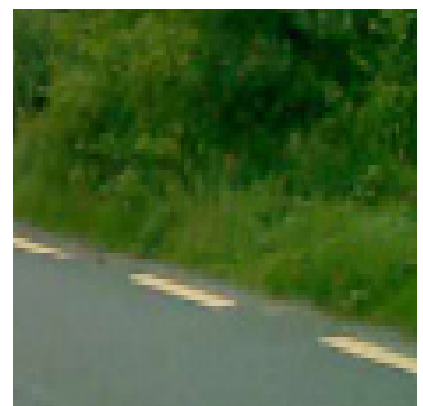
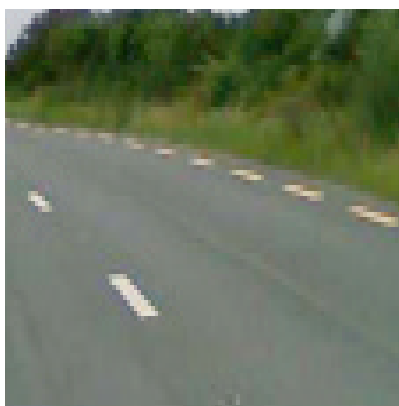
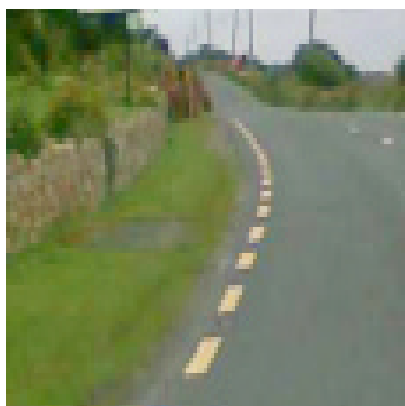
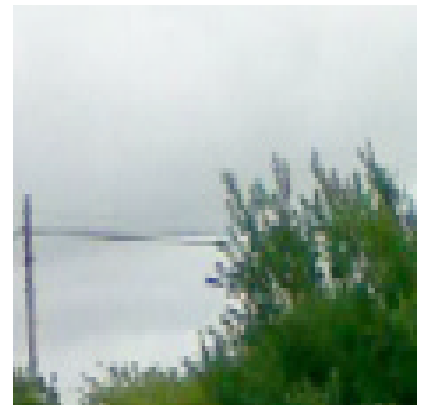
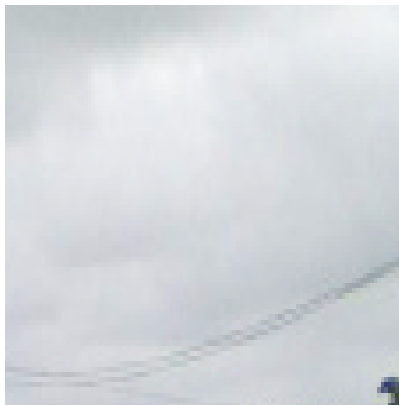
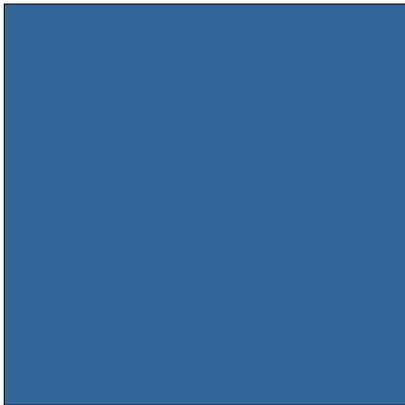
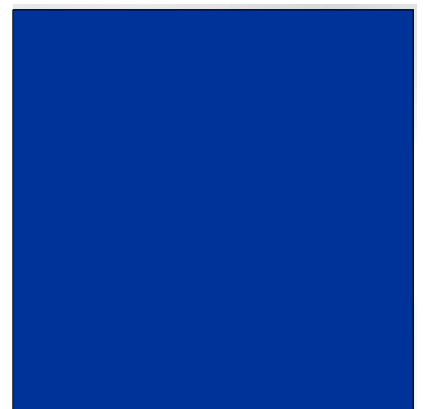


# National Secondary Roads Needs Study

## Network Options Report

### North Region









# NATIONAL SECONDARY ROAD NEEDS STUDY

## Network Options Report North Region

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## APPENDICES

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### APPENDIX B – Illustration of Problems and Illustration of Possible Solutions

