Biodiversity Area (bog and less managed farmland habitat) either side of the road (coordinates:549588, 800983).

Based on the above Option 2 is assigned a **moderate-high (blue)** risk in terms of biodiversity mainly due to multiple stream crossings linked to the River Moy SAC.

7.3.4.2 Surface Water

The route requires the crossing of 22 watercourses, all of which have connectivity to Natural 2000 sites (the River Moy SAC). There are four bridges along the N26 that have insufficient deck space to install cable ducts. As such, HDD would be required off-road for each of these crossings. The bridge over the River Moy (within the SAC) at Cloongullan has been identified as a crossing required HDD. In addition, the crossing of the River Moy at Ballina is another significant crossing of the River Moy within the River Moy SAC. Both the Ballina upper bridge and lower bridge have insufficient deck space to install cable ducts and will require HDD to facilitate the crossing of the River Moy at Ballina.

Five bridges and eight culverts have been identified on the N5 that are along the option 2 route. These bridges are precast box culvert and may have sufficient deck space to install cable ducts. As built records will be required to confirm suitability for installation of cable ducts. Depending on the depth of the culverts it may be possible to cross above these obstacles, otherwise HDD would be required to facilitate the crossing.

In the area of Cloonygowan the road is narrow with an average width of 2m which increases the risk for off-road works. This section of the road intersects two watercourses (the Lough Muck Stream, and a tributary of the River Moy). Both have connectivity to the River Moy SAC. There is an opportunity to reroute the option 2 corridor along the N26 from Cloongullan to Callow so as to avoid the narrow road network of Cloonygowan.

Carrowkeribly Lough is situated adjacent to the N26 north of Bunny Finglas. The N26 passes to the north east of Callow Lakes which supplies water to homes in the area.

Based on OPW flood mapping (www.floodinfo.ie), there are a number of areas where the extent of flooded land for a low probability flood event (1 in 1000) is within the corridor. This occurs at Cloonislaun, Cloongullaun, on the N26 on the approach to Swinford, and at Cloonlara exiting Swinford on the eastern side. In addition, there is an OPW Past Flood Events (recurring: Pavfield) recorded at Gortanure.

Having regard to the above, option 2 is assigned a **moderate to high (blue)** risk in terms of surface water.

7.3.4.3 Ground Conditions

Option 2 passes through areas of pasture with smaller areas of coniferous forest, transitional woodland scrub and peat bog. There are substantial areas of peat bog spanning the corridor along the route. The road passes through a large cutover bog at Breaffy, and at Curradrish.

Option 2 passes through a regionally important aquifer (karstified) associated with Dinantian Pure Bedded Limestones in the northern section of the route (north of Bunny Finglas) and in the Swinford area.

Option 2 passes through areas of high aquifer vulnerability, with an area of extreme aquifer vulnerability associated with Callow Lakes. Bedrock outcrop occurs in this area south east of Callow Lakes.

There is a large quarry straddling the road at Bunny Finglas, and a second one on the northern side of the road at Coolagagh.

Having regard to the above, option 2 is considered to be **moderate (dark green)** risk in terms of ground conditions.

7.3.4.4 Material Assets

Option 2 follows the existing road network, exiting Ballina along Church Rd where it uses the third-class road network to link up to the N26 to the east of Foxford. There is a short deviation off the N26 after Doonamona. Option 2 follows the N26 to Swinford and thereafter the N5 to Ballaghaderreen. The total length of the route is approximately 55km.

Analysis completed indicates that the length of anticipated road closure necessitating diversions for option 2 is 8.1km the length of anticipated single lane operation is 22.7km, and the length of anticipated local carriageway closure while maintaining 2-way traffic is 23km for option 2.

Option 2 intersects the proposed N26/N59 Ballina Bypass south-east of Ballina.Option 2 intersects the N26 Swinford to Mount Falcon Road Project for two stretches between Foxford and Swinford.

On entry to Moy substation there is an existing Medium Voltage (MV) cable which runs parallel to the proposed route. The MV cable may require relocating to allow sufficient space for the new 110 kV cable.

The route passes the towns of Ballina and Ballaghaderreen. It is likely that a cable route will encounter obstacles such as Low Voltage (LV) underground cables, water services and possibly gas services in these urban areas. Such obstacles may present challenges and increase the complexity of the design at these locations.

Option 2 is considered to be **moderate (dark green)** risk in terms of material assets.

7.3.4.5 Land Cover

Option 2 passes through the town of Ballina, the biggest settlement in the study area. On exiting Ballina along Church Road, it passes residential dwellings, and the Ballina Engineering Works. In general, land cover along option 2 is predominantly small pasture fields, associated one-off dwellings and patches of wooded areas adjacent to the road. It passes through two large bogs at Breaffy/Mullaghowney, and Curradrish. Option 2 deviates from the N26 at Callow and follows a local road. Here the road is narrow, and it passes through pasture fields mixed with natural vegetation, with trees adjacent to the road, and one-off dwellings. There is an area of commercial forestry along this road at Cloonygowan. There is an opportunity to reroute the option 2 corridor along the N26 from Cloongullan to Callow so as to avoid the narrow road network of Cloonygowan.

Option 2 passes through the town of Swinford, and a number of housing estates before joining the N5 at Cloonlara. It then follows the N5 to Cashelcolaun/Bohalas. Here the risk to land cover will be reduced due to the increased width of the road which is more suited to accommodating the cable. Option 2 passes through pasture and land principally occupied by agriculture with significant areas of natural vegetation along a local road between Bohalas and Ballaghaderreen.

There are pockets of commercial forestry along option 2, most notably at Callow and Cloongullaun,

Having regard to the above, the option 2 is assigned **low - moderate (green)** risk in terms of land cover.

7.3.4.6 Landscape and Visual

Option 2 traverses Mayo County Council Landscape Policy Areas 3 and 4. These policy areas are considered to carry medium to low potential for adverse impacts in terms of road projects. There is a risk for potential minor visual impacts if the cable cannot be accommodated within existing bridges along the route. Given the non-intrusive visual nature of an underground cable the risk to landscape and visual is considered **low (yellow)**.

7.3.4.7 Archaeological, Architectural and Cultural Heritage

There are 97 SMR sites and 4 NIAH's within a 250m buffer of corridor option 2. This excludes the recorded sites within the towns of Ballina, Ballaghaderreen, and Swinford where the route corridor is not indicated.

In Ballina, the Upper and Lower bridges across the River Moy are NIAHs (Reg no. 31204104 and 31204105), as well as a salmon weir downstream and in the vicinity of the bridges (Reg no. 31204103).

Protected structures and features of note (which are indicated adjacent to the road) along corridor 2 are listed below:

- Enclosure (MA049-077---) in wooded area close to the road in the townland of Coollagagh
- Enclosure (Ma061-020---) at Callow Lakes (between the road and the lakes)
- Mound (MA061-107----) and a handball alley (NIAH Reg no. 31306105) close to the River Moy crossing at Cloongullaun.

The rail crossing at Swinford is a protected structure (Mayo County Council) and an NIAH (Reg no. 31207021).

Having regard to the above, and the fact that option 2 follows the N5 between Swinford and Ballaghaderreen where road widths are wider, and there will be less necessity for off-road sections, option 2 results in a **low-moderate (green)** in terms of archaeology, architecture and cultural heritage.

7.3.4.8 Noise

Effects of underground cable on noise will be temporary in nature during the construction phase.

Option 2 passes through Ballina, the largest town in the study area with a population in excess of 10,000. Option 2 avoids the town of Foxford, but passes through the town of Swinford, and then Ballaghaderreen town. Outside of Swinford, the section of the option 2 between Ballina and Swinford passes through a generally quiet rural environment. Between Swinford and Ballaghaderreen, option 2 utilises the N5, an environment most likely dominated by traffic noise from the road.

There are a total of 455 addresses along the route excluding the as yet undetermined routes through the town. This is considerably lower than the other two routes and may be a reflection of the route following more of the national road network where planning permission for housing off the road is more restrictive.

With regards to the above option 2 is considered **low-moderate (green)** risk in terms of noise.

7.3.4.9 Combined Environmental Performance

Taking the combined environmental sub criteria into account, UGC option 2, results in a combined environmental performance of **moderate (dark green)** risk.

Table 7.11: Summary of Environmental Performance – UGC Option 2

Biodiversity	Surface Water	Ground Conditions	Material Assets	Land Cover	Landscape & Visual	Cultural Heritage	Noise	Combined Environmental Performance

Source: Mott MacDonald

7.3.5 Social Performance

7.3.5.1 Settlements

Option 2 exits Ballina from the south of the town along a secondary road that joins up with the N26 circa 2km east of Foxford, thus avoiding this town entirely. It does pass through the settlement of Swinford via a currently undetermined route. It exits Swinford onto the N5 which follows south of the town of Charlestown. It exits the N5 onto a secondary road approaching the centre of Ballaghaderreen town. Option 2 runs for a distance of circa 55km in length.

Considering the route avoids Foxford but impacts Ballina, Swinford and Ballaghaderreen option 2 is considered to be a **moderate** risk **(dark green)** in terms of settlements.

7.3.5.2 Communities

Option 2 will pass though the large town of Ballina. Ballina has an urban population of 10,000 plus people and is by far the largest town in the study area. Whilst the route does avoid the town of Foxford it passes through the town of Swinford with a population of 1,400 people. It approaches the centre of Ballaghaderreen town which has a population of 1,800.

There are a total of 455 addresses along the route excluding the undetermined routes through the towns. This is considerably lower than the other two routes and may be a reflection of the route following more of the national road network where planning permission for housing off the road is more restrictive.

With regard to the above option 2 is considered a **moderate (dark green)** risk in terms of communities.

7.3.5.3 Recreation and Tourism

As previously outlined in section 6 the area encompassing the North Connacht study area is noted for its freshwater fishing resources and in particular as a Salmon fishing destination. Option 2 passes through Ballina which has a particular focus on salmon fishing when it comes to tourism. Ballina hosts a summer and winter festival every year in July and December. The summer festival is titled the Ballina Salmon Festival whilst the winter festival is titled the Frosty Salmon festival.

Ballina is by far the biggest town in the region and the important in terms of tourism. There is a wide range of accommodation on offer in the town ranging from 4 star hotels to bed and breakfast accommodation. There are also many hotels and pubs within the town. Ballina Arts Centre is an important cultural resource for the region hosting music and theatre events and exhibitions. Ballina is the focal point for tourism in the wider region.

Option 2 avoids the town of Foxford as it exits Ballina south towards the town of Swinford. This town is home to the East Mayo Anglers club and there are local guides based in the town who offer fishing tours in the area. Swinford plays host to the Siamsa Sráide festival every August. It is a five day festival and the largest summer festival in Mayo. Swinford Indoor Country Market is an organisation of local producers in the community who host a monthly indoor market. The market includes a variety of stalls selling hand-crafted items and local food produce. Swinford Golf Club is located to the south of the town and is an important local recreation resource. Swinford tidy towns have constructed a park called The Procession of the Souls within the town which is dedicated to the history of the great famine in Swinford.

Option 2 follows through the centre of Ballaghaderreen town where there are a number of local pubs in the town.

Option 2 avoids impacting on Foxford which is an important tourist gateway to the wider region and walking routes of the area as outlined in section 7.2.5.3. The major impacts from an underground cable on recreation and tourism will be temporary in nature during the construction phase. Considering this, and with regard to the above outlined tourism and recreation resources along the route, option 2 is considered to be a **moderate (dark green)** risk.

7.3.5.4 Cultural Resources and Sense of Place

The cultural resources and sense of place as outlined in section 6.2.5.4, in relation to overhead line corridor A, is equally applicable to the three underground cable options within the study area.

It is in the context set out in section 6.2.5.4 that the installation of an UGC along corridor option 2 may affect farm holdings where passing bays are located or in narrow stretches of the road where additional land take will be necessary. However, the affect will be less than that of an overhead line. It is deemed that the impact of this UGC in terms of cultural resources and sense of place is **low-moderate (green).**

7.3.5.5 Nuisance

The installation of an underground cable will bring nuisance to a community during the construction phase in the form of noise and traffic disruptions and / or road closures. Option 2 passes thorough Ballina, the largest town in the study area. Ballina can be considered the central business district for the wider community in this part of Connacht. It is where a lot of the population in the surrounding area work, shop and socialise and it is also the focal point for tourism in the area. There are a number of community facilities such as parks, playgrounds, libraries, community centres, sports facilities, and health centres within the town. Ballina contains three primary schools, three secondary schools and one special education school, all of which may be sensitive to noise and traffic disruption.

Option 2 avoids the town of Foxford but passes through Swinford via a currently undetermined route. Swinford is a medium sized town containing a national and primary school along with community facilities and businesses serving the wider population.

Whilst road closures will be anticipated along route 2 their frequency should be less than with option 1 and 3 due to the route traversing more of the national road network where road widths are greater.

Option 2 approaches the centre of Ballaghaderreen town. Ballagahdereen contains a primary school, secondary school, and a youth reach centre. Oakwood nursing home is located to the south of the town whilst there is a health centre, public playgrounds and parks and community centres throughout the town.

With regard to the above option 2 is considered to be a **moderate-high (blue)** risk in terms of nuisance.

7.3.5.6 Visual Impacts

This section focuses on the visual impacts across the wider corridor without special regard to the officially designated views and routes within the relevant County Development Plans which are covered in section 7.3.4.6. It is anticipated that there will be minor visual changes arising from an underground cable installation along the proposed route of option 2. This will come in the form of the removal of walls, trees, hedges, and vegetation along the route. The impact may be most experienced along the narrower secondary network of roads. However, the majority of option 2 follows along the national network of roads where visual impacts will be lessened. Where possible the removal of trees and walls will be reinstated and where not possible the visual impact will be minor in comparison to an overhead line.

With regard to the above option 2 is therefore considered to be a **low (yellow)** impact in terms of visual impacts.

7.3.5.7 Land Use

The installation of an underground cable will primarily impact the public roadway and widening of the road may be required in parts. Where this widening comes in the form of passing bays their location can be designed in such a way as to minimise impacts. There are sections of route 2 where commercial forestry bounds up to the road. Forestry at Cloongullaun and Lagcurragh townlands is an example of this. Landuse may be impacted in such a situation should trees need to be felled and / or additional land take is required.

With regard to the above option 2 is considered to be a **low (yellow)** risk in terms of impacts on land use..

7.3.5.8 Combined Social Performance

Taking the combined social performance sub criteria into account, option 2, results in a combined social performance of **moderate** risk **(dark green)**.

Table 7.12: Summary of Social Performance – UGC Option 2

Option 2	Settlements	Communities	Recreation and Tourism	Cultural Resources & Sense of Place	Nuisance	Visual Impacts	Land Use	Combined Social Performance
Social Performance								

Source: Mott MacDonald

7.3.6 Deliverability Performance - Option 2

7.3.6.1 Implementation Timelines

The construction of option 2 is expected to take approximately 24 months. This timeline is based on assumptions and installation rates as outlined in section 5.6.1. However, there are risks associated with crossing obstacles, ground investigations and traffic management. Considering these risks, option 2 is considered **moderate (dark green)** risk for implementation timelines.

7.3.6.2 Project plan flexibility

For option 2, there is a reasonable level of flexibility to identify an UGC route. However, once the route is designed and the planning consent secured there would be very little flexibility at that stage. Option 2 is therefore considered to have a **moderate (**Dark Green**)** risk in terms of project plan flexibility.

7.3.6.3 Dependence on other projects

The proposed options do not have a dependence on other infrastructure projects and is therefore considered to be **low (yellow)** risk.

7.3.6.4 Permits and Wayleaves

For the reasons outlined in section 5.6.4, option 2 is considered to have a **moderate (dark green)** risk in terms of permits and wayleaves.

7.3.6.5 Design Complexity

The route partially runs along sections of the N5 and the N26 and both have sufficient width to locate a cable route. The majority of the N5 section has a hard shoulder which provides good opportunity for a cable route.

The route requires the crossing of 22 watercourses. Four bridges have been identified on the N26 that are along the option 2 route. Generally, these bridges are masonry arch with insufficient deck space to install cable ducts. As such, HDD would be required off-road for each of these crossings which may impact the cable rating.

Five bridges and eight culverts have been identified on the N5 that are along the option 2 route. These bridges are precast box culvert and may have sufficient deck space to install cable ducts.

As built records will be required to confirm suitability for installation of cable ducts. Depending on the depth of the culverts it may be possible to cross above these obstacles, otherwise HDD would be required to facilitate the crossing.

In particular, Cloongullan Bridge is a significant crossing of the River Moy with a span of approximately 42m. The bridge has insufficient deck space to install cable ducts and will require HDD to facilitate the crossing of the River Moy.

This route will require the crossing of the River Moy near Ballina which is another significant crossing of the River Moy with a span of approximately 55m. Both the Ballina Upper Bridge and lower bridge have insufficient deck space to install cable ducts and will require HDD to facilitate the crossing of the River Moy at Ballina or at a location outside of Ballina.

In the area of Cloonygowan the road network is narrow with an average width of 2m which increases the risk for installation of joint bays within the road network and for heavy plant (5t axel loading) movement during construction. There is an opportunity to reroute the option 2 corridor along the N26 from Cloongullan to Callow so as to avoid the narrow road network of Cloonygowan.

Generally, the minimum bending radius of 6m for duct installation can be accommodated along the route. Where the 6m bending radius cannot be achieved this will require cutting the corner, or alternatively, micro-routing cross-country.

At Carrowcushlaun West a 38 kV cable crosses the route. It is not expected to be difficult to achieve crossing this service.

On entry to Moy substation there is an existing Medium Voltage (MV) cable which runs parallel to the proposed route. The MV cable may require relocating to allow sufficient space for the new 110 kV cable.

The route passes the towns of Ballina and Ballaghaderreen. It is likely that a cable route will encounter obstacles such as Low Voltage (LV) underground cables, water services and possibly gas services in these urban areas. Such obstacles may present challenges and increase the complexity of the design at these locations.

For these reasons, option 2 is considered to be **moderate (dark green)** risk for design complexity.

7.3.6.6 Combined Deliverability Performance

Taking the combined technical sub criteria into account, option 2, results in a combined deliverability performance of **moderate (dark green)** risk.

Table 7.13: Summary of Deliverability Performance - Option 2

Option 2	Implementation Timelines	Project plan flexibility	Dependence on other projects	Permits and Wayleaves	Design Complexity	Combined Deliverability Performance
Deliverability Performance						

Source: Mott MacDonald

7.3.7 Summary Option 2

Table 7.14: Summary of Option 2

Option 2	Technical Performance	Economic Performance	Environmental Performance	Social Performance	Deliverability	Overall Performance
Performance						

Source: Mott MacDonald

7.4 UGC Corridor Option 3 (purple on map)

7.4.1 Description of UGC Corridor Option 3

Corridor option 3 has the same starting route at Moy substation as corridor options 1 and 2 and like corridor option 2 it runs east through Ballina and over the River Moy. After Ballina Route option 3 travels due east along the R294 towards Lough Talt. The corridor then departs from the R294 at Mullany's Cross and runs south-east to Toorlestraun and Treankeel and crosses the River Moy, an SAC. Corridor option 3 continues to run in a south-east direction and crosses over the N17 north of Charlestown and continues using the third-class road network until the corridor crosses over the N5 north-west of Ballaghaderreen and thence to Tonroe substation. It is estimated that corridor option 3 runs for a distance of circa 55km from Moy substation to Tonroe substation.

7.4.2 Technical Performance - Option 3

7.4.2.1 System Reliability:

System reliability is based on the average failure statistics as outlined in section 5.2.1. The figures for UGC's are less favourable when compared with international statistics and for this reason, option 3 is considered to be **moderate (dark green)** risk in terms of system reliability.

7.4.2.2 Expansion / Extendibility:

For the reasons outlined in section 5.2.2, option 3 is considered to be **moderate (dark green)** risk for expansion / extendibility.

7.4.2.3 Repeatability:

For the reasons outlined in section 5.2.3, option 3 is considered to have a **moderate (dark green)** risk in terms of repeatability.

7.4.2.4 Technical Operational Risk:

For the reasons outlined in section 5.2.4, option 3 is considered to have a **low to moderate (green)** risk in terms of repeatability.