### APPENDIX C – Scheme Sheets and PABS for Cycling and Walking Options

## Abbreviations

AADT	=	Annual Average Daily Traffic
BCR	=	Benefit Cost Ratio
CAF	=	Common Appraisal Framework
CBA	=	Cost Benefit Analysis
CIF	=	Construction Industry Federation
COBA	=	A cost benefit analysis software programme
CRTN	=	Calculation of Road Traffic Noise
DCRGA	=	Department of Community, Rural and Gaeltacht Affairs
DMRB	=	Design Manual for Roads and Bridges
DoT	=	Department of Transport
DfT	=	Department for Transport (UK)
DETR	=	Department of the Environment, Transport and the Regions (UK)
EFT	=	Emission Factor Toolkit
END	=	Environmental Noise Directive
EPA	=	Environment Protection Agency
ESRI	=	Economic and Social Research Institute
EU	=	European Union
FTE	=	Full-time Equivalent
GIS	=	Geographic Information System
GDA	=	Greater Dublin Area
HDV	=	Heavy Duty Vehicle
HGV	=	Heavy Goods Vehicle
IAN	=	Interim Advice Note
IEMA	=	Institute of Environmental Management and Assessment
IOA	=	Institute of Acoustics
IRI	=	International Roughness Index
LDV	=	Light Duty Vehicle
km	=	Kilometre
LGV	=	Light Goods Vehicle
MCA	=	Multi-Criteria Analysis
MIU	=	Major Inter-Urban Route
NAEI	=	National Atmospheric Emission Inventory
NAPS	=	National Anti-Poverty Strategy
NDP	=	National Development Plan
NHA	=	Natural Heritage Area
NPR	=	National Primary Route
NPV	=	Net Present Value
NRA	=	National Roads Authority



NSR	=	National Secondary Road
NSRNS	=	National Secondary Road Needs Study
NSS	=	National Spatial Strategy
PABS	=	Programme Assessment Balance Sheet
PAG	=	Project Appraisal Guidelines
PIR	=	Potential Impact Rating
PM	=	Particulate Matter
PV	=	Present Value
PVB	=	Present Value of Benefits
PVC	=	Present Value of Costs
R&D	=	Research and Development
RPG	=	Regional Planning Guidelines
SAC	=	Special Area of Conservation
SEA	=	Strategic Environmental Assessment
SMART	=	Specific, Measurable, Agreed, Realistic and Time-dependent
SPA	=	Special Protection Areas
TUBA	=	A cost benefit analysis software programme
UK	=	United Kingdom
UN	=	United Nations
UNECE	=	United Nations Economic Commission for Europe
UNESCO	=	United Nations Educational, Scientific and Cultural Organisation
Veh	=	Vehicle
WFD	=	Water Framework Directive
WHO	=	World Health Organisation

## STRUCTURE OF NETWORK OPTIONS REPORT

The reporting of the network options for the National Secondary Roads Needs Study is divided into five regions namely North, East, South East, South West and West as follows:

**North:**

Cavan, Donegal, Leitrim, Longford, Monaghan, Sligo and Westmeath

**East:**

Kildare, Laois, Louth, Meath, Offaly, South Dublin and Wicklow

**South East:**

Carlow, Kilkenny, Tipperary North, Tipperary South, Waterford and Wexford

**South West:**

Cork, Kerry and Limerick

**West:**

Clare, Galway, Mayo and Roscommon

A separate report has been provided for each region, with Chapters 1, 3, 4 and 6 being common in all reports. In addition Sections 2.1 to 2.4, Sections 5.1 to 5.3, Sections 7.1 to 7.2, Sections 8.1 to 8.3 and Sections 9.1 to 9.5 inclusive are common in all reports.

This report deals with the North Region.

# 1 INTRODUCTION

## 1.1 BACKGROUND

Transport infrastructure, including road infrastructure, is an essential input into any modern economy. This is because roads are generally perceived to be a public good, which means they can be used by many producers and consumers at the same time without reducing their usefulness, albeit increased usage may result in lower speeds. Also, improvements in road infrastructure will not only produce direct economic and welfare benefits for individuals and businesses, but they can also produce wider economic benefits or externalities that benefit other individuals and businesses or society as a whole<sup>1</sup>.

Transport infrastructure can therefore make a significant contribution to economic growth and competitiveness. Furthermore, experience suggests that recent investment in transport improvements in Ireland has already made a substantial contribution to facilitating economic growth and development.

For example, the Economic and Social Research Institute (ESRI), in its Mid-term Evaluation of the NDP 2000-2006, highlights substantial returns to recent road infrastructure in Ireland. In particular, studies carried out as part of the Mid-term Evaluation suggest an implied realised rate of return for road investment (in terms of additional value added in manufacturing and services) of about 25%<sup>2</sup>. This represents a significant direct positive impact on output, and therefore a positive return.