7.4.2.5 Combined Technical Performance

Taking the combined technical sub criteria into account, option 3, results in a combined technical performance of **moderate (dark green)** risk.

Table 7.15: Summary of Technical Performance - Option 3

Option 3	System Reliability	Expansion / Extendibility	Repeatability	Technical Operational Risk	Combined Technical Performance
Technical Performance					

Source: Mott MacDonald

7.4.3 Economic Performance - Option 3

The estimated implementation costs for option 3 have been developed in accordance with section 5.3. The estimated implementation costs for option 3 is €50.3m. See Table 7.16 below.

Table 7.16: Costs - Option 3

Description	Cost (€m)
Underground cable	€ 42.4
Shunt Reactors	€ 1.3
Contingency 15%	€ 6.6
Total	€ 50.3

Source: Mott MacDonald

Comparing the cost to bands for economic assessment as outlined in Table 5.3, the cost for option 3 is in the range of €50m to €60m and is considered **high (dark blue)** risk for economic performance.

Table 7.17: Summary of Economic Assessment - Option 3

Option 2	Project Implementation Costs
Economic Performance	

Source: Mott MacDonald

7.4.4 Environmental Performance – Option 3

7.4.4.1 Biodiversity

There are five crossings of the River Moy SAC associated with corridor option 3: at Ballina, Banada, Rathmagurry, Botinny and Lismulgee. A number of the bridges along the corridor may not be suitable to accommodate the cable, and alternative options such as HDD. The bridges at both Ballina and Banada have been identified as unsuitable for cable. Habitat within the SAC boundary includes semi natural woodland fringe adjacent to the main river channel at some locations, which can be avoided typically using HDD method.

Open cut trenching may be required across smaller streams within the corridor. All watercourses crossed by the corridor have connectivity to the River Moy SAC. Many of these streams will be spawning and nursery areas for Atlantic Salmon (*Salmo salar*) a sensitive qualifying aquatic species of the River Moy SAC. Any works within watercourses will be limited seasonally to mitigate impacts.

The Lough Hoe Bog SAC is located immediately south of the road at Lough Talt. Lough Talt is located immediately south of the road and this area with surrounding upland bog and heath habitat will present a very constrained works location during construction. MKO undertook surveys of the lake and recorded mute swan, mallard, little grebe and cormorant. Grey whorl snail (*Vertigo geyeri*) and alkaline fen habitat are qualifying interest features of Lough Hoe Bog

SAC recorded at Lough Talt. There is potential that ground water (drainage) impacts to impact these qualifying interests.

In addition to the above, the following ecological constraints were identified within the corridor:

- The River Moy SAC is located immediately north of the road for approximately 1.7km in the Shanaghy, Rathklip and Behy Beg areas.
- There is an area of wet grassland located immediately north of the road (coordinates: 535220, 818112) (source: Semi-natural grassland survey, 2013). The grassland comprises dry-humid acid grassland and wet grassland and includes small areas of Annex I species rich *Nardus* grassland. Detailed surveys may be required of this habitat including potential for Marsh fritillary.
- Potential Annex I wet heath and blanket bog located directly adjacent on either side of the road in the Drumsheen townlane (coordinates: 536517, 817648). Detailed surveys may be required of this habitat.
- River Moy SAC located immediately south of the road (coordinates: 540766, 814047).
- Japanese knotweed identified growing adjacent to the road (546546, 810008).
- Ca. 2.3km of road is located within the Moy *Margaritifera* Sensitive Areas (2017)(ITM) (river catchment) While this catchment is not designated for this aquatic mollusc species water quality protection measures (mitigation) will require particular attention here given sensitivity of this species to water pollution and potential at this location for sloping grounds with peat and associated risk of silt/ peat runoff risk.
- Area of Annex I habitat 6410 Molina meadows located immediately adjacent to the road (coordinates: 550061, 806022) (source: Semi-natural grassland survey, 2013). Detailed surveys may be required of this habitat.

Based on the above option 3 is assigned a **moderate-high (blue)** risk in terms of biodiversity.

7.4.4.2 Surface Water

The route requires the crossing of 26 watercourses, all of which have connectivity to Natural 2000 sites (the River Moy SAC). It can be reasonably expected that a number of the bridge crossings along the R294 and the third-class road network will have insufficient deck space to install the cable ducts. As such, HDD would be required off-road for each of these crossings.

The bridge at Banada, in particular, is a significant crossing of the River Moy within the River Moy SAC. This bridge may require HDD or a stand-alone cable bridge. North of Banada the R294 crosses the River Moy at Annagh, where the width of the River Moy is reduced at this location and could provide a suitable alternative location to cross the River Moy. In addition, the crossing of the River Moy at Ballina is another significant crossing of the River Moy within the River Moy SAC. Both the Ballina upper bridge and lower bridge have insufficient deck space to install cable ducts and will require HDD or a stand-alone cable bridge to facilitate the crossing of the River Moy at Ballina.

Open cut trenching may be required across smaller streams within the corridor.

Lough Talt (within Lough Hoe Bog SAC) lies adjacent to the R294. According to data accessed from www.floodinfo.ie (accessed on 12 January 2021), there is a recurring flood event on the R294 at Lough Talt.

Based on OPW flood mapping (www.floodinfo.ie), the extent of flooded land for a low probability flood event (1 in 1000) is within the corridor at Shanaghy/Rathklip.

Having regard to the above, option 3 is assigned a **moderate to high (blue)** risk in terms of surface water.

7.4.4.3 Ground Conditions

Option 3 passes through areas of pasture and peat bog, with smaller areas of coniferous forest and transitional woodland scrub. There is a significant area of peat bog between Bonniconlon East and Lough Talt. The elevated terrain around Lough Talt is characterised by bedrock outcrop, and there are a number of recorded landslide events in this area. There is a Geological Heritage Area site (GSI) straddling the road north west of Lough Talt (The Gap). Additionally, the area around Lough Talt is an area of extreme aquifer vulnerability.

There are two areas of Regionally important aquifer (karstified), both of which are associated with the Dinantian Pure Bedded Limestones. One of these is the area from Ballina to Bonniconlon, and the other is at Gortermone. The area from Ballina to Bonniconlon is an area of high aquifer vulnerability There is an extensive area from Cloonmore to Derrynacross of Extreme/High aquifer vulnerability.

Having regard to the above, option 3 is considered to be **moderate – high (blue)** risk in terms of ground conditions.

7.4.4.4 Material Assets

Route option 3 follows the R296 from Ballina to Lough Talt, where it deviates from the R294 at Mullany's Cross onto the third-class road network. The total length of the route is approximately 55km.

Analysis completed indicates that the length of anticipated road closure necessitating diversions for option 3 is 28.5km and the length of anticipated single lane operation is 23km.

Option 3 intersects the proposed N26/N59 Ballina Bypass east of Ballina.

On entry to Moy substation there is an existing Medium Voltage (MV) cable which runs parallel to the proposed route. The MV cable may require relocating to allow sufficient space for the new 110 kV cable.

The route passes the town of Ballina. It is likely that a cable route will encounter obstacles such as Low Voltage (LV) underground cables, water services and possibly gas services in this urban area. Such obstacles may present challenges and increase the complexity of the design at these locations.

Option 3 is considered to be **moderate (dark green)** risk in terms of material assets.

7.4.4.5 Land Cover

Option 3 passes through the town of Ballina and follows the R294 regional road east out of Ballina into the settlement of Bonniconlon. It passes the Ballina Golf Course on the eastern side of Ballina. Land cover in this area is predominantly small pasture fields, and frequent one-off dwellings adjacent to the road. The R294 continues into the Ox Mountain range where there is a substantial amount of peatland, and the frequency of dwellings decrease. Here it passes adjacent to Lough Talt, where the route leaves the R294 heading south to the villages of Toorlestraun and Banada. It follows a series of secondary roads south through the settlement of Curry before entering Ballaghaderreen from the north.

There are pockets of commercial forestry along option 3, most notably at Cloonlumney.

The installation of an underground cable will impact upon landuse along route 3 where a widening of the road is necessary. Where this widening comes in the form of passing bays these can be designed in such a way as to minimise impacts. There is large amount of peatland along route 3 and in particular stretches of the route where both sides of the road form peatland. Any widening of the road in such locations may impact on these peatlands in terms of drainage and landuse and impede future rehabilitation or afforestation potential.

Having regard to the above, option 3 is assigned **moderate (dark green)** risk in terms of landcover.

7.4.4.6 Landscape and Visual

Option 3 traverses Mayo County Council Landscape Policy Areas 3 and 4. These policy areas are considered to carry medium to low potential for adverse impacts in terms of road projects. There is a risk for potential minor visual impacts if the cable cannot be accommodated within existing bridges along the route. Given the non-intrusive visual nature of an underground cable the risk to landscape and visual is considered **low (yellow)**.

7.4.4.7 Archaeological, Architectural and Cultural Heritage

There are 48 SMR sites and 13 NIAH's within the 250m buffer of corridor option 3. This does not include recorded sites within the towns of Ballina or Ballaghaderreen where the route is not indicated.

In Ballina, the Upper and Lower bridges across the River Moy are NIAHs (Reg no. 31204104 and 31204105), as well as a salmon weir in the vicinity of the bridges (Reg no. 31204103).

Option 3 passes adjacent to the Catholic Church of the Immaculate Heart of Mary adjacent to the R294 at Bonniconlon (NIAH), and St Attracta's Roman Catholic Church (RC) at Banada.

The bridge over the River Moy at Banada is listed as an NIAH (Reg No. 32,403,708) and an SMR (SL037-068007-). It is also a protected structure in the Mayo County Council Development Plan. In addition, there is a grouping of 5 SMR's adjacent to the River Moy close to the bridge crossing. These are described as a tomb, a graveyard, Religious house - Augustinian friars, a castle (unclassified), and a stone head. The Banada graveyard is also indicated in this location (NIAH Reg No. 32,403,706). There are an additional four NIAH's adjacent to the road in the village of Banada.

The following bridges along option 3 are listed as protected structures in the Mayo County Council Development Plan. These are the following:

- Behy bridge in townland of Behy Beg
- Carrolabaun Bridge in townland of Carrowlabaun
- An unnamed bridge in the townland of Carrowlabaun

Having regard to the above, the risk to archaeology, architecture and cultural heritage is considered **moderate to high (blue)**.

7.4.4.8 Noise

Effects of underground cable on noise will be temporary in nature during the construction phase.

Option 3 passes through a generally quiet rural environment, and avoids the major settlements within the study area other than Ballina and Ballaghaderreen. There is a total of 1,032 addresses along the route excluding the towns of Ballina and Ballaghaderreen. Option 3 passes

through the villages of Bonniconlon, Toorlestraun, Banada and Curry. There are four schools along option 3: Saint Joseph's National School in Bunniconlon, Castlenock National School, Curry National School, and Our Lady's National School in Banada.

With regards to the above option 3 is considered **moderate (dark green)** risk in terms of noise.

7.4.4.9 Combined Environmental Performance

Taking the combined environmental sub criteria into account, UGC Option 3, results in a combined environmental performance of **moderate - high (blue)** risk.

Table 7.18: Summary of Environmental Performance – UGC Option 3

Biodiversity	Surface Water	Ground Conditions	Material Assets	Land Cover	Landscape & Visual	Cultural Heritage	Noise	Combined Environmental Performance

Source: Mott MacDonald

7.4.5 Social Performance

7.4.5.1 Settlements

Option 3 begins in Moy substation and runs for an estimated length of 55km to Tonroe. Upon passing through the town via an as yet determined route option 3 follows the R294 regional road east out of Ballina into the settlement of Bonniconlon. From here it follows the same road through the Ox Mountain range at Lough Talt where it leaves the R294 heading south to the villages of Toorlestraun and Banada. It follows a series of secondary roads south through the settlement of Curry before entering Ballaghaderreen from the north.

The route avoids any of the major settlements along the northern half of the study area such as Charlestown. As the route enters Ballaghaderreen from the north side it avoids the centre of the town in order to reach Tonroe substation.

Whilst the route impacts the town of Ballina in order to connect to Moy substation it doesn't impact any other major settlements and approaches Ballaghaderreen from the Tonroe side of the town. Considering this option 3 is deemed to be a **low-moderate (green)** risk in terms of settlements.

7.4.5.2 Communities

As outlined option 3 avoids the major settlements within the study area other than Ballina and Ballaghderreen. The community along the route is a rural one consisting of one-off dwellings along the route. There is a total of 1,032 addresses along the route excluding the towns of Ballina and Ballaghaderreen. The villages along the route are Bonniconlon, Toorlestraun, Banada and Curry. According to the CSO Small Area Population statistics the combined population of the small area boundaries for these villages is less than 1,000. These are small villages serving the surrounding rural population of the area.

With regards to the above option 3 is considered **low-moderate (green)** risk in terms of settlements.

7.4.5.3 Recreation and Tourism

As previously outlined the area encompassing the North Connacht study area is noted for its freshwater fishing resources and in particular as a Salmon fishing destination. Option 3 passes through Ballina which has a particular focus on salmon fishing when it comes to tourism. Ballina hosts a summer and winter festival every year in July and December. The summer festival is titled the Ballina Salmon Festival whilst the winter festival is titled the Frosty Salmon festival.

Ballina is by far the biggest town in the region and the most important in terms of tourism. There is a wide range of accommodation on offer in the town ranging from 4 star hotels to bed and breakfast accommodation. There are also many hotels and pubs within the town. Ballina Arts Centre is an important cultural resource for the region hosting music and theatre events and exhibitions. Ballina is the focal point for tourism in the wider region.

Option 3 exits Ballina from the east along the R294 road where it runs adjacent to Ballina Golf club for circa 1km. It continues along this road into the village of Bonneconlan. This village plays host to the Bonniconlon Show every August. This is an agricultural show that attracts 30,000 people each year to the one-day event. It is the largest agricultural show in Connacht.

Option 3 continues towards the Ox Mountain Range and Lough Talt which are important tourist sites in the region. This section of the route along the R294 is the only public road through the mountain range in this area. The route continues through the towns of Toorlestraun, Banada and Curry. These three towns are located within County Sligo which historically has been known as Yeats County and which has developed into a tourist brand for the County of Sligo. The landscape in the area is said to have inspired many of the works of the Irish writer W.B Yeats. The Yeats County Inn is a hotel in the town of Curry located along this route.

The Irish West Bog Experience is a tourist attraction directly off route 3 in the townland of Lissymulgee. It offers both accommodation and demonstrations on the boglands, educating people in the ancient rural traditions of the region.

Whilst option 3 avoids any major settlements other than Ballina the route it takes is through a landscape that is important as a tourist resource in itself. Considering this, and with regard to the above outlined tourism and recreation resources along the route, option 3 is considered to be a **moderate (dark green)** risk.

7.4.5.4 Cultural Resources & Sense of Place

The cultural resources and sense of place as outlined in section 6.2.5.4, in relation to overhead line corridor A, is equally applicable to the three underground cable options within the study area.

It is in the context set out in section 6.2.5.4 that the installation of an UGC along corridor option 3 may affect farm holdings where passing bays are located or in narrow stretches of the road where additional land take will be necessary. However, the affect will be less than that of an overhead line. It is deemed that the impact of this UGC in terms of cultural resources and sense of place is **low-moderate (green).**

7.4.5.5 Nuisance

The installation of an UGC will bring nuisance to a community during the construction phase in the form of noise and traffic disruptions and / or road closures. Option 3 passes thorough Ballina, the largest town in the study area. Ballina can be considered the central business district for the wider community in this part of Connacht. It is where a lot of the population in the surrounding area work, shop and socialise and it is also the focal point for tourism in the area.

There are a number of community facilities such as parks, playgrounds, libraries, community centres, sports facilities, and health centres within the town. Ballina contains three primary schools, three secondary schools and one special education school, all of which may be sensitive to noise and traffic disruption.

Option 3 passes though the centre of Bonniconlon Village. This village contains a GAA pitch, two pubs, three shops and Saint Josephs primary school. It is an important village serving the wider community of Bonniconlon East and West townlands. The route continues along the R294 through a gap in the Ox Mountains. This is the only public road through this mountain range in this region and any road closure along this section of the R294 will mean particularly lengthy diversions.

Option 3 leaves the R294 in the direction of the villages of Toorlestraun, Banada and Curry along a network of secondary roads. Increased road closures may be anticipated along this part of the route due to narrower roads. This will impact on farming activities such as the movement of machinery or livestock and may be particularly impacted during lambing and / or calving season. The route goes through the centre of the above mentioned three villages. Whilst the population of these villages is quite low access to them from the surrounding population is important as they serve that wider communities needs in terms of services. There is a national school in both Banada and Curry off the route. Curry also contains a health centre.

Option 3 approaches Ballagahdereen from the north. Whilst the route through the town is yet to be determined option 3 is not likely to impact on the west of the town where there is a national school and youth reach centre.

Whilst option 3 avoids any major settlement other than Ballina its impact in terms of nuisance on the villages of Bonniconlon, Toorlestraun, Banada and Curry cannot be underestimated. It passes straight through the heart of these villages along narrow local roads where road closures can be anticipated. These villages serve a wider population in the region.

With regard to the above option 3 is considered to be a **moderate-high (blue)** risk in terms of nuisance.

7.4.5.6 Visual Impacts

This section focuses on the visual impacts across the wider corridor without special regard to the officially designated views and routes within the relevant County Development Plans which are covered in section 7.4.4.6. It is anticipated that there will be minor visual changes arising from an UGC installation along the proposed route of option 3. This will come in the form of the removal of walls, trees, hedges, and vegetation along the route. The impact may be most experienced along the narrower secondary network of roads, a good deal of which form part of route 3. However, where possible the removal of trees and walls will be reinstated and where not possible the visual impact will be minor in comparison to an overhead line.

With regard to the above option 3 is therefore considered to be a **low-moderate (green)** impact in terms of visual impacts.

7.4.5.7 Land Use

The installation of an UGC will primarily impact the public roadway and widening of the road may be required in parts. Where this widening comes in the form of passing bays their location can be designed in such a way as to minimise impacts. There is large amount of peatland along option 3 and in particular stretches of the route where both sides of the road form peatland. Any

widening of the road in such locations may impact on these peatlands in terms of drainage and landuse and impede future rehabilitation or afforestation potential.

With regard to the above option 3 is considered to be a **low (yellow)** risk in terms of impacts on land use.

7.4.5.8 Combined Social Performance

Taking the combined social performance sub criteria into account, option 3, results in a combined social performance of **moderate** risk **(dark green).**

Table 7.19: Summary of Social Performance – UGC Option 3

Option 3	Settlements	Communities	Recreation and Tourism	Cultural Resources & Sense of Place	Nuisance	Visual Impacts	Land Use	Combined Social Performance
Social Performance								

Source: Mott MacDonald

7.4.6 Deliverability Performance - Option 3

7.4.6.1 Implementation Timelines

The construction of option 3 is expected to take approximately 24 months. This timeline is based on assumptions and installation rates as outlined in section 5.6.1. However, there are risks associated with crossing obstacles, ground investigations and traffic management. Considering these risks, option 3 is considered **moderate (dark green)** risk for implementation timelines.

7.4.6.2 Project plan flexibility

For option 3, there is a reasonable level of flexibility to identify an underground cable route. However, once the route is designed and the planning consent secured there would be very little flexibility at that stage. Option 3 is therefore considered to have a **moderate (dark green)** risk in terms of project plan flexibility.

7.4.6.3 Dependence on other projects

The proposed options do not have a dependence on other infrastructure projects and is therefore considered to be **low (yellow)** risk.

7.4.6.4 Permits and Wayleaves

For the reasons outlined in section 5.6.4, option 3 is considered to have a **moderate (dark green)** risk in terms of permits and wayleaves.

7.4.6.5 Design Complexity

The majority of the route runs along the R294 and has sufficient width to locate a cable route. The route requires the crossing of 26 watercourses. Five bridges have been identified on the R294 that are along the option 3 route. No information has been received to date on these bridges, but it can be reasonably expected that a number of these crossings will have

insufficient deck space to install the cable ducts. As such, HDD would be required off-road for each of these crossings.

A further eight bridges have been identified along the third-class network. No information has been received to date on these bridges, but it can be reasonably expected that a number of these crossings will have insufficient deck space to install the cable ducts. As such, HDD would be required off-road for each of these crossings.