## 1.2 NATIONAL ROAD NETWORK

The national road network as indicated in Figure 1.1 comprises approximately 5,450 km of roadway throughout Ireland, which represents some 6% of the entire public road network but carries 46% of the country's traffic. These national roads provide strategic links between cities, towns, ports and airports. The national road network is divided into National Primary routes and National Secondary routes which represent approximately 50.3% and 49.7% of the national road network respectively.

The national primary routes are the routes numbered N1 to N33 and the M50 with the 34 national secondary roads numbered between N51 and N87.

In the last decade, road infrastructure investment has focussed primarily on the National Primary Roads. In contrast to this, little capital expenditure or other work has been devoted to upgrading or renewing the National Secondary Road (NSR) network. The National Roads Authority (NRA) is currently implementing a planning framework programme for the National Primary Roads, including the completion of the Major Inter-Urban Routes (MIUs), in 2010. The MIUs include the national primary routes, N9 to Waterford, N8 to Cork, N7 to Limerick, N4/N6 to Galway and the M1 to the border. As part of the NRA's programme, it has identified the requirements for the national primary network and is currently in the process of either implementing or planning upgrades and improvements for the national primary route network.

The NRA is now proposing to focus its attention on addressing deficiencies in the NSR network. To that end, it commissioned the National Secondary Road Needs Study (NSRNS) to identify an optimal future NSR network, develop and prepare an NSR Network Programme and provide an outline delivery programme which offers value for money.

<sup>1</sup> Externalities are costs or benefits that do not fall on those individuals or organisations, whose choices have caused them, but on other individuals or organisations or on society as a whole. Externalities arise as a side effect of the activities of individuals and organisations, which then have consequences for the wider economy.

<sup>2</sup> *The Mid-term Evaluation of the National Development Plan and Community Support Framework for Ireland, 2000 to 2006: Final Report to the Department of Finance*, Economic and Social Research Institute, Policy Research Series No. 50, October 2003.

### Introduction

Baseline

Objectives

Methodology

Option  
Identification

Costing

Option  
Appraisal

Recommen-  
dations

Cycling &  
walking

### 1.3 ROLE OF NATIONAL SECONDARY ROAD NETWORK

The National Secondary Roads (NSRs) are a key economic asset for Ireland that are necessary to connect our major cities and towns to each other and to the National Primary Roads. The existing NSR network comprises approximately 2,708 km of road on 34 routes throughout Ireland. The national secondary routes indicated in Figure 1.1 are numbered N51 - N56, N58 – N63, N65 – N78 and N80 - N87 with the terminal and intermediate destinations for each route identified in Table 1.1.

The NSRs provide a hierarchical level of network connectivity between regional centres and to/from National Primary Roads. The network also provides for accessibility to areas of the country that have high amenity or tourism value or suffer from higher levels of social exclusion due to their peripheral location (e.g. routes such as the N56, N59, N67, N70 and N86). For the most part, however, the routes can be considered predominantly rural and inter-urban, and NSRs are generally defined by the following criteria:

- medium length through and semi-through routes;
- carrying medium to heavy volumes of traffic, with an annual average daily traffic (AADT) of over 2,000 vehicles;
- serving as connecting roads between principal towns;
- serving medium to large geographical regions;
- forming extensions to the National Primary Roads;
- linking National Primary Roads together to form a network.

The NSR network is thus an essential piece of national public infrastructure. It interacts with the National Primary Roads to facilitate the movement of strategic traffic throughout the island of Ireland, and it facilitates access and safety and sustains national development.

Preparation of the National Spatial Strategy (NSS) gave the NSRs a new significance as key routes linking Gateways to Hubs, other county towns and their hinterlands. Hence a variety of subsequent official reports and strategies, including Transport 21 and the National Development Plan (NDP), highlighted various NSRs as priority investments. The review of the NSS currently underway is also giving greater emphasis to the regional dimension of balanced spatial development, and the NSRs have a key role in helping all regions reach their potential.

However, in investment terms, the NSRs have in practice been going through a period of relative neglect. In particular, the NDP 2000-2006 placed welcome emphasis on upgrading the National Primary Roads (especially the Major Inter-Urban Routes) as well as non-national roads, but involved relatively little investment in the NSRs.