The bridge at Banada in particular is a significant crossing of the River Moy with a span of approximately 45m. This bridge may have insufficient deck space to install cable ducts and may require HDDto facilitate the crossing of the River Moy. North of Banada the R294 crosses the River Moy at Annagh. The width of the River Moy is reduced at this location and could provide a suitable alternative location to cross the River Moy.

The route also requires the crossing of the River Moy near Ballina which is another significant crossing with a span of approximately 55m. Both the Ballina upper bridge and lower bridge have insufficient deck space to install cable ducts and will require HDD to facilitate the crossing of the River Moy at Ballina.

Another significant crossing for this route is the N5 at Bockagh. Again, this bridge may have insufficient deck space to install cable ducts and may require HDD to facilitate the crossing of the N5.

Generally, the minimum bending radius of 6m for duct installation can be accommodated along the route. Where the 6m bending radius cannot be achieved this will require cutting the corner, or alternatively, micro-routing cross-country.

On entry to Moy substation there is an existing Medium Voltage (MV) cable which runs parallel to the proposed route. The MV cable may require relocating to allow sufficient space for the new 110 kV cable.

The route passes the town of Ballina. It is likely that a cable route will encounter obstacles such as Low Voltage (LV) underground cables, water services and possibly gas services in this urban area. Such obstacles may present challenges and increase the complexity of the design at these locations.

For these reasons, option C is considered to be **moderate (dark green)** risk for design complexity.

7.4.6.6 Combined Deliverability Performance

Taking the combined technical sub criteria into account, option 3, results in a combined deliverability performance of **moderate (dark green)** risk.

Table 7.20: Summary of Deliverability Performance - Option 3

Option 3	Implementation Timelines	Project plan flexibility	Dependence on other projects	Permits and Wayleaves	Design Complexity	Combined Deliverability Performance
Deliverability Performance						

Source: Mott MacDonald

7.4.7 Summary Option 3

A summary of the risks assigned to each criterion for option 3 is presented in Table 7.21 below.

Table 7.21: Summary of Option 3

Option 3	Technical Performance	Economic Performance	Environmental Performance	Social Performance	Deliverability	Overall Performance
Performance						

Source: Mott MacDonald

7.5 Evaluation Matrix (Underground Cable)

The multicriteria evaluation of the three UGC corridor options is presented in Figure 7.22 below.

Table 7.22: Multicriteria Assessment

Criteria	Option 1	Option 2	Option 3
Technical Performance			
Economic Performance			
Environmental Performance			
Social Performance			
Deliverability			
Overall Performance			

Source: Mott MacDonald

Based on the evaluations undertaken in sections 7.2 to 7.4 of this report, and as summarised in Table 7.22 (Multicriteria Assessment), option 2 is the emerging BPO for UGC technology. Option 2 performed better than options 1 and 3 under the Environmental Performance criterion, primarily because option 2 follows the existing N5 between Swinford and Ballaghaderreen where the increased width and standard of the road is better suited to accommodating the cable, resulting in less necessity to go off road with associated environmental risks.

Option 2 performed better than option 1 under the Economic Performance criterion, primarily due to option 2 being approximately 9km shorter. In addition, option 2 performed better than option 1 under the Deliverability Performance criterion due to increased design complexity and implementation timelines associated with option 1.

8 Emerging Best Performing Option

8.1 Introduction

The following sections set out the considerations that have led to the identification of an Emerging Best Performing (Corridor) Option (EBPO). These considerations are based on the information included in the preceding sections, much of which in turn has been derived from previously published information, as well as from public and stakeholder feedback during public consultation.

8.2 Emerging Best Performing Overhead Line

Based on the evaluations undertaken in sections 6.2 to 6.5 of this report, and as summarised in the summary matrix provided in Appendix D, corridor option D has been identified as the EBPO for OHL technology. A summary matrix for the OHL corridor options is provided in Table 8.1.

In terms of the technical, social and deliverability criteria, the OHL corridor options perform equally. Option D performs better than the other OHL options under Environmental Performance. Option D is therefore identified as the EBPO for OHL technology.

Table 8.1: Summary Matrix for OHL Corridor Options

Criteria	Option A	Option B	Option C	Option D
Technical Performance				
Economic Performance				
Environmental Performance				
Social Performance				
Deliverability				
Overall Performance				

8.3 Emerging Best Performing Underground Cable

Based on the evaluations undertaken in sections 7.2 to 7.4 of this report, and as summarised in the summary matrix provided in Appendix D, UGC option 2 has been identified as the EBPO for UGC technology. A summary matrix for the OHL corridor options is provided in Table 8.2.

Option 2 performed better than options 1 and 3 under the Environmental Performance criterion, primarily because option 2 follows the existing N5 between Swinford and Ballaghaderreen where the increased width and standard of the road is better suited to accommodating the cable, resulting in less necessity to go off road with associated environmental risks.

Option 2 performed better than option 1 under the Economic Performance criterion, primarily due to option 2 being approximately 9km shorter. In addition, option 2 performed better than option 1 under the Deliverability Performance criterion due to increased design complexity and implementation timelines associated with option 1.

Table 8.2: Summary Matrix for UGC Corridor Options

Criteria	Option 1	Option 2	Option 3
Technical Performance			
Economic Performance			
Environmental Performance			
Social Performance			
Deliverability			
Overall Performance			

8.4 Emerging Best Performing Option

Identification of the EBPO for both OHL and UGC technology has considered and balanced the five key criteria: technical, economic, environmental, social and deliverability.

The enhanced matrix for OHL and UGC corridor options (Appendix D) indicates reduced risks associated with UGC corridor options under the social performance criterion. This is informed by feedback from the public consultation process. All of the feedback gathered in that process has been holistically analsysed as part of Step 4B, and outlined in a separate report. In summary, of the respondents to the public consultation process, there was a strong preference for underground cable corridor options with 87% of respondents supporting this.

While the North Connacht 110 kV project is being developed to support renewable energy generation in the region primarily, it also serves to facilitate economic growth locally, in the form of new industry. As a result, EirGrid is aware of the need to expedite the delivery of this project and believe this can be best achieved if the project is delivered in the form of an underground cable.

In the context of the above, it is noted that there have been significant delays in the consenting and delivery of transmission overhead lines in Ireland in recent years, in particular in relation to the social acceptance of new grid infrastructure. As a result there is substantial uncertainty on the timeline to consent and deliver the project in the form of a 110 kV overhead line.

On the other hand, there are specific technical and environmental challenges associated with UGC technology. These challenges are outlined in detail in the comparative evaluation in chapter 7. However, appropriate technology (such as HDD for selected river crossings, and avoidance of important biodiversity features) allow these risks to be mitigated.

Having reviewed and considered the outcomes of the assessment process from a multi-criteria perspective, the EBPO UGC corridor option 2 has been identified as the overall EBPO for the North Connacht 110 kV project.

8.5 Next Steps

UGC Corridor option 2 has been identified as the EBPO and will be brought forward to the next stage of the project, Step 4C.

While UGC Corridor Option 2 has emerged as the preferred option, it remains challenging from a deliverability and social impact perspective as a result of its potential routing through various towns and in particular Ballina. In addition, option 2 proposes using substantial portions of the national road network, in particular sections of the N5 and N26. Discussions with key

stakeholders such as Transport Infrastructure Ireland and local authorities are ongoing and will continue over the coming months before we are able to confirm a specific route for the project.

In Ballina there may be temporary disruption to residential amenity, material assets and other services and will require a complex crossing of the River Moy. Such complexities and challenges can be addressed and overcome by additional routing assessments south of the town over the coming months. Therefore, additional consideration will be given to feasible options inside and outside the built up area of Ballina which will avoid significant disruption to the town. This may result in portions of UGC Corridor Option 1 being considered and incorporated into the Option 2 at Ballina and its environs. This is reflected in the mapping of the Emerging Best Performing Option presented in Appendix E.

As part of Step 4C, engagement with landowners within the EBPO, local authorities and other stakeholders will be undertaken in order to develop a number of potential feasible routes within the EBPO and utilising portions of the UGC Corridor Option 1 when considering options south of Ballina. These routes will explore potential locations for HDD crossings of the River Moy at Ballina and its environs, inside and outside the built up area and near Swinford, and will include off-road and on-road route sections. Route options will be developed taking cognisance of minimising temporary construction phase disruption to local communities, particularly in Ballina, Ballaghadereen and Swinford.

Feedback from consultation and engagement over the coming months will be considered and analysed in the development and assessment of route options.

Step 4 will conclude with a Step 4C report, confirming the Best Performing Technology and associated route for the North Connaught 110 kV project to be taken into Step 5 (Planning).

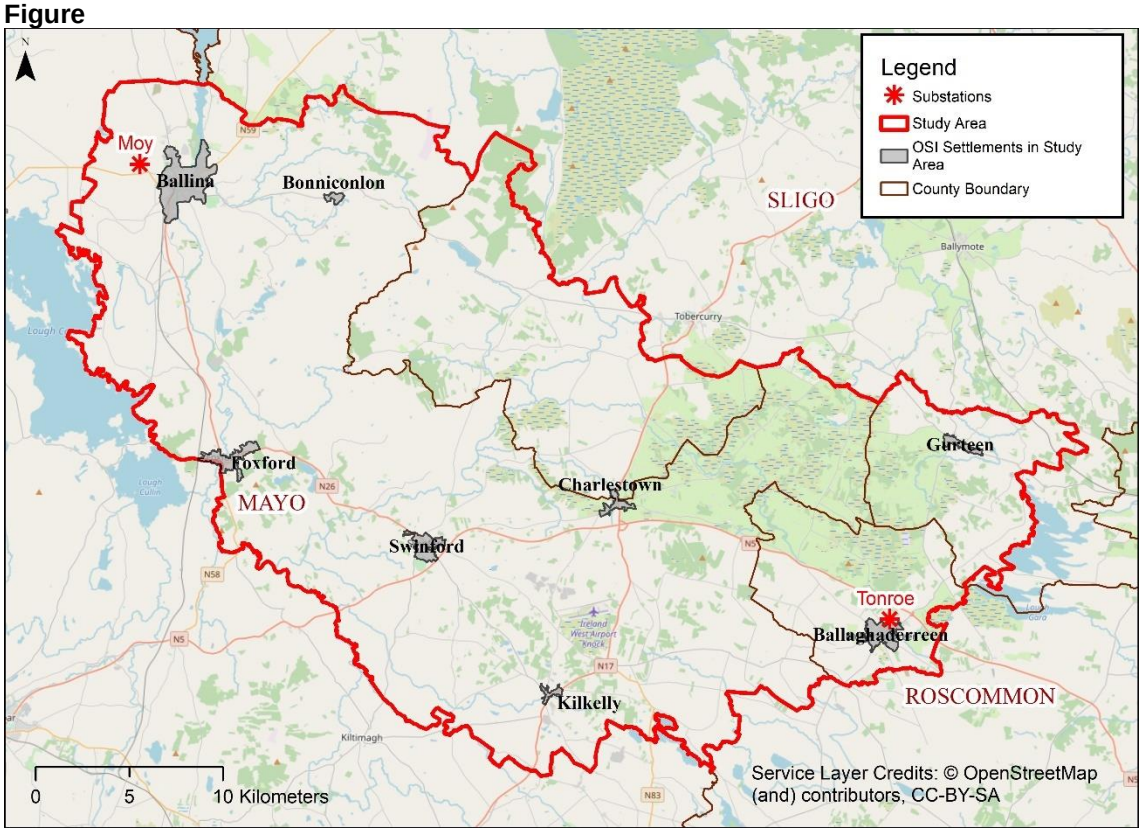
Appendices

A. Mapping

B. Social Impact Tables

The following tables and figures have been compiled as supporting data to the evaluation of the seven corridor options (four OHL and three UGC) under the Social Performance criterion (presented in Chapters 6 and 7 of the Step 4B Report).

Figure



Source: Mott MacDonald / Ordnance Survey of Ireland (OSI) / Central Statistics Office (CSO) / Open Street Map.

B.1 Settlement Hierarchy

Table B.1: Settlement Hierarchy (Ordnance Survey of Ireland)

Small Towns	Medium Towns	Large Towns
Bonniconlon	Foxford	Ballina
Gurteen	Swinford	
Kilkelly	Ballagahaderreen	
	Charlestown	

B.2 GeoDirectory Address Data

Table B.2: GeoDirectory Address Data

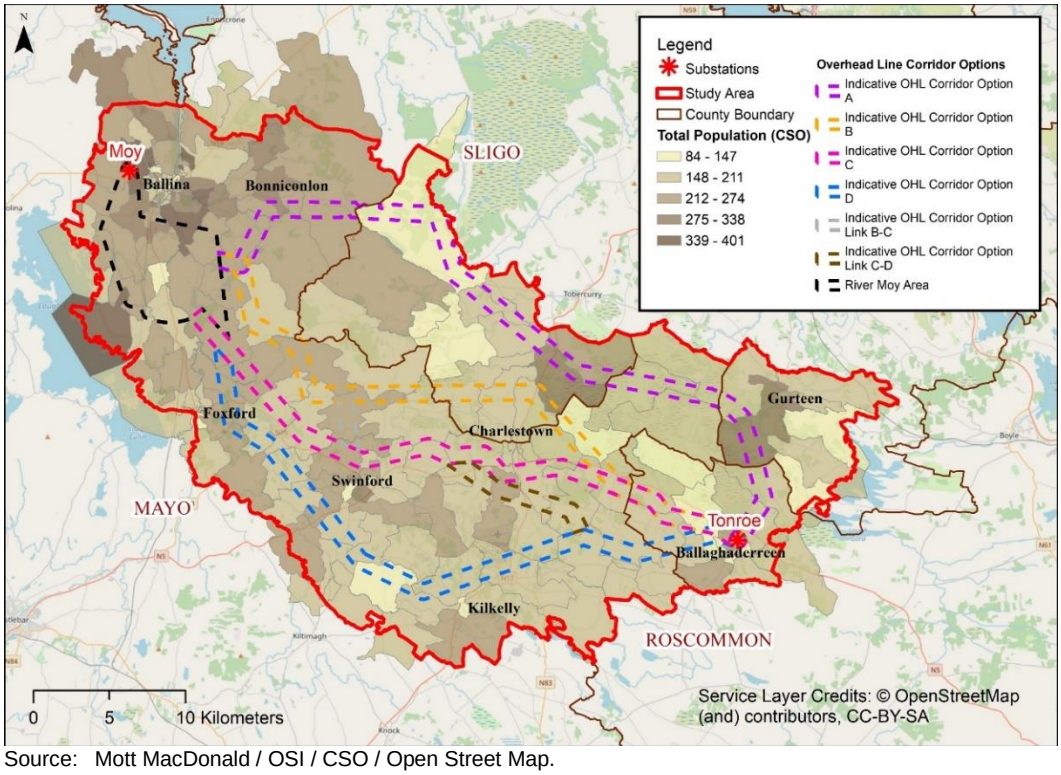
	UGC Option 1	UGC Option 2	UGC Option 3	OHL Corridor A	OHL Corridor B	OHL Corridor C	OHL Corridor D
Residential Address	574	335	817	417	488	513	625
Commercial Address	26	11	35	8	4	5	4
Both Residential and Commercial	95	65	119	147	95	71	112
Unknown	42	44	61	47	58	59	37
Totals	**737**	**455**	**1032**	**619**	**645**	**648**	**778**

For UGC Options, buildings are counted within a 250m buffer of the corridor.

B.3 Demographic Profile/Population Statistics

B.3.1 OHL Corridor Options

Figure B.1: Total Population of all Central Statistics Office (CSO) Small Area Population Statistics (SAPS) – OHL Corridor Options



Source: Mott MacDonald / OSI / CSO / Open Street Map.

The population statistics in the following tables are based on a combined total population of all Central Statistics Office (CSO) Small Area Population Statistics (SAPS) boundaries that intersect each corridor. The total number of SAPS intersecting each corridor are listed in the table below.

Table B.3: Number of SAPS intersected by each OHL corridor option

Corridor	Number of SAPS Intersecting
OHL Corridor Option A	26
OHL Corridor Option B	32
OHL Corridor Option C	30
OHL Corridor Option D	35

Source: CSO

Table B.4: Population by Age and Sex

Corridor	Area	Male <18	Male 18 to 65	Male > 65	Total Male	Female <18	Female 18 to 65	Female > 65	Total Female	Total
OHL Corridor Option A	Combined total of all CSO SMAPS intersecting the Corridor	681	1595	437	2713	591	1495	441	2527	5240
OHL Corridor Option B	Combined total of all CSO SMAPS intersecting the Corridor	702	1768	493	2963	708	1705	487	2900	5863
OHL Corridor Option C	Combined total of all CSO SMAPS intersecting the Corridor	608	1652	439	2699	645	1593	501	2739	5438
OHL Corridor Option D	Combined total of all CSO SMAPS intersecting the Corridor	800	1927	497	3224	808	1834	492	3134	6358

Source: CSO

Table B.5: Social Class / Socioeconomic Group

Corridor	Area	prfsl	mngrl	nml	skmml	Seskml	Unskld	Othr	Total
OHL Corridor Option A	Combined total of all CSO SMAPS intersecting the Corridor	177	1142	935	1062	779	229	916	5240
OHL Corridor Option B	Combined total of all CSO SMAPS intersecting the Corridor	216	1321	1073	1119	837	274	1023	5863
OHL Corridor Option C	Combined total of all CSO SMAPS intersecting the Corridor	221	1248	909	1050	764	226	1056	5474
OHL Corridor Option D	Combined total of all CSO SMAPS intersecting the Corridor	257	1453	1125	1222	936	267	1098	6358

Prfsl: Professional; Mngrl: Managerial and technical; Nmnl: Non-manual; Skmnl: Skilled manual; Seskml: Semi-skilled manual; Unskld: Unskilled; Othr: All others gainfully occupied and unknown - Total

Source: CSO

Table B.6: Persons at work by industry

Corridor	Area	AFF	BC	MI	CT	TC	PA	PS	OTH	TOTAL
OHL Corridor Option A	Combined total of all CSO SMAPS intersecting the Corridor	275	157	224	376	70	134	376	230	1842
OHL Corridor Option B	Combined total of all CSO SMAPS intersecting the Corridor	288	142	256	418	82	159	424	250	2019
OHL Corridor Option C	Combined total of all CSO SMAPS intersecting the Corridor	204	137	235	409	94	149	384	234	1846
OHL Corridor Option D	Combined total of all CSO SMAPS intersecting the Corridor	268	150	267	473	97	153	446	287	2141

AFF = Agriculture, Forestry and Fishing / BC = Building and Construction / MI= Manufacturing Industries / CT = Commerce and Trade / TC = Transport and Communications / pa = Public Administration / PS = Professional Services / OTH = Other