It is therefore now timely to re-focus on the NSRs as a key linking component in Ireland's road network as a whole. Recognising this, the Economic and Social Research Institute (ESRI) Ex-Ante Evaluation of the NDP 2007-2013 recommended that “a specific and comprehensive programme of National Secondary (Road) improvement should be included in the next National Development Plan”<sup>3</sup>. (see box below)

*“The National Secondary (Road) network is a critical component in the overall road infrastructure, and is particularly important in serving and connecting the smaller market towns to one another and to the bigger centres served by the National Primary (Road) network. It will play an important role in developing the National Spatial Strategy. We recommend that a specific and comprehensive programme of National Secondary (Road) improvements should be included in the next National Development Plan, together with the analysis underlying project selection and prioritisation. This should take account of the needs of the National Spatial Strategy”.*

ESRI, Ex-ante Evaluation of the National Development Plan 2007-2013

<sup>3</sup> Ex-ante Evaluation of the Investment Priorities for the National Development Plan 2007-2013, Economic and Social Research Institute, Policy Research Series No. 59, October 2006.

#### Introduction

Baseline

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dations

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walking

**LEGEND**

- National Secondary Road
- National Primary Road
- Motorway
- New Alignment
- City/Town

**Table 1.1: National Secondary Roads**

National Route No.	Terminal Destinations	Intermediate Destinations	Terminal Destinations	Approx Length (km)	AADT Range	AADTs at Notable Points
N 51	DELVIN	NAVAN	DROGHEDA	54	6,000-8,500	10,500 in Navan
N 52	NENAGH	TULLAMORE MULLINGAR	DUNDALK	203	4,000-8,000	11,500 in Birr 11,500 in Tullamore 12,200 in Kells 12,500 In Mullingar 22,000 in Dundalk
N 53	CASTLEBLANEY DERRY		DUNDALK	18	5,100-7,200	11,000 in Dundalk
N 54	MONAGHAN		CAVAN	35	3,500-6,000	13,500 in Monaghan
N 55	ATHLONE		CAVAN	79	2,500-8,600	13,000 in Athlone 11,400 in Cavan
N 56	DONEGAL	KILLYBEGS GLENTIES DUNFANAGHY	LETTERKENNY	156	2,800-8,600	11,200 in Donegal Town 8,600 near Letterkenny
N 58	FOXFORD		BEALLAVARY CASTLEBAR	11	3,100-4,200	-
N 59	SLIGO	BALLINA WESTPORT CLIFDEN	GALWAY	297	1,000-7,700	30,000 in Galway
N 60	CASTLEBAR		ROSCOMMON	92	2,600-6,700	8,300 at Castlebar 8,200 at Castlere 7,100 at Roscommon
N 61	BOYLE	ROSCOMMON	ATHLONE SLIGO	75	2,700-6,200	8,000 at Roscommon
N 62	ATHLONE	BIRR ROSCREA THURLES	CASHEL	95	2,900-7,000	12,000 in Templemore 9,000 around Roscrea

National Route No.	Terminal Destinations	Intermediate Destinations	Terminal Destinations	Approx Length (km)	AADT Range	AADTs at Notable Points
N 63	GALWAY	ROSCOMMON	LONGFORD	95	1,700-8,200	8,300 around Roscrea
N 65	GALWAY		BORRISOKANE	53	1,800-4,900	
N 66	GORT		LOUGHREA	27	3,600	
N 67	GALWAY	ENNISTIMON KILKEE	KILRUSH	129	1,000-4,800	5,300 at Kiltrush
N 68	KILRUSH		ENNIS	41	4,400-5,100	7,800 near Ennis
N 69	TRALEE	LISTOWEL FOYNES	LIMERICK	101	2,700-7,600	15,000 in Tralee 11,500 in Listowel 26,000 in Limerick
N 70	TRALEE	CAHERSIVEEN KILORGLIN	KENMARE	143	1,100-8,200	7,400 in Tralee
N 71	KILLARNEY	SKIBBEREEN	CORK	189	1,200-17,000	18,600 in Killarney 7,800 in Bantry 11,700 in Skibbereen 10,500 in Clonakilty 17,000 in Bandon 32,000 in Cork
N 72	KILLORGLIN	KILLARNEY	DUNGARVAN	166	1,800-8,200	10,800 in Killarney 13,600 in Malloy
N 73	MALLOW		MITCHELSTOWN	34	2,900-5,600	
N 74	TIPPERARY		CASHEL	20	3,300-4,900	
N 75	THURLES		DUBLIN, CORK	8	2,600	
N 76	CLONMEL		KILKENNY	44	4,100-8,900	13,800 at Kilkenny