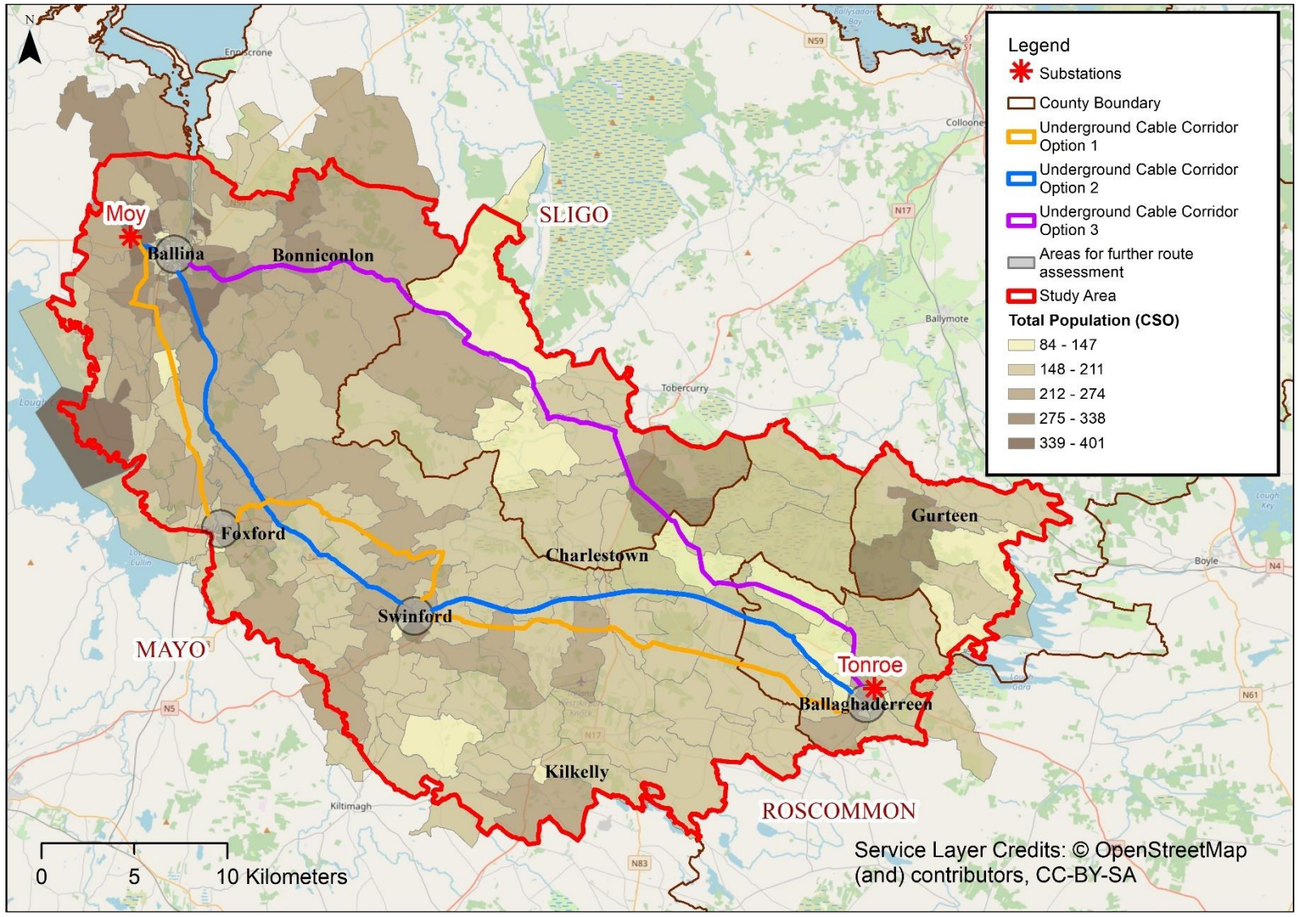
Table B.7: Private Households by size

Corridor	Area	I persons	2 persons	3 persons	4 persons	5 persons	6 persons	7 persons	8 or more persons	Total
OHL Corridor Option A	Combined total of all CSO SMAPS intersecting the Corridor	553	580	290	267	181	75	24	9	1979
OHL Corridor Option B	Combined total of all CSO SMAPS intersecting the Corridor	645	708	319	278	194	77	24	15	2260
OHL Corridor Option C	Combined total of all CSO SMAPS intersecting the Corridor	626	636	312	267	169	69	23	13	2115
OHL Corridor Option D	Combined total of all CSO SMAPS intersecting the Corridor	667	705	382	332	199	87	28	16	2416

Source: CSO

B.3.2 UGC Corridor Options

Figure B.2: Total Population of all Central Statistics Office (CSO) Small Area Population Statistics (SAPS) – UGC Corridor Options



Source: Mott MacDonald / OSI / CSO / Open Street Map.

The population statistics in the following tables are based on a combined total population of all Central Statistics Office (CSO) Small Area Population Statistics (SAPS) boundaries that intersect each corridor. For the towns along the corridor the CSO Settlement statistics for each town have been utilised. The total number of SAPS intersecting each corridor outside of the urban areas are listed in Table B.8. below.

Table B.8: Number if SAPS intersected by each UGC corridor option

Corridor	Number of SAPS Intersecting
UGC Corridor Option 1 (Rural)	32
UGC Corridor Option 2 (Rural)	33
UGC Corridor Option 3 (Rural)	27

Source: CSO

Table B.9: Population by age and sex

Corridor	Area	Male <18	Male 18 to 65	Male > 65	Total Male	Female <18	Female 18 to 65	Female > 65	Total Female	Total
UGC Corridor Option 1 Rural	Combined total of all CSO SMAPS intersecting a 250m buffer of corridor	855	1981	461	3297	871	1951	492	3314	6611
UGC Corridor Option 2 Rural	Combined total of all CSO SMAPS intersecting a 250m buffer of corridor	832	1950	480	3262	819	1919	527	3265	6527
UGC Corridor Option 3 Rural	Combined total of all CSO SMAPS intersecting a 250m buffer of corridor	772	1755	416	2943	690	1663	419	2772	5715
Ballina	CSO Data for OSI Settlement Boundary	1354	2915	677	4946	1319	3082	824	5225	10171
Foxford	CSO Data for OSI Settlement Boundary	141	363	104	608	154	425	128	707	1315
Swinford	CSO Data for OSI Settlement Boundary	151	354	170	675	144	376	199	719	1394
Ballaghaderreen	CSO Data for OSI Settlement Boundary	225	559	153	937	193	520	158	871	1808
Corridor	**Area**	**Male <18**	**Male 18 to 65**	**Male > 65**	**Total Male**	**Female <18**	**Female 18 to 65**	**Female > 65**	**Total Female**	**Total**
Combined Total Corridor Option 1	Urban and Rural	1372	3257	888	5517	1362	3272	977	5611	11128
Combined Total Corridor Option 2	Urban and Rural	2562	5778	1480	9820	2475	5897	1708	10080	19900
Combined Total Corridor Option 3	Urban and Rural	2351	5229	1246	8826	2202	5265	1401	8868	17694

Table B.10: Social Class/Socio-economic Group

Corridor	Area	prfsl	mngrl	nml	skmml	Seskml	Unskld	Othr	Total
UGC Corridor Option 1 Rural	Combined total of all CSO SMAPS intersecting a 250m buffer of corridor	314	1663	1159	1242	875	248	1110	6611
UGC Corridor Option 2 Rural	Combined total of all CSO SMAPS intersecting a 250m buffer of corridor	312	1565	1086	1208	818	244	1294	6527
UGC Corridor Option 3 Rural	Combined total of all CSO SMAPS intersecting a 250m buffer of corridor	242	1222	1030	1100	720	261	1140	5715
Ballina	CSO Data for OSI Settlement Boundary	472	2192	1778	1550	1222	440	2517	10171
Foxford	CSO Data for OSI Settlement Boundary	47	315	190	275	191	52	245	1315

Corridor	Area	prfsl	mngrl	nml	skmml	Seskml	Unskld	Othr	Total
Swinford	CSO Data for OSI Settlement Boundary	74	303	220	171	145	68	413	1394
Ballaghaderreen	CSO Data for OSI Settlement Boundary	51	273	244	284	291	78	587	1808
									0
Corridor	**Area**								0
Combined Total Corridor Option 1	Urban and Rural	486	2554	1813	1972	1502	446	2355	11128
Combined Total Corridor Option 2	Urban and Rural	909	4333	3328	3213	2476	830	4811	19900
Combined Total Corridor Option 3	Urban and Rural	765	3687	3052	2934	2233	779	4244	17694
Prfsl: Professional; Mngrl: Managerial and technical; Nmnl: Non-manual; Skmnl: Skilled manual; Seskml: Semi-skilled manual; Unskld: Unskilled; Othr: All others gainfully occupied and unknown - Total									

Table B.11: Persons at work by industry

Corridor	Area	AFF	BC	MI	CT	TC	PA	PS	OTH	TOTAL
UGC Corridor Option 1 Rural	Combined total of all CSO SMAPS intersecting a 250m buffer of corridor	257	160	322	547	135	199	491	268	2379
UGC Corridor Option 2 Rural	Combined total of all CSO SMAPS intersecting a 250m buffer of corridor	208	145	311	554	113	169	496	263	2259
UGC Corridor Option 3 Rural	Combined total of all CSO SMAPS intersecting a 250m buffer of corridor	210	137	237	479	75	138	403	248	1927
Ballina	CSO Data for OSI Settlement Boundary	33	139	524	964	151	197	805	812	3625
Foxford	CSO Data for OSI Settlement Boundary	6	39	106	81	22	30	122	95	501
Swinford	CSO Data for OSI Settlement Boundary	3	26	42	111	24	25	103	77	411
Ballaghaderreen	CSO Data for OSI Settlement Boundary	13	57	95	134	27	24	101	132	583
Corridor	**Area**									
Combined Total Corridor Option 1	Urban and Rural	279	282	565	873	208	278	817	572	3874
Combined Total Corridor Option 2	Urban and Rural	257	367	972	1763	315	415	1505	1284	6878
Combined Total Corridor Option 3	Urban and Rural	256	333	856	1577	253	359	1309	1192	6135
AFF = Agriculture, Forestry and Fishing / BC = Building and Construction / MI= Manufacturing Industries / CT = Commerce and Trade / TC = Transport and Communications / pa = Public Administration / PS = Professional Services / OTH = Other										

Table B.12: Private Households by size

Corridor	Area	I persons	2 persons	3 persons	4 persons	5 persons	6 persons	7 persons	8 or more persons	Total Households
UGC Corridor Option 1 Rural	Combined total of all CSO SMAPS intersecting a 250m buffer of corridor	595	682	367	361	218	102	30	18	2373
UGC Corridor Option 2 Rural	Combined total of all CSO SMAPS intersecting a 250m buffer of corridor	688	698	371	327	212	90	37	17	2440
UGC Corridor Option 3 Rural	Combined total of all CSO SMAPS intersecting a 250m buffer of corridor	520	602	312	307	204	78	35	16	2074
Ballina	CSO Data for OSI Settlement Boundary	1270	1119	609	554	260	102	26	31	3971
Foxford	CSO Data for OSI Settlement Boundary	200	203	80	58	25	13	2	1	582
Swinford	CSO Data for OSI Settlement Boundary	240	171	69	47	34	14	7	2	584

Corridor	Area	I persons	2 persons	3 persons	4 persons	5 persons	6 persons	7 persons	8 or more persons	Total Households
Ballaghaderreen	CSO Data for OSI Settlement Boundary	286	211	103	69	44	20	8	9	750
Corridor	**Area**									
Combined Total Corridor Option 1	Urban and Rural	1321	1267	619	535	321	149	47	30	4289
Combined Total Corridor Option 2	Urban and Rural	2484	2199	1152	997	550	226	78	59	7745
Combined Total Corridor Option 3	Urban and Rural	2076	1932	1024	930	508	200	69	56	6795

B.4 Social Receptors / Stakeholders:

Table B.13: Social Receptors / Stakeholders within the study area

Organisation	Location	Category	Organisation	Location	Category	Organisation	Location	Category
Aclare Playground	Aclare (Sligo)	Community Facilities / Groups	Michael Davitt CCE Swinford	Swinford	Community Facilities / Groups	Prebaun Loop	Carrowneden (Mayo)	Fáilte Ireland Listed Tourist Attractions
Attymass Community Centre / Attymass Development Association	Attymass	Community Facilities / Groups	Midfield Development Association	Swinford	Community Facilities / Groups	Ireland West Private Tours	Charlestown	Fáilte Ireland Listed Tourist Attractions
Abbey Partnership Community Development	Ballaghaderreen	Community Facilities / Groups	Society of St. Vincent De Paul Swinford	Swinford	Community Facilities / Groups	Owengarve River Moy	Curry (Sligo)	Fáilte Ireland Listed Tourist Attractions
Ballaghaderreen Library	Ballaghaderreen	Community Facilities / Groups	Swinford Community Centre	Swinford	Community Facilities / Groups	Foxford Rocks	Foxford	Fáilte Ireland Listed Tourist Attractions
Ballaghaderreen Playground	Ballaghaderreen	Community Facilities / Groups	Swinford Go Getters	Swinford	Community Facilities / Groups	Clogher Castle	Gorteen (Sligo)	Fáilte Ireland Listed Tourist Attractions
Ballaghaderreen Social Enterprise Centre	Ballaghaderreen	Community Facilities / Groups	Swinford Mens Shed	Swinford	Community Facilities / Groups	Carrowtemple	Gurteen (Sligo)	Fáilte Ireland Listed Tourist Attractions
Ballaghaderreen Civic Amenity Centre	Ballaghadereen	Community Facilities / Groups	Swinford Playground	Swinford	Community Facilities / Groups	Moygara Castle	Gurteen (Sligo)	Fáilte Ireland Listed Tourist Attractions
Ballaghderreen Community Park	Ballaghaderreen	Community Facilities / Groups	Swinford Public Library	Swinford	Community Facilities / Groups	Owenmore River Sligo	Gurteen (Sligo)	Fáilte Ireland Listed Tourist Attractions
Dalton Terrace Residents Association	Ballaghaderreen	Community Facilities / Groups	Swinford Swimming Club	Swinford	Community Facilities / Groups	Ireland West Airport - Knock	Kilkarriff West (Mayo)	Fáilte Ireland Listed Tourist Attractions
Family Institute	Ballaghaderreen	Community Facilities / Groups	Swinford Tidy Towns	Swinford	Community Facilities / Groups	Facebug Campers Campervan and Motorhome Hire	Swinford	Fáilte Ireland Listed Tourist Attractions
Phoenix Youth Centre	Ballaghaderreen	Community Facilities / Groups	The Cultural Centre Swinford	Swinford	Community Facilities / Groups	Hennigan's Heritage Centre	Swinford	Fáilte Ireland Listed Tourist Attractions
Royal Oak Parish Hall	Ballaghaderreen	Community Facilities / Groups	Annaghmore School	Annaghmore (Sligo)	Education	Ballina Frosty Salmon Festival (Winter)	Ballina	Festivals and Events
Seosamh Mac Gabhann Summer School	Ballaghaderreen	Community Facilities / Groups	Saint Feichin's National School	Attymass	Education	Ballina Salmon Festival (Sumer)	Ballina	Festivals and Events
Youth Reach Ballaghaderreen	Ballaghaderreen	Community Facilities / Groups	Saint Attracta's National School	Ballaghaderreen	Education	Bonniconlon Agricultural Show	Bonniconlon	Festivals and Events
Abbey Court Residents Association	Ballina	Community Facilities / Groups	Saint Nathy's College	Ballaghaderreen	Education	Foxford "Traditional Weekend"	Foxford	Festivals and Events
Amana Estate Residents Association	Ballina	Community Facilities / Groups	Youthreach Ballaghaderreen	Ballaghaderreen	Education	Siamsa Sráide Festival	Swinford	Festivals and Events
Ardnaree Residents Association	Ballina	Community Facilities / Groups	Ballina Boys National School	Ballina	Education	Aclare Health Centre	Aclare (Sligo)	Healthcare
Arthritis Ireland Mayo Branch	Ballina	Community Facilities / Groups	Moyne College	Ballina	Education	Ballaghaderreen Health Centre	Ballaghaderreen	Healthcare

Organisation	Location	Category	Organisation	Location	Category	Organisation	Location	Category
Ashbourne Grove Residents Association	Ballina	Community Facilities / Groups	Saint Dymphna's Special School	Ballina	Education	Oakwood Nursing Home	Ballaghaderreen	Healthcare
Ballina Active Retirement Association	Ballina	Community Facilities / Groups	Saint Mary's Secondary School	Ballina	Education	Animal Health Centre	Ballina	Healthcare
Ballina Chamber of Commerce	Ballina	Community Facilities / Groups	Saint Michael's National School	Ballina	Education	Atlantic Medical Centre	Ballina	Healthcare
Ballina Community Centre	Ballina	Community Facilities / Groups	Saint Muredach's College	Ballina	Education	Ballina Health Centre	Ballina	Healthcare
Ballina Community Clean Up	Ballina	Community Facilities / Groups	Saint Nichola's Special School	Ballina	Education	Community Care Centre Ballina	Ballina	Healthcare
Ballina Family Resource Centre	Ballina	Community Facilities / Groups	Kilmovee National School	Ballyglass (mayo)	Education	Moy Ridge Nursing Home	Ballina	Healthcare
Ballina Library	Ballina	Community Facilities / Groups	Our Lady's National School	Banada (Sligo)	Education	St. Augustine's Community Nursing Unit	Ballina	Healthcare
Ballina Men’s Shed	Ballina	Community Facilities / Groups	Barnacogue National School	Barnaccahoge (Mayo)	Education	Curry Health Centre	Curry (Sligo)	Healthcare
Ballina Playground	Ballina	Community Facilities / Groups	Behymore National School	Behy More (mayo)	Education	Blackrocks Nursing Home	Foxford	Healthcare
Ballina Tidy towns	Ballina	Community Facilities / Groups	Brusna National School	Boghtaduff (Roscommon)	Education	Foxford Health Centre	Foxford	Healthcare
Ballina Women’s Heritage Shed	Ballina	Community Facilities / Groups	Saint Joseph's National School	Bonneconlan West (Mayo)	Education	Gurteen Health Centre	Gurteen (sligo)	Healthcare
Brusna Court Residents Association	Ballina	Community Facilities / Groups	Breaffy National School	Breaghwy (Mayo)	Education	Kilkelly Health Centre	kilkelly (Mayo)	Healthcare
Castle Court Residents Association	Ballina	Community Facilities / Groups	Ceara National School	Carha (mayo)	Education	Kilmovee Health Centre	Kilmovee (Mayo)	Healthcare
Chairde Le Cheile	Ballina	Community Facilities / Groups	Saint Patrick's School	Carraveggaun West	Education	St Anne's Private Nursing Home	Sonnagh (Mayo)	Healthcare
Childer’s Heights Residents Association	Ballina	Community Facilities / Groups	Bofield National School	Carrowcastle (Mayo)	Education	Swinford Health Centre	Swinford	Healthcare
Church Manor Residents Association	Ballina	Community Facilities / Groups	Saint John's National School	Carrowmore (Mayo)	Education	St. Attracta's Nursing Home	Treanacally (Mayo)	Healthcare
Cloghans / Rathduff Community Developement Group	Ballina	Community Facilities / Groups	Carracastle Central National School	Cashelduff (Mayo)	Education	Tubbercurry Health Centre	Tubbercurry (Sligo)	Healthcare
Club Vario Youth Project	Ballina	Community Facilities / Groups	Saint Joseph's Community College	Charlestown	Education	Doogara Cottage	Ballaghaderreen	Recreation and Tourism
Dolmen view Residents Association	Ballina	Community Facilities / Groups	Saint Attracta's National School	Charlestown	Education	Ballina Angling Centre	Ballina	Recreation and Tourism
Fairways Residents Association	Ballina	Community Facilities / Groups	Cloghans National School	Cloghans (Mayo)	Education	Ballina Arts Centre	Ballina	Recreation and Tourism
Flow community project	Ballina	Community Facilities / Groups	Saint Patrick's National School Cloonlyon	Cloonlyon (Mayo)	Education	Rachel’s Irish Adventures	Ballina	Recreation and Tourism
Friarscourt Residents Association	Ballina	Community Facilities / Groups	Cross School	Cross South (Roscommon)	Education	Wild Atlantic Way Cottage	Bonniconlon	Recreation and Tourism
Friends of Leigue	Ballina	Community Facilities / Groups	Culmore National School	Cuilmore (Mayo)	Education	Charlestown Arts Centre	Charlestown	Recreation and Tourism
Glebe Residents’ Association	Ballina	Community Facilities / Groups	Curry National School	Curry (Sligo)	Education	Culduff Cottages	Cuilldoo (Mayo)	Recreation and Tourism
Glen neiphin men’s shed	Ballina	Community Facilities / Groups	Saint Colman's National School	Derrynambrock (Mayo)	Education	Callow Loop	Cuillonaghtan Mayo)	Recreation and Tourism
Glen Ri Residents Association	Ballina	Community Facilities / Groups	Castlerock National School	Drummartin (Sligo)	Education	Currinah Co. Roscommon Ireland	Currinah	Recreation and Tourism
Greenhills Resource Office	Ballina	Community Facilities / Groups	Cullens National School	Farrannoo (Mayo)	Education	Admiral William Museum	Foxford	Recreation and Tourism
Irish Countrywomens Association Ballina Guild	Ballina	Community Facilities / Groups	Foxford Central National School	Foxford	Education	The Foxford Way	Foxford	Recreation and Tourism

Organisation	Location	Category	Organisation	Location	Category	Organisation	Location	Category
Kilmoremoy Bereavement Support Group	Ballina	Community Facilities / Groups	Saint Joseph's Secondary School	Foxford	Education	Ox Mountain Rmablers Group	Sligo	Recreation and Tourism
Mayo Beekeepers Association	Ballina	Community Facilities / Groups	Garracloon National School	Garrycloonagh (Mayo)	Education	Procession of the Souls Park	Swinford	Recreation and Tourism
Mayo Mud Run Committee	Ballina	Community Facilities / Groups	Saint Joseph's Culleens	Killeen (Mayo)	Education	Attymachugh Catholic Church	Attimachugh (Mayo)	Religious
Mayo North Promotions Office	Ballina	Community Facilities / Groups	Kinaffe National School	Kinaff (Mayo)	Education	Cathedral of the Annunciation and Saint Nathy	Ballaghaderreen	Religious
McGowan's Funeral Home	Ballina	Community Facilities / Groups	Knockanillo National School	Knockegan and Cloonagh Beg (Mayo)	Education	Parish Office	Ballina	Religious
Milltown Village Enhancement Committee	Ballina	Community Facilities / Groups	Lisaniska National School	Lissaniska East (Mayo)	Education	Saint Michael's Church of Ireland Church	Ballina	**religious**
Moffatt School of Irish Dancing	Ballina	Community Facilities / Groups	Saint Joseph's National School	Listernan (Mayo)	Education	Saint Muredachs Catholic Cathedral	Ballina	Religious
Mossgrove Residents Association	Ballina	Community Facilities / Groups	Saint Oliver Plunkett's National School	Quignamanger (Mayo)	Education	Saint Patrick's Catholic Church	Ballina	Religious
Moy Heights Residents Association	Ballina	Community Facilities / Groups	Saint Joseph's National School	Rathnaconeen (Mayo)	Education	Sacred Heart Catholic Church	Boghtaduff (Roscommon)	Religious
Moy Valley Over 55 Club	Ballina	Community Facilities / Groups	Shraheen National School	Shannasmore (Mayo)	Education	Church of the Immaculate Heart of Mary (Catholic)	Bonneconlan West (Mayo)	Religious
Moy valley Resources	Ballina	Community Facilities / Groups	Townaghbrack School	Sroove (sligo)	Education	Church of St. Thomas the Apostle, Callow	Callow	Religious
North Mayo Volunteers Centre	Ballina	Community Facilities / Groups	Scoil Muire Agus Padraig (Secondary School)	Swinford	Education	Saint Thomas' Catholic Church	Callow (Mayo)	Religious
North West SPCA Limited	Ballina	Community Facilities / Groups	Swinford National School	Swinford	Education	Saint James's Catholic Church	Charlestown	Religious
Oaklawn Residents Association	Ballina	Community Facilities / Groups	Tavraun National School	Tavraun (Mayo)	Education	Saint Colman's Catholic Church	Cloonlumney (Roscommon)	Religious
Order Of Malta Ballina Unit	Ballina	Community Facilities / Groups	Saint Aiden's National School	Tawnymucklagh (Sligo)	Education	Immaculate Conception Catholic Church	Curry (Sligo)	Religious
Quay Residents Association	Ballina	Community Facilities / Groups	St. Joseph's National School	Treanlaur (Mayo)	Education	Saint Patrick's Catholic Church Glann	Glentavraun (Mayo)	Religious
Rathmeel Lawns Residents Association	Ballina	Community Facilities / Groups	Saint Joseph's School	Woodfield (Mayo)	Education	Saint Joseph's Catholic Church	Kilgellia (Mayo)	Religious
Rathnaconeen Residents	Ballina	Community Facilities / Groups	15 Morrison Terrace	Ballina	Fáilte Ireland Approved Accommodation	Saint Luke's Catholic Church	Killeen (Mayo)	Religious
Rehins Fort Residents Committee	Ballina	Community Facilities / Groups	Ballina Manor Hotel	Ballina	Fáilte Ireland Approved Accommodation	Our Lady of the Rosary Catholic Church	Kilmacteige (Sligo)	Religious
River Moy Search and Rescue Ballina	Ballina	Community Facilities / Groups	Caledonia (Accommodation)	Ballina	Fáilte Ireland Approved Accommodation	Church of The Immaculate Conception (Catholic)	Kilmovee (Mayo)	Religious
Riverside Drive Residents Association	Ballina	Community Facilities / Groups	Downhill Inn Hotel	Ballina	Fáilte Ireland Approved Accommodation	Church of Christ the King (Catholic)	Knockmore (Mayo)	Religious
Riverside Grange Residents Association	Ballina	Community Facilities / Groups	Greenhill (Accommodation)	Ballina	Fáilte Ireland Approved Accommodation	The Lake Church Loch Talt (Catholic)	Largan (Sligo)	Religious
Rockwell Residents Association	Ballina	Community Facilities / Groups	Suncroft (Accommodation)	Ballina	Fáilte Ireland Approved Accommodation	Saint Patrick's Catholic Church	Lisnagross (Mayo)	Religious
Sean Duffy Community Centre	Ballina	Community Facilities / Groups	Twin Trees Hotel & Leisure Club	Ballina	Fáilte Ireland Approved Accommodation	All Saints' Church (Catholic)	Listernan (Mayo)	Religious
SHARE (Mental Health Services)	Ballina	Community Facilities / Groups	Rockview House	Cashelduff (Mayo)	Fáilte Ireland Approved Accommodation	Saint Aidan's Catholic Church	Monasterredan (Sligo)	Religious
Society of St. Vincent De Paul Ballina	Ballina	Community Facilities / Groups	Clocan Bed and Breakfast	Charelstown	Fáilte Ireland Approved Accommodation	Kingdom Hall of Jehovah's Witnesses	Rathconeen Mayo	Religious
St Muredach's Cathedral Choir	Ballina	Community Facilities / Groups	Riverside Restaurant & Guesthouse	Charlestown	Fáilte Ireland Approved Accommodation	Saint Teresa's Catholic Church	Rathduff (Mayo)	Religious

Organisation	Location	Category	Organisation	Location	Category	Organisation	Location	Category
St. Murdach's Trust	Ballina	Community Facilities / Groups	Yeats County Inn Hotel	Curry (Sligo)	Fáilte Ireland Approved Accommodation	Saint Thomas Catholic Church	Rathmadder (Sligo)	Religious
The Archers Residents Association	Ballina	Community Facilities / Groups	Mount Falcon Estate	Drumrevagh (mayo)	Fáilte Ireland Approved Accommodation	Saint Joseph's Catholic Church	Roosky (Mayo)	Religious
The Hawthorns Residents Association	Ballina	Community Facilities / Groups	Belleek Park, Caravan and Camping Park	Farranoo (Mayo)	Fáilte Ireland Approved Accommodation	Saint Celsus Catholic Church	Shammerbaun (Mayo)	Religious
The Moorings Residents Association	Ballina	Community Facilities / Groups	Mayfly Hotel	Foxford	Fáilte Ireland Approved Accommodation	Our Lady Help of Christians (Catholic)	Swinford	Religious
The Olde Millstone Residents Association	Ballina	Community Facilities / Groups	Belleek Castle	Garrankeel (Mayo)	Fáilte Ireland Approved Accommodation	Saint Joseph's Catholic Church	Tomboholla (Mayo)	Religious
Woodville Estate Residents Association	Ballina	Community Facilities / Groups	Church View B&B	Gurteen (sligo)	Fáilte Ireland Approved Accommodation	Church of the Immaculate, Tourlstrane	Toorlestraun	Religious
Banada Abbey Hall	Banada (Sligo)	Community Facilities / Groups	Bayview (Accommodation)	Knockmore (Mayo)	Fáilte Ireland Approved Accommodation	Saint Attracta's Catholic Church	Tourlestrane (Sligo)	Religious
Banada Community Centre Committee	Banada (Sligo)	Community Facilities / Groups	Burton Street House	Laghtadawannagh (Mayo)	Fáilte Ireland Approved Accommodation	Saint Joseph's Catholic Church	Treanlaur (Mayo)	Religious
Banada Development Agency CLG	Banada (Sligo)	Community Facilities / Groups	Brigown (Accommodation)	Quignalecka (Mayo)	Fáilte Ireland Approved Accommodation	Saint Joseph's Catholic Church	Urlaur (Mayo)	Religious
Bonniconlon Foróige	Bonniconlon	Community Facilities / Groups	The Ice House Hotel	Quignalecka (Mayo)	Fáilte Ireland Approved Accommodation	Aclare Astro Pitch	Aclare (Sligo)	Sports Facilities / Clubs
Bonniconlon Irish Country Woman's Association	Bonniconlon	Community Facilities / Groups	Great National Hotel Ballina	Rathnaconeen (Mayo)	Fáilte Ireland Approved Accommodation	McGuiness Park (Aclare Celtic)	Aclare (Sligo)	Sports Facilities / Clubs
Bonniconlon village enhancement/tidy town	Bonniconlon	Community Facilities / Groups	Deerpark Manor B&B	Swinford	Fáilte Ireland Approved Accommodation	Chris Durkan Memorial Park Club House and Astro Turf Pitch (Moy Villa F.C. Club)	Attymass	Sports Facilities / Clubs
Carracastle Community Centre	Carracastle (Mayo)	Community Facilities / Groups	Gateway Hotel	Swinford	Fáilte Ireland Approved Accommodation	Ballaghaderreen FC	Ballaghaderreen	Sports Facilities / Clubs
Carracastle Future Ltd.	Carracastle (Mayo)	Community Facilities / Groups	Sweeney Self Catering	Swinford	Fáilte Ireland Approved Accommodation	Ballaghaderreen GAA	Ballaghaderreen	Sports Facilities / Clubs
Carracastle Voluntary Housing Association Ltd.	Carracastle (Mayo)	Community Facilities / Groups	Atlantic Motorcycle Hire Ireland	Ballina	Fáilte Ireland Listed Tourist Activities	Ballaghaderreen Handball Club	Ballaghaderreen	Sports Facilities / Clubs
Charlestown & District Development Assoc. Ltd.	Charlestown	Community Facilities / Groups	Attymass Salmon Fishery	Ballina	Fáilte Ireland Listed Tourist Activities	Ballaghderreen Tennis Club Courts	Ballaghaderreen	Sports Facilities / Clubs
Charlestown and District Community Futures	Charlestown	Community Facilities / Groups	Ballina Community Tourist Office	Ballina	Fáilte Ireland Listed Tourist Activities	Gaea Spa	Ballaghaderreen	Sports Facilities / Clubs
Charlestown and District Mens Shed	Charlestown	Community Facilities / Groups	Ballina Farmers Market	Ballina	Fáilte Ireland Listed Tourist Activities	Ardnaree Boxing Club	Ballina	Sports Facilities / Clubs
Charlestown Bellaghy Enterprise Organisation	Charlestown	Community Facilities / Groups	Ballina Golf Club	Ballina	Fáilte Ireland Listed Tourist Activities	Ardnaree Sarsfields	Ballina	Sports Facilities / Clubs
Charlestown Cemetery Committee	Charlestown	Community Facilities / Groups	Ballina Self-Guided Historic Town Walk	Ballina	Fáilte Ireland Listed Tourist Activities	Ballina Athletic Club	Ballina	Sports Facilities / Clubs
Charlestown Community Enterprise Centre Ltd.	Charlestown	Community Facilities / Groups	Bar Square	Ballina	Fáilte Ireland Listed Tourist Activities	Ballina Badminton Club	Ballina	Sports Facilities / Clubs
Charlestown Events Committee	Charlestown	Community Facilities / Groups	Belleek - Multi Access	Ballina	Fáilte Ireland Listed Tourist Activities	Ballina Boat Club	Ballina	Sports Facilities / Clubs
Charlestown Foroige Club	Charlestown	Community Facilities / Groups	Crockets on the Quay, Restaurant & Bar	Ballina	Fáilte Ireland Listed Tourist Activities	Ballina Boxing Club	Ballina	Sports Facilities / Clubs
Charlestown Playground	Charlestown	Community Facilities / Groups	Judd Ruane - Sea Trout Specialist	Ballina	Fáilte Ireland Listed Tourist Activities	Ballina Community games	Ballina	Sports Facilities / Clubs
Charlestown Public Library	Charlestown	Community Facilities / Groups	Lough Conn	Ballina	Fáilte Ireland Listed Tourist Activities	Ballina Community Sports Centre	Ballina	Sports Facilities / Clubs
Charlestown Tidy Towns Committee	Charlestown	Community Facilities / Groups	Lough Cullen	Ballina	Fáilte Ireland Listed Tourist Activities	Ballina Golf Club	Ballina	Sports Facilities / Clubs

Organisation	Location	Category
Cosgallen, East Mayo Community Development Project	Charlestown	Community Facilities / Groups
The Good Life Network	Charlestown	Community Facilities / Groups
Culmore Community Group	Cuilmore (Mayo)	Community Facilities / Groups
Curry Community Alert	Curry (Sligo)	Community Facilities / Groups
Curry Community Development Committee	Curry (Sligo)	Community Facilities / Groups
Curry Parish History and Heritage Group	Curry (Sligo)	Community Facilities / Groups
St Mary's Community Centre	Curry (Sligo)	Community Facilities / Groups
Assumpta Place / Barrack Road Residents' Association	Foxford	Community Facilities / Groups
Foxford Angling Club	Foxford	Community Facilities / Groups
Foxford Brass and Reed Band	Foxford	Community Facilities / Groups
Foxford Mens Shed	Foxford	Community Facilities / Groups
Foxford Playground	Foxford	Community Facilities / Groups
Foxford Public Library	Foxford	Community Facilities / Groups
Foxford Salmon Anglers	Foxford	Community Facilities / Groups
Foxford Town Enhancement Group	Foxford	Community Facilities / Groups
Mary Aikenhead Council (Foxford Voluntary Social Services)	Foxford	Community Facilities / Groups
Mayo Branch of BirdWatch Ireland	Foxford	Community Facilities / Groups
River Moy Trust	Foxford	Community Facilities / Groups
Society of St Vincent de Paul Foxford	Foxford	Community Facilities / Groups
ALONE (Mayo, Galway and Roscommon Branch)	Kilkelly (Mayo)	Community Facilities / Groups
Irish Countrywomens' Association Kilkelly Guild	Kilkelly (Mayo)	Community Facilities / Groups
Kilkelly & District Development Company	Kilkelly (Mayo)	Community Facilities / Groups
Kilkelly Community Centre	Kilkelly (Mayo)	Community Facilities / Groups
Kilkelly Community Futures Group	Kilkelly (Mayo)	Community Facilities / Groups
Kilkelly Heritage Association	Kilkelly (Mayo)	Community Facilities / Groups
Kilkelly Library	Kilkelly (Mayo)	Community Facilities / Groups
Kilkelly Tidy Towns	Kilkelly (Mayo)	Community Facilities / Groups
Kilkelly Village Enhancement	Kilkelly (Mayo)	Community Facilities / Groups
Kilkelly Youth Centre	Kilkelly (Mayo)	Community Facilities / Groups
Market Kitchen	Ballina	Fáilte Ireland Listed Tourist Activities
Mount Falcon Estate	Ballina	Fáilte Ireland Listed Tourist Activities
Mount Falcon Fisheries	Ballina	Fáilte Ireland Listed Tourist Activities
Moy Archery	Ballina	Fáilte Ireland Listed Tourist Activities
Moy River	Ballina	Fáilte Ireland Listed Tourist Activities
Noo Chocolates	Ballina	Fáilte Ireland Listed Tourist Activities
Paddle & Pedal	Ballina	Fáilte Ireland Listed Tourist Activities
Rouses Bar	Ballina	Fáilte Ireland Listed Tourist Activities
Sli na Slainte walking route - Ballina	Ballina	Fáilte Ireland Listed Tourist Activities
The Bond Cafe & Bistro	Ballina	Fáilte Ireland Listed Tourist Activities
The Broken Jug	Ballina	Fáilte Ireland Listed Tourist Activities
Trek West	Ballina	Fáilte Ireland Listed Tourist Activities
Charlestown Farmers Market	Charlestown	Fáilte Ireland Listed Tourist Activities
Healy's Café Bar	Charlestown	Fáilte Ireland Listed Tourist Activities
Foxford Woollen Mills	Foxford	Fáilte Ireland Listed Tourist Activities
Foxford Woollen Mills Market	Foxford	Fáilte Ireland Listed Tourist Activities
Foxford Woollen Mills Visitor and Shop	Foxford	Fáilte Ireland Listed Tourist Activities
Larganmore Loop	Foxford	Fáilte Ireland Listed Tourist Activities
Mr Harry Feeney - Angling Guide	Foxford	Fáilte Ireland Listed Tourist Activities
Tiernan Brothers Angling Centre	Foxford	Fáilte Ireland Listed Tourist Activities
Coleman Irish Music Centre - Ceoláras Coleman	Gurteen (Sligo)	Fáilte Ireland Listed Tourist Activities
The Crossbar	Gurteen (Sligo)	Fáilte Ireland Listed Tourist Activities
Ireland West Bog Experience	Lissymulgee (Mayo)	Fáilte Ireland Listed Tourist Activities
East Mayo Anglers Association	Swinford	Fáilte Ireland Listed Tourist Activities
Swinford Golf Club	Swinford	Fáilte Ireland Listed Tourist Activities
Swinford Indoor Country Market	Swinford	Fáilte Ireland Listed Tourist Activities
Swinford Visitor Information Point	Swinford	Fáilte Ireland Listed Tourist Activities
Fr Patrick Peyton CSC Memorial Centre	Attymass	Fáilte Ireland Listed Tourist Attractions
Belleek Woods	Ballina	Fáilte Ireland Listed Tourist Attractions
Ballina Rowing Club	Ballina	Sports Facilities / Clubs
Ballina Rugby Club	Ballina	Sports Facilities / Clubs
Ballina Stephenites GAA Club	Ballina	Sports Facilities / Clubs
Ballina Town Soccer Club	Ballina	Sports Facilities / Clubs
Eagles Leisure Centre	Ballina	Sports Facilities / Clubs
Moy Valley Freestyle Martial Arts	Ballina	Sports Facilities / Clubs
Nadia Gym	Ballina	Sports Facilities / Clubs
Parks Tennis Ballina	Ballina	Sports Facilities / Clubs
River Moy Half Marathon	Ballina	Sports Facilities / Clubs
Tranquility Leisure & Spa	Ballina	Sports Facilities / Clubs
Bonniconlon GAA Complex	Bonniconlon	Sports Facilities / Clubs
Bonniconlon Gaelic 4 Mothers and Others	Bonniconlon	Sports Facilities / Clubs
Carracastle Community Centre and Sports Field	Carracastle (Mayo)	Sports Facilities / Clubs
Charlestown Cubs Basketball Club	Charlestown	Sports Facilities / Clubs
Charlestown Sarsfield GAA Club	Charlestown	Sports Facilities / Clubs
Charlestown Swimming Pool	Charlestown	Sports Facilities / Clubs
Charlestown Athletic Football Club (AFC)	Charlestown	Sports Facilities / Clubs
Charlestown Bellaghy & District Sports Complex	Charlestown	Sports Facilities / Clubs
Curry GAA	Curry (Sligo)	Sports Facilities / Clubs
Conn Rangers AFC Ltd	Drumrevagh (mayo)	Sports Facilities / Clubs
Bohola Moy Davitts GAA Club	Foxford	Sports Facilities / Clubs
Foxford Sports and Leisure Centre	Foxford	Sports Facilities / Clubs
Barnfield House Equestrian Centre	Gortaskibbole (Mayo)	Sports Facilities / Clubs
Gurteen Soccer Pitch	Gurteen (Sligo)	Sports Facilities / Clubs
Kilkelly Youth Centre	kilkelly (Mayo)	Sports Facilities / Clubs
Kilmovee Community Centre	Kilmovee (Mayo)	Sports Facilities / Clubs
Kilmovee Shamrock's GAA Club	Kilmovee (Mayo)	Sports Facilities / Clubs
Kilmovee Swimming Pool & Aqua Sports Co. Ltd.	Kilmovee (Mayo)	Sports Facilities / Clubs
Knockmore GAA	Knockmore (Mayo)	Sports Facilities / Clubs

Organisation	Location	Category	Organisation	Location	Category	Organisation	Location	Category
Kilmactigue Community Centre	Kilmacteige (Sligo)	Community Facilities / Groups	Broadhaven Irish Tours	Ballina	Fáilte Ireland Listed Tourist Attractions	Knockmore Rathduff Recreation and Resource Centre	Knockmore (Mayo)	Sports Facilities / Clubs
Cairdeas Kilmovee Family Resource Centre	Kilmovee (Mayo)	Community Facilities / Groups	Drumsheen Looped Walk	Ballina	Fáilte Ireland Listed Tourist Attractions	Lakehill Tug of War Club	knockmore (Mayo)	Sports Facilities / Clubs
Kilmovee “Cois Tine” Heritage Centre	Kilmovee (Mayo)	Community Facilities / Groups	Marjorie's Cookery School & Guest Accommodation	Ballina	Fáilte Ireland Listed Tourist Attractions	Swinford Boxing Club	Swinford	Sports Facilities / Clubs
Kilmovee Community Centre	Kilmovee (Mayo)	Community Facilities / Groups	Marshall Doran Collection at Belleek Castle	Ballina	Fáilte Ireland Listed Tourist Attractions	Swinford Community Centre	Swinford	Sports Facilities / Clubs
Kilmovee Community Council	Kilmovee (Mayo)	Community Facilities / Groups	Rachel’s Irish Adventures	Ballina	Fáilte Ireland Listed Tourist Attractions	Swinford FC	Swinford	Sports Facilities / Clubs
Kilmovee Community Housing Ltd.	Kilmovee (Mayo)	Community Facilities / Groups	Sláinte Ireland Tours	Ballina	Fáilte Ireland Listed Tourist Attractions	Swinford GAA Club	Swinford	Sports Facilities / Clubs
Kilmovee Foroige Club	Kilmovee (Mayo)	Community Facilities / Groups	SS Crete Boom – Ballina’s Concrete Ship	Ballina	Fáilte Ireland Listed Tourist Attractions	Swinford Golf Club	Swinford	Sports Facilities / Clubs
Knockmore Rathduff Recreation & Resource Centre	knockmore (Mayo)	Community Facilities / Groups	The North Mayo Sculpture Trail	Ballina	Fáilte Ireland Listed Tourist Attractions	Swinford Handball Club	Swinford	Sports Facilities / Clubs
Killasser Community Centre	Listernan (Mayo)	Community Facilities / Groups	Treacy Coaches	Ballina	Fáilte Ireland Listed Tourist Attractions	Swinford Ladies Football Club	Swinford	Sports Facilities / Clubs
St Patricks parish Hall	Rathmadder (Sligo)	Community Facilities / Groups	Trek West	Ballina	Fáilte Ireland Listed Tourist Attractions	Swinford Tennis Club	Swinford	Sports Facilities / Clubs
Down Syndrome Ireland West Regional Centre	Swinford	Community Facilities / Groups	Tumble Jungle	Ballina	Fáilte Ireland Listed Tourist Attractions	Tourlestrane GAA Club	Tourlestrane (Sligo)	Sports Facilities / Clubs
			Glen Looped Walk	Bonniconlon	Fáilte Ireland Listed Tourist Attractions			

Source: Compiled by Mott MacDonald

Table B.14: Number of GeoDirectory receptors within each townland in the study area

TOWNLAND NAME (ENGLISH)	GAEILGE	COUNTY	RESIDENTIAL ADDRESSES	COMMERCIAL ADDRESSES	BOTH (RESIDENTIAL AND COMMERCIAL	UNKNOWN CATEGORY	TOTAL BUILDINGS WITH AN ADDRESS
ABBEYHALFQUARTER	Leithcheathrú na Mainistreach	MAYO	463	67	18	12	560
AGHADIFFIN	Achadh Dhuifín	MAYO	19	0	16	3	38
AGHAWARD	Achadh an Bhaird	MAYO	12	0	5	1	18
ARDAGH	Ardach	MAYO	9	0	2	2	13
ARDHOOM	Arthuaim	MAYO	23	0	3	0	26
ARDLEE	Ard Lao	MAYO	3	0	1	1	5
ARDNAREE or SHANAGHY	Ard na Ria nó Seanachaidh	MAYO	560	5	18	4	587
ARDOUGHAN	Ard Deochan	MAYO	24	1	5	1	31
ARDRASS	Ardros	MAYO	8	0	1	0	9
ARDVALLY	An Ardbhuaile	MAYO	11	0	3	1	15
ASKILLAUN	Ascallán	MAYO	5	1	7	0	13
ATTIMACHUGH	Áit Tí Mhic Aodha	MAYO	8	1	0	1	10
ATTINASKOLLIA	Áit Tí na Scoile	MAYO	2	0	0	1	3
BALLINA	Béal an Átha	MAYO	1542	341	72	65	2020
BALLINDOO or DOOCASTLE	Baile an Dumha nó Caisleán an Dumha	MAYO	46	3	31	15	95
BALLINDREHID	Baile an Droichid	MAYO	17	0	6	2	25
BALLINILLAUN	Baile an Oileáin	MAYO	6	0	0	0	6

TOWNLAND NAME (ENGLISH)	GAEILGE	COUNTY	RESIDENTIAL ADDRESSES	COMMERCIAL ADDRESSES	BOTH (RESIDENTIAL AND COMMERCIAL	UNKNOWN CATEGORY	TOTAL BUILDINGS WITH AN ADDRESS
BALLINLAG	Baile an Loig	MAYO	9	0	5	1	15
BALLINRUMPA	Baile an Rumpa	MAYO	7	0	5	3	15
BALLINTADDER	Baile an tSeadaire	MAYO	2	0	3	0	5
BALLINTEMPLE	Baile an Teampaill	MAYO	19	0	1	0	20
BALLINVOHER	Baile an Bhóthair	MAYO	10	0	2	0	12
BALLOOR	An Baile Úr	MAYO	3	0	3	0	6
BALLOORCLERHY	Baile Úr Cloichrí	MAYO	17	0	4	4	25
BALLYBEG	An Baile Beag	MAYO	18	0	4	1	23
BALLYCONG	Béal Átha Conga	MAYO	16	0	3	2	21
BALLYDERG	Baile Uí Dheirg	MAYO	24	0	5	2	31
BALLYDRUM	Béal Átha Droma	MAYO	10	0	1	4	15
BALLYGLASS	An Baile Glas	MAYO	8	0	0	1	9
BALLYGLASS	An Baile Glas	MAYO	19	1	4	2	26
BALLYGLASS	An Baile Glas	MAYO	69	0	0	1	70
BALLYGLASS EAST	An Baile Glas Thoir	MAYO	21	0	2	3	26
BALLYGLASS WEST	An Baile Glas Thiar	MAYO	0	0	0	2	2
BALLYHANRUCK	Baile Hanrac	MAYO	5	0	2	0	7
BALLYHIERNAUN	Baile Thiarnáin	MAYO	10	0	3	1	14
BALLYHOLAN	Baile Uí Thuathaláin	MAYO	39	6	5	0	50
BALLYMACREDMOND	Baile Mhic Réamainn	MAYO	34	1	11	2	48
BALLYMILES	Baile Mhaolra	MAYO	5	0	1	1	7
BALLYMORE	An Baile Mór	MAYO	21	0	6	3	30
BALLYNAHAGLISH	Baile na hEaglaise	MAYO	25	1	1	1	28
BALLYNAMONA	Baile na Móna	MAYO	29	0	2	5	36
BALLYNARAHA	Baile na Ráithe	MAYO	22	2	1	0	25
BARCULL	Barr Coill	MAYO	4	0	1	2	7
BARNACAHOGE	Barr na Caóige	MAYO	36	1	13	5	55
BARNAHESKER	Barr na hEiscire	MAYO	13	1	5	2	21
BARNALYRA	Barr na Laidhre	MAYO	17	0	4	8	29
BARROE	An Barr Rua	MAYO	24	0	12	2	38
BEHY BEG	An Bheithigh Bheag	MAYO	30	1	8	4	43
BEHY MORE	An Bheithigh Mhór	MAYO	6	2	8	1	17
BEHYBAUN	An Bheithigh Bhán	MAYO	17	2	5	2	26
BELGARROW	An Béal Garbh	MAYO	102	3	7	2	114
BELLANACURRA	Béal Átha na Cora	MAYO	2	0	0	0	2
BELLANIRA or ICEFORD	Béal Átha an Oidhre	MAYO	19	0	1	0	20
BELLASS	Béal Easa	MAYO	246	7	10	4	267
BELLEEK	Béal Leice	MAYO	46	6	4	0	56
BLACKPATCH	An Preabán Dubh	MAYO	5	0	2	2	9
BOHERHALLAGH	An Bóthar Salach	MAYO	28	0	5	7	40
BOLEYBOY	An Bhuaile Bhuí	MAYO	3	0	1	0	4

TOWNLAND NAME (ENGLISH)	GAEILGE	COUNTY	RESIDENTIAL ADDRESSES	COMMERCIAL ADDRESSES	BOTH (RESIDENTIAL AND COMMERCIAL	UNKNOWN CATEGORY	TOTAL BUILDINGS WITH AN ADDRESS
BOTHAUL	Both Tháil	MAYO	11	0	4	0	15
BOTINNY	Both na Tonnaí	MAYO	5	0	4	5	14
BOYHOLLAGH	Boith Shalach	MAYO	18	0	7	6	31
BRACKLAGH	An Bhreaclach	MAYO	5	0	3	4	12
BRACKLOON	Breac-chluain	MAYO	46	0	6	3	55
BRACKLOONAGH NORTH	Breac-chluanach Thuaidh	MAYO	3	0	0	3	6
BRACKLOONAGH SOUTH	Breac-chluanach Theas	MAYO	6	1	1	1	9
BRACKWANSHAGH	Breacbháinseach	MAYO	21	1	6	3	31
BREAGHWY	Bréachmhaigh	MAYO	82	3	15	9	109
BRUFF	Bruigh	MAYO	3	0	2	2	7
BULCAUN	Bolcán	MAYO	7	0	3	0	10
BUNNAFINGLAS	Bun na Fionnghlaise	MAYO	12	2	1	1	16
BUNNYCONNELLAN EAST	Muine Chonalláin Thoir	MAYO	15	0	11	1	27
BUNNYCONNELLAN WEST	Muine Chonalláin Thiar	MAYO	118	7	18	6	149
BUNREE	Bun Riabh	MAYO	109	2	1	6	118
CABRAGH	An Chabrach	MAYO	3	0	2	0	5
CAHER	An Chathair	MAYO	26	0	2	4	32
CALLOW	An Caladh	MAYO	52	4	3	8	67
CAPPANAGLOGH	Ceapach na gCloch	MAYO	0	0	0	0	0
CAPPULCORRAGH	Capall Corrach	MAYO	10	0	1	0	11
CARHA	An Cairthe	MAYO	21	2	11	5	39
CARN	An Carn	MAYO	4	0	1	0	5
CARN	An Carn	MAYO	1	0	0	0	1
CARRICK	An Charraig	MAYO	11	1	4	0	16
CARROWBAUN	An Cheathrú Bhán	MAYO	13	1	2	5	21
CARROWBEG	An Cheathrú Bheag	MAYO	3	0	1	3	7
CARROWBEG	An Cheathrú Bheag	MAYO	101	7	2	3	113
CARROWBEG	An Cheathrú Bheag	MAYO	16	0	7	2	25
CARROWCANADA	Ceathrú Cheannada	MAYO	41	2	6	4	53
CARROWCASTLE	Ceathrú an Chaisleáin	MAYO	26	2	16	5	49
CARROWCONEEN	Ceathrú Uí Choinín	MAYO	1	0	0	0	1
CARROWCROM	An Cheathrú Chrom	MAYO	17	0	15	2	34
CARROWCUSHLAUN	Ceathrú an Chaisleáin	MAYO	28	1	4	6	39
CARROWCUSHLAUN WEST	Ceathrú an Chaisleáin Thiar	MAYO	37	5	0	11	53
CARROWDOOGAN	Ceathrú Mhic Dhubháin	MAYO	4	0	3	1	8
CARROWEENY	Ceathrú Fhíne	MAYO	7	0	2	5	14
CARROWGARVE	An Cheathrú Gharbh	MAYO	6	0	4	3	13
CARROWKERIBLY	Ceathrú Mhic Geirble	MAYO	34	0	9	5	48
CARROWLEAGH	Ceathrú Bhlaoch	MAYO	7	1	9	4	21
CARROWLIAM BEG	Ceathrú Liam Bheag	MAYO	9	0	5	4	18
CARROWLIAM MORE	Ceathrú Liam Mhór	MAYO	7	0	2	4	13

TOWNLAND NAME (ENGLISH)	GAEILGE	COUNTY	RESIDENTIAL ADDRESSES	COMMERCIAL ADDRESSES	BOTH (RESIDENTIAL AND COMMERCIAL	UNKNOWN CATEGORY	TOTAL BUILDINGS WITH AN ADDRESS
CARROWMORE	An Cheathrú Mhór	MAYO	15	1	2	3	21
CARROWMORE	An Cheathrú Mhór	MAYO	2	0	1	0	3
CARROWMORE	An Cheathrú Mhór	MAYO	2	0	2	0	4
CARROWMOREMOY	Ceathrú Mhór Mhuaidhe	MAYO	12	0	2	1	15
CARROWNACROSS	Ceathrú na Croise	MAYO	9	0	0	1	10
CARROWNACULLA	Ceathrúin Uí Cholla	MAYO	9	0	6	4	19
CARROWNAGEERAGH	Ceathrú na gCaorach	MAYO	1	0	0	0	1
CARROWNAGLOGH	Ceathrú na gCloch	MAYO	28	0	18	17	63
CARROWNEDEN	Ceathrú an Éadain	MAYO	12	0	1	5	18
CARROWNLABAUN	Ceathrú an Lábáin	MAYO	41	0	20	6	67
CARROWNLACKA	Ceathrú Leacaí	MAYO	24	0	8	2	34
CARROWNTOBER	Ceathrú an Tobair	MAYO	2	0	0	1	3
CARROWNTREILA	Ceathrú an Traighle	MAYO	25	2	8	1	36
CARROWREAGH	An Cheathrú Riabhach	MAYO	25	1	16	5	47
CARROWREAGH	An Cheathrú Riabhach	MAYO	10	0	1	2	13
CARROWVANEEN	Ceathrú Mhainnín	MAYO	7	0	7	1	15
CARTRON	An Cartún	MAYO	6	0	2	1	9
CARTRON	An Cartún	MAYO	13	0	2	7	22
CARTRON	An Cartún	MAYO	9	0	0	0	9
CARTRONMACMANUS	Cartún Mhic Mhánais	MAYO	4	0	0	0	4
CASHEL	An Caiseal	MAYO	15	0	7	2	24
CASHEL	An Caiseal	MAYO	18	0	1	4	23
CASHELDUFF	An Caiseal Dubh	MAYO	21	4	6	1	32
CASHELLAHENNY	Caiseal Aithinne	MAYO	7	0	1	1	9
CASTLEBARNAGH	Caiseal Bearnach	MAYO	4	0	5	1	10
CASTLECONOR	Caisleán Mhic Conchúir	MAYO	7	0	3	0	10
CASTLECRUNNOGE	Caiseal Cruinneog	MAYO	8	0	4	0	12
CASTLEROYAN	Caiseal Ruaín	MAYO	16	0	2	1	19
CASTLESHEENAGHAN	Caiseal Síonacháin	MAYO	19	1	4	3	27
CLOGHANS	An Clochán	MAYO	31	2	3	2	38
CLOGHVOLEY	An Chlochbhuaile	MAYO	7	2	3	1	13
CLOONACANNANA	Cluain na Ceannainne	MAYO	18	0	4	2	24
CLOONACAUNA	Cluain na Cána	MAYO	0	0	0	0	0
CLOONAGALLOON	Cluain na nGealbhan	MAYO	2	0	0	1	3
CLOONAGH MORE	Cluanach Mór	MAYO	5	0	5	1	11
CLOONAGHBOY	Cluanach Buí	MAYO	16	2	4	1	23
CLOONAINRA	Cluain Éanra	MAYO	3	0	1	1	5
CLOONAKILLINA	Cluain Mhic Giolla Chainnigh	MAYO	0	0	0	1	1
CLOONALISON	Cluain an Liosáin	MAYO	8	0	0	1	9
CLOONAWEEMA	Cluain an Mhadhma	MAYO	14	0	3	0	17
CLOONCAH	Cluain Catha	MAYO	1	0	1	0	2

TOWNLAND NAME (ENGLISH)	GAEILGE	COUNTY	RESIDENTIAL ADDRESSES	COMMERCIAL ADDRESSES	BOTH (RESIDENTIAL AND COMMERCIAL	UNKNOWN CATEGORY	TOTAL BUILDINGS WITH AN ADDRESS
CLOONCARHA	Cluain Cárthaigh	MAYO	19	0	3	3	25
CLOONCLEEVRAGH	Cluain Cliabhrach	MAYO	6	0	1	1	8
CLOONCOUS	Cluain Cuas	MAYO	9	0	2	0	11
CLOONEIGH	Cluain Eich	MAYO	2	0	4	0	6
CLOONFANE	Cluain Féan	MAYO	13	0	4	2	19
CLOONFAULUS	Cluain Fálas	MAYO	3	0	2	3	8
CLOONFEAGHRA	Cluain Fiachra	MAYO	9	0	2	2	13
CLOONFEAGHRA	Cluain Fiachra	MAYO	9	0	2	2	13
CLOONFEIGHTRIN	Cluain Feachtrainn	MAYO	7	1	4	0	12
CLOONFINISH	Cluain Finnis	MAYO	10	0	6	3	19
CLOONFINNAUN	Cluain Fionnáin	MAYO	19	0	2	2	23
CLOONGLASNEY	Cluain Glaisne	MAYO	7	2	5	0	14
CLOONGULLAUN	Cluain Gallán	MAYO	23	0	4	5	32
CLOONIERIN	Cluain Uidhrín	MAYO	18	0	6	3	27
CLOONINSHIN	Cluain Uinsinn	MAYO	9	0	2	1	12
CLOONLARA	Cluain Lára	MAYO	25	1	0	2	28
CLOONLARHAN	Cluain Láirthinn	MAYO	7	0	6	5	18
CLOONLUMNEY	Cluain Luimnigh	MAYO	10	0	1	0	11
CLOONLYON	Cluain Laighean	MAYO	11	1	2	0	14
CLOONMEEN EAST	Cluain Mín Thoir	MAYO	10	0	2	2	14
CLOONMEEN WEST	Cluain Mín Thiar	MAYO	1	0	0	0	1
CLOONMORE	Cluain Mór	MAYO	9	0	2	0	11
CLOONMUNG	Cluain Mong	MAYO	4	0	2	0	6
CLOONNAMNA	Cluain Anama	MAYO	20	1	6	1	28
CLOONSLAUN	Cluain Easlán	MAYO	16	0	5	6	27
CLOONTA	Na Cluainte	MAYO	9	0	6	2	17
CLOONTALLY	Cluain Taithligh	MAYO	0	0	0	0	0
CLOONTARRIFF	Cluain Tairbh	MAYO	2	0	2	1	5
CLOONTUBBRID	Cluain Tiobraide	MAYO	8	0	1	2	11
CLOONTURK	Cluain Torc	MAYO	4	0	1	1	6
CLOONTURK	Cluain Torc	MAYO	12	1	5	1	19
CLOONTYKILLEW	Cluainte Cilleadh	MAYO	10	0	3	1	14
CLOONYARIGAUN	Cluain Uí Dheargáin	MAYO	8	0	5	6	19
CLOONYGOWAN	Cluain Uí Ghabhann	MAYO	7	0	0	0	7
CLOONYGUNNAUN	Cluain Uí Dhonnáin	MAYO	1	0	1	0	2
CLOONYVOLLOW	Cluain Uí Mhaolmhuaidh	MAYO	6	0	0	0	6
CLOSSAGHROE	An Chlasach Rua	MAYO	11	0	2	4	17
COLLADUSSAUN	Caladh an Dosáin	MAYO	14	0	7	4	25
COLLAGH	Callach	MAYO	7	1	3	2	13
COMMONS	An Coimín	MAYO	132	3	3	1	139
COOLCASHLA	Cúil Chaisle	MAYO	3	0	1	1	5

TOWNLAND NAME (ENGLISH)	GAEILGE	COUNTY	RESIDENTIAL ADDRESSES	COMMERCIAL ADDRESSES	BOTH (RESIDENTIAL AND COMMERCIAL	UNKNOWN CATEGORY	TOTAL BUILDINGS WITH AN ADDRESS
COOLCRAN	Cúil Chrainn	MAYO	4	0	3	1	8
COOLCRAN	Cúil Chrainn	MAYO	20	1	2	1	24
COOLCRONAUN	Cúil Chrónáin	MAYO	32	0	4	3	39
COOLLAGAGH	An Chúil Logach	MAYO	25	1	8	4	38
CORGARRIFF	An Chorr Gharbh	MAYO	7	0	8	1	16
CORIMLA NORTH	Corr Imligh Íochtair	MAYO	6	0	2	0	8
CORIMLA SOUTH	Corr Imligh Uachtair	MAYO	62	0	23	5	90
CORLEE	An Chorr Liath	MAYO	9	1	3	1	14
CORNAGEEHA	Corr na Gaoithe	MAYO	14	0	2	0	16
CORNAVEAGH	Corr na bhFiach	MAYO	1	0	2	0	3
CORRADRISHY	An Chorr Dhriseach	MAYO	20	1	3	6	30
CORRAGOOLY	Corr an Ghualaigh	MAYO	7	0	3	1	11
CORRAVEGGAUN EAST	Corr Bheagáin Thoir	MAYO	11	0	3	0	14
CORRAVEGGAUN WEST	Corr Bheagáin Thiar	MAYO	36	2	4	2	44
CORROWER	Corr Odhar	MAYO	34	0	10	5	49
CORROY	Corr Ráithe	MAYO	22	1	2	1	26
CRAGAGH	An Chreagach	MAYO	4	0	2	0	6
CRAGGERA	An Cnagaire	MAYO	2	0	1	0	3
CRANMORE	An Crann Mór	MAYO	16	0	3	2	21
CRANNAGH	An Chrannach	MAYO	4	0	3	2	9
CREGGABALLAGH	An Chreag Bhallach	MAYO	8	0	1	0	9
CREGGAGH	An Chreagach	MAYO	19	1	1	2	23
CREGGAUN	An Creagán	MAYO	8	0	0	0	8
CREGGAUN	An Creagán	MAYO	5	0	2	1	8
CREGNAFYLA	Creig na Feighle	MAYO	2	1	1	0	4
CROFTONPARK	An Pháirc	MAYO	19	0	10	2	31
CUILDOO	An Choill Dubh	MAYO	17	0	0	0	17
CUILLAUN	An Coilleán	MAYO	45	0	6	3	54
CUILLONAGHTAN	Coill Ó Neachtain	MAYO	36	0	8	4	48
CUILMORE	An Choill Mhór	MAYO	47	2	5	4	58
CUILTYBO	Coillte Bó	MAYO	4	0	5	0	9
CULLEENS	Na Coillíní	MAYO	156	6	9	7	178
CULLIAGH	An Choilleach	MAYO	15	0	4	0	19
CULLIN	Cuilleann	MAYO	8	0	3	7	18
CURRAGH	An Currach	MAYO	1	0	0	0	1
CURRYAUN	Corr Riáin	MAYO	8	0	4	4	16
DARHANAGH	Darthanach	MAYO	4	0	0	0	4
DERRAGH	Doire Each	MAYO	4	0	2	0	6
DERRYBRACK	Doire Breac	MAYO	3	0	0	0	3
DERRYCASHEL	Doire Caiseal	MAYO	13	0	0	1	14
DERRYCOOSH	Doire Chuais	MAYO	2	0	0	0	2

TOWNLAND NAME (ENGLISH)	GAEILGE	COUNTY	RESIDENTIAL ADDRESSES	COMMERCIAL ADDRESSES	BOTH (RESIDENTIAL AND COMMERCIAL	UNKNOWN CATEGORY	TOTAL BUILDINGS WITH AN ADDRESS
DERRYDORNEEN	Doire Dhoirnín	MAYO	3	0	2	1	6
DERRYGAY	Doire Ghé	MAYO	7	0	6	0	13
DERRYGULLINAUN	Doire Ó gCuileannáin	MAYO	4	0	3	1	8
DERRYKINLOUGH	Doire Cinn Locha	MAYO	8	1	4	0	13
DERRYMANNIN	Doire Mhanainn	MAYO	4	0	2	0	6
DERRYNABAUNSHY	Doirín na Báinsí	MAYO	3	0	0	1	4
DERRYNABROCK	Doire na mBroc	MAYO	15	1	13	12	41
DERRYNAGRAN	Doire na gCrann	MAYO	5	0	1	1	7
DERRYNALECK	Doire na Leice	MAYO	10	0	5	2	17
DERRYNAMUCK	Doire na Muice	MAYO	20	0	4	2	26
DERRYNARUD	Doire na Rod	MAYO	0	0	0	0	0
DERRYOOL	Doire Abhall	MAYO	5	0	1	2	8
DERRYRONAN	Doire Rónáin	MAYO	69	0	5	4	78
DERRYVICNEILL	Doire Mhic Néill	MAYO	2	0	0	1	3
DOOGARY	Dúdhoire	MAYO	10	0	4	1	15
DOONMAYNOR	Dún Méanúir	MAYO	17	0	3	3	23
DOONTY	Na Dúnta	MAYO	2	0	0	0	2
DOOYEAGHNY or CLOONLOUGHAN	Dumha Fhiachna nó Cluain an Locháin	MAYO	10	0	5	3	18
DROMADA (Duke)	Dromadaigh (Duke)	MAYO	13	0	7	2	22
DROMADA (Gore)	Dromadaigh (Gore)	MAYO	9	0	6	4	19
DROMADA (Joyce)	Dromadaigh (Joyce)	MAYO	6	0	4	1	11
DRUMAGH	Dromach	MAYO	5	0	1	1	7
DRUMALOOAUN	Droim an Luáin	MAYO	3	0	1	0	4
DRUMMIN	An Dromainn	MAYO	0	0	0	0	0
DRUMREVAGH	An Droim Riabhach	MAYO	86	2	5	3	96
DRUMSCOBA	Droim Scuabach	MAYO	5	0	2	1	8
DRUMSHEEN	Droim Síon	MAYO	22	0	5	5	32
DRUMSHINNAGH	Droim Sionnach	MAYO	17	0	1	1	19
ELLAGH BEG	An Oileach Bheag	MAYO	1	0	2	0	3
ELLAGH MORE	An Oileach Mhór	MAYO	13	0	7	3	23
ESKER	An Eiscir	MAYO	10	0	4	0	14
FAHEENS	Fathainí	MAYO	19	0	8	1	28
FALLEIGHTER	An Fál Íochtair	MAYO	31	0	9	3	43
FARRANDEELION	Fearann Díleann	MAYO	9	1	2	0	12
FARRANGARODE	Fearann Ghearóid	MAYO	23	0	5	1	29
FARRANMORGAN	Fearann Mhuireagáin	MAYO	5	0	4	1	10
FARRANNASCULLOGE	Fearann na Scológ	MAYO	5	0	7	0	12
FARRANNOO	An Fearann Nua	MAYO	13	1	5	0	19
FAULEENS	Na Fáilíní	MAYO	11	0	1	1	13
FLUGHANY	An Fhliuchmhuine	MAYO	5	0	6	1	12

TOWNLAND NAME (ENGLISH)	GAEILGE	COUNTY	RESIDENTIAL ADDRESSES	COMMERCIAL ADDRESSES	BOTH (RESIDENTIAL AND COMMERCIAL	UNKNOWN CATEGORY	TOTAL BUILDINGS WITH AN ADDRESS
FOXFORD	Ceathrú na Líne	MAYO	410	44	22	13	489
FRIARSTOWN	Baile na mBráthar	MAYO	26	0	3	2	31
GARRANKEEL	An Garrán Caol	MAYO	16	2	3	0	21
GARRYCLOONAGH	Garbhchluanach	MAYO	6	1	5	0	12
GLASTRASNA	Glais Trasna	MAYO	7	0	3	1	11
GLEBE	An Ghléib	MAYO	1	0	1	0	2
GLEBE	An Ghléib	MAYO	92	1	1	0	94
GLENDADUFF	Gleann Dá Dhubh	MAYO	11	0	4	1	16
GLENMULLYNAHA EAST	Gleann Mhullach an Ó Thoir	MAYO	13	0	6	3	22
GLENMULLYNAHA WEST	Gleann Mhullach an Ó Thiar	MAYO	27	0	4	2	33
GLENTAVRAUN	Gleann Teamhráin	MAYO	31	2	24	9	66
GORTASKIBBOLE	Gort an Sciobóil	MAYO	23	0	7	2	32
GORTATOGHER	Gort an Tóchair	MAYO	7	0	4	0	11
GORTEEN	An Goirtín	MAYO	87	4	3	1	95
GORTEENNAMUCK	Goirtín na Muc	MAYO	14	0	6	0	20
GORTNADREHY	Gort na Dreiche	MAYO	14	0	5	1	20
GORTNASILLAGH	Gort na Saileach	MAYO	5	0	1	1	7
GOWEL	An Ghabhail	MAYO	15	0	2	2	19
GOWLAUN	An Gabhlán	MAYO	16	3	9	2	30
GOWLAUN	An Gabhlán	MAYO	7	0	2	3	12
GRAFFY	Na Grafaí	MAYO	12	0	4	1	17
GRAFFY	Grafaidh	MAYO	6	0	1	1	8
GREENAUN	An Grianán	MAYO	3	0	3	3	9
JOHNSFORT	Lios Seáin Rua	MAYO	7	0	1	1	9
KILBRIDE	Cill Bhríde	MAYO	149	4	2	5	160
KILCASHEL	Coill an Chaisil	MAYO	9	3	2	0	14
KILDERMOT	Cill Diarmada	MAYO	2	0	2	0	4
KILGARRIFF	An Choill Gharbh	MAYO	13	1	4	6	24
KILGARRIFF WEST	An Choill Gharbh Thiar	MAYO	16	7	5	4	32
KILGARVAN	Cill na nGarbhán	MAYO	9	0	7	2	18
KILGELLIA	Cill Geille	MAYO	43	5	4	2	54
KILKELLY	Cill Cheallaigh	MAYO	62	10	13	3	88
KILLACLARE	Coill an Chláir	MAYO	12	0	2	1	15
KILLATURLY	Coill an Turlaigh	MAYO	30	0	12	2	44
KILLEEN	An Cillín	MAYO	0	0	0	0	0
KILLEEN	An Cillín	MAYO	17	0	1	2	20
KILLEEN	Na Coillíní	MAYO	34	3	2	4	43
KILMORE	An Choill Mhór	MAYO	85	4	17	10	116
KILMORE	An Choill Mhór	MAYO	20	0	3	2	25
KILMOREMOY	Cill Mhór Mhuaidhe	MAYO	282	4	7	2	295
KILMOVEE	Cill Mobhí	MAYO	43	3	3	1	50

TOWNLAND NAME (ENGLISH)	GAEILGE	COUNTY	RESIDENTIAL ADDRESSES	COMMERCIAL ADDRESSES	BOTH (RESIDENTIAL AND COMMERCIAL	UNKNOWN CATEGORY	TOTAL BUILDINGS WITH AN ADDRESS
KINAFF	Cionn Damh	MAYO	36	1	5	4	46
KNOCKANELO	Cnoc an Éaló	MAYO	9	0	2	3	14
KNOCKANILLAUN	Cnoc an Oileáin	MAYO	24	1	6	1	32
KNOCKATINNOLE	Cnoc an Tionóil	MAYO	4	0	3	2	9
KNOCKAVILLA	Cnoc an Bhile	MAYO	5	0	2	0	7
KNOCKBRACK	An Cnoc Breac	MAYO	7	0	2	3	12
KNOCKBRACK	An Cnoc Breac	MAYO	5	0	3	1	9
KNOCKDUFF	An Cnoc Dubh	MAYO	2	0	1	0	3
KNOCKEGAN and CLOONAGH BEG	Cnoc Mhic Aogáin agus Cluanach Beag	MAYO	3	1	1	1	6
KNOCKFADDA	An Cnoc Fada	MAYO	9	0	0	3	12
KNOCKLEHAUGH	An Cnoc Leitheach	MAYO	20	1	1	0	22
KNOCKMANAGH	An Cnoc Meánach	MAYO	5	0	0	0	5
KNOCKMORE	An Cnoc Mór	MAYO	75	4	8	2	89
KNOCKMULLIN	Cnoc an Mhuilinn	MAYO	3	0	1	0	4
KNOCKNALYRE or DOWNHILL	Cnoc na Ladhar	MAYO	177	2	4	2	185
KNOCKNASKEAGH	Cnoc na Sceach	MAYO	4	0	0	0	4
KNOCKRANNY	Cnoc Raithní	MAYO	9	0	1	1	11
KNOCKS	Na Cnoca	MAYO	4	0	1	0	5
KNOCKSBARRETT	Na Cnoic	MAYO	7	0	1	1	9
LAGCURRAGH	An Leathchurrach	MAYO	47	2	4	5	58
LAGHTADAWANNAGH	Leacht Dá Mhanach	MAYO	134	11	5	3	153
LAGHTMACDURKAN	Leachta Mhic Dhuarcáin	MAYO	10	0	13	1	24
LARGANMORE	An Leargain Mhór	MAYO	6	0	4	6	16
LAVY BEG	Leamhaigh Bheag	MAYO	234	23	14	3	274
LAVY MORE	Leamhaigh Mhór	MAYO	41	0	5	0	46
LECARROW	An Leithcheathrú	MAYO	12	0	2	1	15
LECKEE	Leic Aodha	MAYO	13	0	4	3	20
LEVEELICK	Liath Mhílic	MAYO	6	0	1	0	7
LISBAUN	An Lios Bán	MAYO	5	0	1	1	7
LISBROGAN	Lios Bragáin	MAYO	8	0	3	0	11
LISCOSKER	Lios Choscraigh	MAYO	21	1	1	3	26
LISCOTTLE	Lios Uí Choitil	MAYO	2	0	0	3	5
LISDUFF	An Lios Dubh	MAYO	10	0	4	6	20
LISDUFF	An Lios Dubh	MAYO	6	0	1	0	7
LISDURRAUN	Lios Doráin	MAYO	4	0	0	2	6
LISDUVOGE	Lios Dubhóige	MAYO	24	1	2	1	28
LISHEENABRONE	Lisín na Brón	MAYO	20	0	5	5	30
LISLACKAGH	An Lios Leacach	MAYO	16	0	3	1	20
LISLAUGHNA	Lios Lachna	MAYO	5	0	1	1	7
LISMAGANSHION	Lios Mhig Ainsean	MAYO	4	0	0	0	4

TOWNLAND NAME (ENGLISH)	GAEILGE	COUNTY	RESIDENTIAL ADDRESSES	COMMERCIAL ADDRESSES	BOTH (RESIDENTIAL AND COMMERCIAL	UNKNOWN CATEGORY	TOTAL BUILDINGS WITH AN ADDRESS
LISMORAN	Lios Mearáin	MAYO	20	1	1	2	24
LISNAGROSS	Lios na gCros	MAYO	2	1	0	0	3
LISSANISKA EAST	Lios an Uisce Thoir	MAYO	23	2	3	5	33
LISSANISKA WEST	Lios an Uisce Thiar	MAYO	18	0	5	4	27
LISSANUMERA	Lios an Iomaire	MAYO	6	0	1	1	8
LISSARD MORE	An Lios Ard Mór	MAYO	0	0	0	0	0
LISSYMULGEE	Lios Uí Mhaolghaoithe	MAYO	9	0	3	1	13
LISTERNAN	Lios Tiarnáin	MAYO	18	3	1	0	22
LOOBNAMUCK	Lúb na mBac	MAYO	4	0	0	0	4
LOWPARK	Béal Átha na Sróna	MAYO	241	26	19	8	294
LUGNAMANNOW	Log na mBanbh	MAYO	0	0	0	0	0
LURGA LOWER	An Lorgain Íochtarach	MAYO	17	0	11	2	30
LURGA UPPER	An Lorgain Uachtarach	MAYO	13	0	8	3	24
LURGAN	An Lorgain	MAYO	5	0	7	1	13
MAGHERABOY	An Machaire Buí	MAYO	21	0	11	5	37
MAGHERABOY	An Machaire Buí	MAYO	2	0	3	2	7
MEELICK	Míleac	MAYO	3	0	1	2	6
MOORBROOK	An Bac Fada	MAYO	4	0	0	0	4
MULLAGHAWNY	Mullach Thamhnaí	MAYO	21	0	9	3	33
MULLAUNS	Na Mulláin	MAYO	303	8	11	2	324
MULLAUNS	Na Mulláin	MAYO	11	0	1	1	13
MULLENMADOGE	Muileann Mádóg	MAYO	12	0	4	4	20
NEWCASTLE	An Caisleán Nua	MAYO	16	0	4	0	20
NEWPARK	An Pháirc Nua	MAYO	214	23	3	2	242
NEWTOWN	An Baile Úr	MAYO	19	0	7	0	26
NURE	An tlúr	MAYO	0	0	1	0	1
OLDCASTLE	Béal Átha Each	MAYO	16	0	0	2	18
PARK	An Pháirc	MAYO	4	0	0	2	6
POLLNAGAWNA	Poll na nGamhna	MAYO	4	0	1	0	5
POLLSHARVOGE	Poll Searbhóg	MAYO	15	0	3	1	19
PREBAUN	An Preabán	MAYO	5	0	1	0	6
PUNTABEG	An Punta Beag	MAYO	2	0	2	0	4
QUIGNALECKA	Cúige na Leice	MAYO	501	5	12	3	521
QUIGNALEGAN	Cúige an Liagáin	MAYO	15	1	5	0	21
QUIGNAMANGER	Cúige na Mainséar	MAYO	139	6	4	0	149
QUIGNASHEE	Cúige na Sí	MAYO	25	1	12	1	39
RABAUN	An Ráth Bán	MAYO	6	0	7	3	16
RAHANS	Na Rathanna	MAYO	75	7	2	0	84
RAHEROLUS	Ráth Fhireolais	MAYO	2	0	2	1	5
RAISH	An Réise	MAYO	2	0	1	0	3
RANAGISSAUN	Ráth na nGiosán	MAYO	13	0	4	2	19

TOWNLAND NAME (ENGLISH)	GAEILGE	COUNTY	RESIDENTIAL ADDRESSES	COMMERCIAL ADDRESSES	BOTH (RESIDENTIAL AND COMMERCIAL	UNKNOWN CATEGORY	TOTAL BUILDINGS WITH AN ADDRESS
RANARANNY	Ráth na Raithní	MAYO	0	0	1	0	1
RATH	An Ráith	MAYO	19	0	13	3	35
RATHBAUN	An Ráth Bhán	MAYO	10	1	7	0	18
RATHBAUN	An Ráth Bhán	MAYO	3	0	2	1	6
RATHDONNELL	Ráth Dónaill	MAYO	2	0	1	0	3
RATHDUFF	An Ráth Dhubh	MAYO	7	1	5	1	14
RATHKIP	Ráth Gioba	MAYO	59	0	8	1	68
RATHMEEL	An Ráth Mhaol	MAYO	12	0	2	0	14
RATHNACONEEN	Ráth na gCoinín	MAYO	30	7	8	2	47
RATHREEDAUN	Ráth Raodáin	MAYO	30	0	13	2	45
RATHROEEN	Ráth Ruaín	MAYO	27	2	5	5	39
RATHSCANLAN	Ráth Scanláin	MAYO	125	3	1	2	131
RINAGRY	Rinn na Graí	MAYO	16	0	8	0	24
RINAKILLEEN	Rinn an Chillín	MAYO	1	0	0	0	1
RINBRACK	An Rinn Bhreac	MAYO	19	0	2	1	22
RINMORE	An Rinn Mhór	MAYO	5	0	4	0	9
RINN	An Rinn	MAYO	9	0	0	1	10
RINNANANNY	Rinn an Eanaigh	MAYO	44	0	5	2	51
ROOSKY	Rúscaigh	MAYO	31	3	20	12	66
ROOSKY	Rúscaigh	MAYO	20	1	4	4	29
RUBBLE	An Ruball	MAYO	11	1	0	1	13
RUSHEENS EAST	An Roisín Thoir	MAYO	6	0	4	0	10
RUSHEENS WEST	An Roisín Thiar	MAYO	2	0	3	1	6
SCOTCHFORT	Ráth na nAlbanach	MAYO	4	0	4	0	8
SHAMMERBAUN	An Seamar Bán	MAYO	10	1	8	1	20
SHAMMERDOO	An Seamar Dubh	MAYO	14	0	11	6	31
SHANCLOGH	An tSeanchloch	MAYO	4	0	4	0	8
SHANNASMORE	An Seanmhás Mór	MAYO	12	1	5	2	20
SHANVALLY	An Seanbhaile	MAYO	29	0	5	1	35
SHANWAR	An Seanbharr	MAYO	15	0	4	4	23
SKEHEEN	An Sceichín	MAYO	10	0	2	3	15
SLIEVENAGARK	Sliabh na gCearc	MAYO	10	0	6	1	17
SONNAGH	An Sonnach	MAYO	42	2	4	11	59
SONVOLAUN	Sanúlán	MAYO	25	0	0	2	27
SPECK	Baile na Speice	MAYO	3	0	2	1	6
SRAH	An Srath	MAYO	1	0	1	0	2
SRAH LOWER	An tSraith Íochtarach	MAYO	11	0	0	1	12
SRAH UPPER	An tSraith Uachtarach	MAYO	13	0	1	0	14
SRAHEEN	An Sraithín	MAYO	48	1	2	3	54
SRAHEENS	Na Sraithíní	MAYO	9	0	1	2	12
STONEHALL	Halla na Cloiche	MAYO	29	0	2	0	31

TOWNLAND NAME (ENGLISH)	GAEILGE	COUNTY	RESIDENTIAL ADDRESSES	COMMERCIAL ADDRESSES	BOTH (RESIDENTIAL AND COMMERCIAL	UNKNOWN CATEGORY	TOTAL BUILDINGS WITH AN ADDRESS
STRIPE	An Straidhp	MAYO	2	0	1	0	3
SWINEFORD	Béal Átha na Muice	MAYO	247	71	56	12	386
TAVRAUN	Teamhrán	MAYO	24	1	11	3	39
TAWNAGHBEG	An Tamhnach Bheag	MAYO	2	0	8	4	14
TAWNAGHMORE	An Tamhnach Mhór	MAYO	84	0	10	6	100
TAWNAGLASS	An Tamhnach Ghlas	MAYO	11	1	5	0	17
TAWNAMULLAGH	Tamhnach Mhullach	MAYO	0	0	1	0	1
TAWNYINAH LOWER	Tamhnaigh an Fheá Íochtarach	MAYO	8	1	1	3	13
TAWNYINAH MIDDLE	Tamhnaigh an Fheá Láir	MAYO	5	0	5	0	10
TAWNYINAH UPPER	Tamhnaigh an Fheá Uachtarach	MAYO	14	1	3	1	19
TEMPLE	An Teampall	MAYO	5	0	1	0	6
TIRANINNY	Tír an Fhionnaidh	MAYO	7	0	5	0	12
TOMBOHOLLA	Tuaim Bhoth Chomhla	MAYO	23	1	5	6	35
TONNAGH	An Tonnach	MAYO	12	1	3	4	20
TONROE	An Tóin Rua	MAYO	2	0	2	0	4
TONROE	An Tóin Rua	MAYO	9	1	2	2	14
TONYBAUN	An Tónaigh Bhán	MAYO	16	0	5	1	22
TOOMORE	Tuaim Mhór	MAYO	20	1	1	1	23
TOORARD	An Tuar Ard	MAYO	6	0	0	0	6
TREANACALLY or HAGFIELD	Trian na Caillí	MAYO	43	1	12	3	59
TREANLAUR	An Trian Láir	MAYO	2	0	0	0	2
TREANLAUR	An Trian Láir	MAYO	12	3	11	2	28
TREANOUGHTER	An Trian Uachtair	MAYO	2	0	3	1	6
TREANREVAGH	An Trian Riabhach	MAYO	8	0	0	1	9
TROUTHILL or KNOCKBRACK	An Cnoc Breac	MAYO	5	0	0	2	7
TULLANACORRA	Tulaigh na Cora	MAYO	18	0	7	1	26
TULLEAGUE	Tulaigh Liag	MAYO	5	0	0	1	6
TULLYEGAN	Tulaigh Mhic Aogáin	MAYO	8	0	4	1	13
TULLYGANNY	Tulaigh Ghainimh	MAYO	2	0	2	1	5
TULLYNAHOO	Tulaigh na hUamha	MAYO	18	1	9	2	30
TULLYROE	An Tulaigh Rua	MAYO	4	0	1	0	5
TULLYSLEVA	Tulaigh Chléibhe	MAYO	17	2	3	1	23
TUMGESH	Tuaim Dheise	MAYO	14	0	1	2	17
UGGOOL	Ogúl	MAYO	17	0	3	2	22
UMMOON	Iomún	MAYO	15	1	2	1	19
URLAUR	Urlár	MAYO	28	3	13	4	48
WOODFIELD	Cluain Mhic Coiligh	MAYO	10	0	3	1	14
WOODS	Na Coillte	MAYO	7	0	3	0	10
ARDKILL		ROSCOMMON	10	0	3	1	14
ATTIANTAGGART		ROSCOMMON	4	0	0	0	4

TOWNLAND NAME (ENGLISH)	GAEILGE	COUNTY	RESIDENTIAL ADDRESSES	COMMERCIAL ADDRESSES	BOTH (RESIDENTIAL AND COMMERCIAL	UNKNOWN CATEGORY	TOTAL BUILDINGS WITH AN ADDRESS
BALLAGHADERREEN	Bealach an Doirín	ROSCOMMON	550	111	49	30	740
BALLYMAGING or CASTLEMORE		ROSCOMMON	16	0	8	0	24
BALLYOUGHTER		ROSCOMMON	42	0	3	2	47
BANADA		ROSCOMMON	13	0	0	3	16
BARNABOY		ROSCOMMON	24	0	6	1	31
BOCKAGH	Bocach	ROSCOMMON	8	0	2	0	10
BOGHTADUFF		ROSCOMMON	32	2	6	3	43
BOHALAS	Bothailios	ROSCOMMON	20	0	4	0	24
BOLEYSILLAGH		ROSCOMMON	1	0	0	1	2
BROGHER		ROSCOMMON	5	0	1	2	8
CALVEAGH LOWER	Cailbhe Íochtarach	ROSCOMMON	7	0	1	0	8
CALVEAGH UPPER	Cailbhe Uachtarach	ROSCOMMON	0	0	1	0	1
CASHELARD		ROSCOMMON	7	0	4	2	13
CASHELCOLAUN	Caiseal Cheoláin	ROSCOMMON	11	0	1	2	14
CLOONAVULLAUN		ROSCOMMON	1	0	0	0	1
CLOONLUMNEY	Cluain Luimnigh	ROSCOMMON	51	1	18	11	81
CLOONMEEN		ROSCOMMON	0	0	4	0	4
COOLAGHTANE		ROSCOMMON	1	0	1	0	2
COOLLENA		ROSCOMMON	5	0	3	0	8
CREGGAN		ROSCOMMON	9	0	9	2	20
CROSS NORTH		ROSCOMMON	0	0	0	0	0
CROSS SOUTH		ROSCOMMON	12	0	9	2	23
CRUNAUN		ROSCOMMON	18	2	9	2	31
CURRINAH	Corr an Fheá	ROSCOMMON	13	0	8	2	23
DERRYNACROSS		ROSCOMMON	2	0	2	1	5
DERRYNAGUR		ROSCOMMON	1	0	2	0	3
DERRYNANAFF	Doire na nDamh	ROSCOMMON	1	0	0	2	3
DOOGARY		ROSCOMMON	9	0	3	0	12
DRUMACOO		ROSCOMMON	8	0	9	3	20
DRUMNALASSAN		ROSCOMMON	29	0	9	3	41
FALLSOLLUS		ROSCOMMON	1	0	0	1	2
FRASNADEFFA		ROSCOMMON	3	0	1	1	5
FRIARSHILL	Cnocán an Bhráthar	ROSCOMMON	22	1	0	1	24
GLEBE		ROSCOMMON	7	0	0	0	7
GORTANURE	Gort na nlúr	ROSCOMMON	24	1	7	2	34
HAWKSFORD		ROSCOMMON	13	0	4	3	20
ISHLAUN		ROSCOMMON	27	1	3	2	33
ISLANDMORE	An tOileán Mór	ROSCOMMON	1	0	2	2	5
KILCOLMAN		ROSCOMMON	324	1	1	53	379
KILKEERAN		ROSCOMMON	3	0	6	1	10
KILLADANGAN		ROSCOMMON	11	1	2	1	15

TOWNLAND NAME (ENGLISH)	GAEILGE	COUNTY	RESIDENTIAL ADDRESSES	COMMERCIAL ADDRESSES	BOTH (RESIDENTIAL AND COMMERCIAL	UNKNOWN CATEGORY	TOTAL BUILDINGS WITH AN ADDRESS
KILVANLOON		ROSCOMMON	11	0	4	0	15
KNOCKANACONNY		ROSCOMMON	58	1	7	2	68
LARGAN		ROSCOMMON	8	1	2	0	11
LUNG	An Long	ROSCOMMON	74	21	3	7	105
MAGHERABOY		ROSCOMMON	2	1	3	3	9
POLLBOY	An Poll Buí	ROSCOMMON	9	0	1	1	11
TONREGEE	Tóin re Gaoith	ROSCOMMON	11	0	3	0	14
TOOBRACKAN		ROSCOMMON	7	2	11	3	23
TOOMANAGH		ROSCOMMON	16	1	0	0	17
TULLAGHANMORE or EDMONDSTOWN DEMESNE	An Tulachán Mór	ROSCOMMON	13	0	7	2	22
TULLAGHANROCK	An Tulachán Carrach	ROSCOMMON	15	0	13	2	30
ANNAGH	An tEanach	SLIGO	5	0	7	3	15
ANNAGHMORE	An tEanach Mór	SLIGO	5	1	4	0	10
BALLINCURRY	Baile an Churraigh	SLIGO	17	0	14	4	35
BANADA	Beannada	SLIGO	43	6	9	4	62
BELCLARE	Béal an Chláir	SLIGO	5	0	3	6	14
BELLAHY	Béal Lathaí	SLIGO	98	6	5	6	115
BUNNACRANAGH	Bun na Crannchа	SLIGO	58	0	17	12	87
CALTERAUN	Caillteannán	SLIGO	6	0	4	1	11
CARNS	An Carn	SLIGO	29	1	7	1	38
CARRAUN	An Corrán	SLIGO	9	0	4	2	15
CARRIGEENAGOWNA	Carraigín na nGamhna	SLIGO	5	2	2	1	10
CARROWNAGAPPUL	Ceathrú na gCapall	SLIGO	6	1	2	1	10
CARROWNLOBAUN	Ceathrú an Lóbáin	SLIGO	6	0	1	1	8
CARROWNTEMPLE	Ceathrú an Teampaill	SLIGO	5	0	6	2	13
CARROWREAGH	An Cheathrú Riabhach	SLIGO	5	0	4	2	11
CARROWWILKIN	Ceathrú Uilcín	SLIGO	13	1	7	0	21
CASHEL SOUTH	An Caiseal Theas	SLIGO	22	0	20	3	45
CASTLEROCK or CASTLECARRAGH	An Caisleán Carrach	SLIGO	9	0	5	1	15
CHACEFIELD	Coill Sealgáin	SLIGO	2	0	2	0	4
CLADDAGH	An Cladach	SLIGO	16	0	9	5	30
CLOGHER	An Clochar	SLIGO	19	1	17	1	38
CLOONANURE	Cluain an Iúir	SLIGO	3	0	2	1	6
CLOONBARRY	Cluain Bhearaigh	SLIGO	12	0	8	1	21
CLOONCA	Cluain Catha	SLIGO	2	0	3	0	5
CLOONEAGH	Cluain Eich	SLIGO	11	0	2	1	14
CLOONGOONAGH	Cluain gCuanach	SLIGO	9	0	5	2	16
CLOONINGAN	Cluain Iongan	SLIGO	11	0	6	1	18
CLOONLAHEEN	Cluain Leathchaoin	SLIGO	0	0	3	1	4
CLOONLAUGHIL	Cluain Leamhchoille	SLIGO	34	2	6	1	43

TOWNLAND NAME (ENGLISH)	GAEILGE	COUNTY	RESIDENTIAL ADDRESSES	COMMERCIAL ADDRESSES	BOTH (RESIDENTIAL AND COMMERCIAL	UNKNOWN CATEGORY	TOTAL BUILDINGS WITH AN ADDRESS
CLOONSILLAGH	Cluain Saileach	SLIGO	9	0	4	1	14
CLOONTYCARN	Cluainte Carn	SLIGO	9	0	6	1	16
CLOONYDIVEEN	Cluain Uí Dhuibhín	SLIGO	2	0	2	1	5
COOLRAWER	An Choill Ramhar	SLIGO	21	1	5	3	30
COOLRECUILL	Cúl re Coill	SLIGO	14	0	10	5	29
CORRAY	Corr Ráithe	SLIGO	4	1	5	2	12
CREEGHASSAUN	Críoch Chasáin	SLIGO	6	0	1	0	7
CUILMORE	An Choill Mhór	SLIGO	36	1	20	13	70
CUILPRUGHLISH	Coill Phrochlaise	SLIGO	3	0	2	0	5
CULDALY	Coill Dá Lao	SLIGO	8	0	6	2	16
CULLY	An Choillidh	SLIGO	12	0	4	2	18
CURRAGHBONAUN	Currach Bhunáin	SLIGO	18	0	9	2	29
CURRAGHBOY	An Currach Buí	SLIGO	6	0	0	0	6
CURRY	An Choraidh	SLIGO	46	8	14	7	75
DAWROS	Damhros	SLIGO	11	0	1	2	14
DOON	An Dún	SLIGO	37	0	12	8	57
DRIMINA	Droimeanaigh	SLIGO	17	0	7	5	29
DRUMBAUN	An Droim Bán	SLIGO	33	1	15	6	55
DRUMMARTIN	Droim Mártain	SLIGO	15	2	8	2	27
ESKRAGH	Na hEiscreacha	SLIGO	7	0	4	4	15
FALLEENS	Na Fáilíní	SLIGO	7	0	6	0	13
GLENNAWOO	Gleann na bhFuath	SLIGO	5	0	6	3	14
GORTEEN	Goirtín	SLIGO	90	6	7	3	106
GORTERMONE	Gort ar Móin	SLIGO	7	0	7	3	17
GORTERSLUIN	Gort ar Slinn	SLIGO	13	1	7	6	27
GORTYGARA	Gort Uí Ghadhra	SLIGO	8	0	1	4	13
GREYFIELD	An Cheathrú Riabhach	SLIGO	5	0	1	3	9
KILFREE	Cill Fraoigh	SLIGO	25	0	17	3	45
KILLURE	Cill Iúir	SLIGO	4	0	2	0	6
KILMACTEIGE	Cill Mhic Thaidhg	SLIGO	25	8	19	5	57
KILSTRAGHLAN or RAGWOOD	Coill Streachláin	SLIGO	8	0	1	2	11
KINCUILLEW	Cionn Coilleadh	SLIGO	6	0	6	1	13
KNOCKAHONEY	Cnoc an Chónaí	SLIGO	3	0	1	3	7
KNOCKBRACK	An Cnoc Breac	SLIGO	10	0	6	2	18
KNOCKNAHOO	Cnoc na hUamha	SLIGO	3	0	2	1	6
KNOCKNASHAMMER	Cnoc na Seamar	SLIGO	16	2	5	2	25
KNOCKNASKEAGH	Cnoc na Sceach	SLIGO	11	0	8	3	22
KNOCKNASLIGGAUN	Cnoc na Sligeán	SLIGO	0	0	0	0	0
LARGAN	An Leargain	SLIGO	5	1	1	1	8
LETTERBRONE	Leitir Brón	SLIGO	3	0	7	1	11
LISBALEELY	Lios Bhallaíle	SLIGO	17	2	4	1	24

TOWNLAND NAME (ENGLISH)	GAEILGE	COUNTY	RESIDENTIAL ADDRESSES	COMMERCIAL ADDRESSES	BOTH (RESIDENTIAL AND COMMERCIAL	UNKNOWN CATEGORY	TOTAL BUILDINGS WITH AN ADDRESS
LISLEA	An Lios Liath	SLIGO	31	4	6	1	42
MEENAGLOGH	Mín na gCloch	SLIGO	1	0	0	4	5
MONASTERREDAN	Mainistir Réadáin	SLIGO	33	3	11	0	47
MONTIAGH	An Móinteach	SLIGO	43	1	15	4	63
MOUNTIRVINE	An Cnoc Mór	SLIGO	9	1	2	1	13
MOYDOUGH	Maigh Duach	SLIGO	7	0	2	0	9
MOYGARA	Maigh Uí Ghadhra	SLIGO	31	1	3	5	40
MOYLOUGH	Maigh Locha	SLIGO	26	3	24	5	58
MULLAGHROE	An Mullach Rua	SLIGO	18	2	6	3	29
MWEELROE	An Mhaoil Rua	SLIGO	7	0	2	0	9
OUGHAVAL	An Nuachabháil	SLIGO	6	0	3	1	10
OUNAGH	Uamhnacha	SLIGO	0	0	2	0	2
RATHMADDER	Ráth Meadair	SLIGO	141	15	8	4	168
RATHMAGURRY	Ráth Mhac gCorra	SLIGO	13	1	7	1	22
SANDYHILL	Cnoc an Ghainimh	SLIGO	31	1	1	3	36
SEEFIN	Suí Finn	SLIGO	4	0	5	0	9
SRAGH	An tSraith	SLIGO	3	0	1	0	4
SROOVE	An tSrúibh	SLIGO	38	0	24	7	69
TAWNANEILLEEN	Tamhnaigh an Éillín	SLIGO	0	0	0	0	0
TAWNYMUCKLAGH	Tamhnaigh na Muclach	SLIGO	32	2	18	0	52
TOBERRODDY	Tobar Roda	SLIGO	3	0	6	0	9
TOORLESTRAUN	Tuar Loistreáin	SLIGO	26	2	9	3	40
TULLAGHAGLASS	Na Tulacha Glasa	SLIGO	1	0	0	0	1
TULLANAGLUG	Tulaigh na gClog	SLIGO	21	0	7	5	33
TULLYMOY	Tulaigh Mhuaidhe	SLIGO	9	0	2	0	11
		TOTALS	**16202**	**1130**	**2838**	**1365**	**21535**

Source: compiled by Mott MacDonald

C. Step 4A Constraints Mapping

D. Enhanced Matrix for OHL and UGC Corridor Options

Table D.15: Enhanced Matrix for OHL and UGC Corridor Options

Criteria	Sub-Criteria	OHL Option A	OHL Option B	OHL Option C	OHL Option D	UGC Option 1	UGC Option 2	UGC Option 3
Technical Performance	System Reliability							
	Expansion/Extendibility							
	Repeatability							
	Technical/Operation Risk							
Combined Technical Performance								
Economic Performance								
Environmental Performance	Biodiversity							
	Surface Water							
	Ground Conditions							
	Material Assets							
	Land Cover							
	Landscape and Visual							
	Archaeological, Architectural & Cultural Heritage							
	Noise							
Combined Environmental Performance								
Social Performance	Settlements							
	Communities							
	Recreation and Tourism							
	Cultural Resources & Sense of Place							
	Nuisance							
	Visual Impacts							
	Land Use							
Combined Social Performance								

Criteria	Sub-Criteria	OHL Option A	OHL Option B	OHL Option C	OHL Option D	UGC Option 1	UGC Option 2	UGC Option 3
Deliverability Performance	Implementation Timelines							
	Project Plan Flexibility							
	Dependence on Other Projects							
	Permits & Wayleaves							
	Design Complexity							
Overall Deliverability Performance								
Overall Performance								

E. Emerging Best Performing Option Corridor Mapping

mottmac.com

mottmac.com