National Route No.	Terminal Destinations	Intermediate Destinations	Terminal Destinations	Approx Length (km)	AADT Range	AADTs at Notable Points
N 77	KILKENNY		PORTLAOISE	27	4,800-5,600	19,300 at Kilkenny 15,500/9,600 Exiting Kilkenny
N 78	KILKENNY	ATHY	NAAS	62	2,200-7,400	6,500 at Castlecomer 12,800 at Athy
N 80	ATHLONE	PORTLAOISE CARLOW TULLAMORE	ENNISCORTHY	137	3,700-8,900	13,700 at Carlow 11,000-30,000 at Portlaoise 6,900 at Mountmellick 11,300 at Tullamore
N 81	DUBLIN	BLESSINGTON	ENNISCORTHY	86	1,700- 11,700	15,700 at Blessington 18,400 at M50
N 82	TALLAGHT		RATHCOOLE	3	1,000-6,500	
N 83	TUAM	BALLYHAUNIS	CHARLESTOWN	45	2,300-9,700	7,200 in Tuam
N 84	GALWAY		CASTLEBAR	74	2,500-4,400	16,000 in Galway 11,000 in Ballinrobe
N 85	ENNIS		ENNISTIMON	32	4,100-5,800	13,600 near Ennis
N 86	TRALEE		DINGLE	50	3,200	6,800 in Tralee
N 87	BELTURBET		SWANLINBAR	28		



## 1.4 CROSS SECTION FOR NSR IMPROVEMENT

Analysis of NRA traffic count data indicates that the NSR routes typically cater for traffic volumes in the range of 1,000 to 10,000 veh/day AADT. It is acknowledged, however that where routes form part of the road infrastructure in and around built up areas that higher AADT traffic volumes will apply. Typically these urban/semi-urban parts of the network would carry between 8,000 to 20,000 veh/day AADT.

For the most part, the current National Secondary Road network consists of a network of predominantly rural single carriageways. According to the available data, the geometric layout of the existing network varies considerably and the NSRNS will as a minimum result in the recommendation to upgrade key strategic parts of the network.

The NRA DMRB defines a number of cross sections for national roads and has recently introduced a Type 3 single carriageway cross section for use on low traffic volume roads which will be considered for use on the NSR network. The recommended rural road layouts as defined in the IAN 01/09 are summarised in Table 1.2 and illustrated in Figures 1.2 and 1.3.

Design Speed	Type of Road	Capacity (AADT) for Level of Service D	Edge Treatment
85	Type 3 Single (6.0m) Carriageway S2	5,000	0.5m hard strips
100	Type 2 Single (7.0m) Carriageway S2	8,600	0.5m hard strips
100	Type 1 Single (7.3m) Carriageway S2	11,600	2.5m hard shoulders
100	Type 3 Dual (7.0m + 3.5m) Primarily for retro fit projects	14,000	1.0m hard strips
120	Type 2 Dual Dual * 2 Lane Carriageways (2 x 7.0m)	20,000	0.5m hard strips
120	Type 1 Dual Dual 2 Lane Carriageways (2 x 7.0m)	38,100	2.5m hard shoulders
120	Standard Motorway 2 Lane (7.0m) (D2M)	44,100	2.5m hard shoulders
120	Wide Motorway 2 Lane (7.5m) (D2M)	55,500	3m hard shoulders

**Table 1.2 Recommended Rural Road Layouts**

**Source:** NRA DMRB Design Standard TD 9/07 and Interim Advice Note IAN 01/09

The current default national speed limit for national roads is 100kph and much of the NSR network will be currently operating under this speed limit. The full application of the DMRB standards for a design speed of 100kph to road improvements could result in extensive realignment schemes that could not be justified on environmental and economic grounds because many of the lower traffic volumes on some of the NSRs. Many of these routes are located in rugged, scenic and sensitive terrain and implementation of the full DMRB standards would therefore result in excessively high alignment standards and cause significant negative impacts on the surrounding areas. It is therefore proposed that the minimum acceptable standard for the NSR network would be defined by the Type 3 Single Carriageway to IAN 01/09 and criteria to be achieved for a Design Speed of 85kph as set out in NRA TD 9/07.

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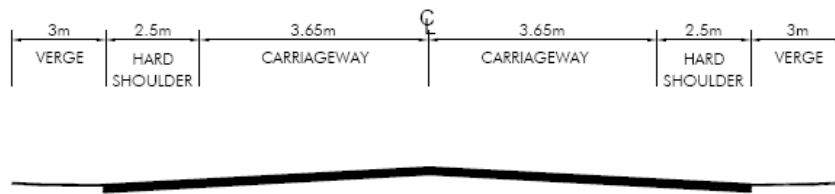
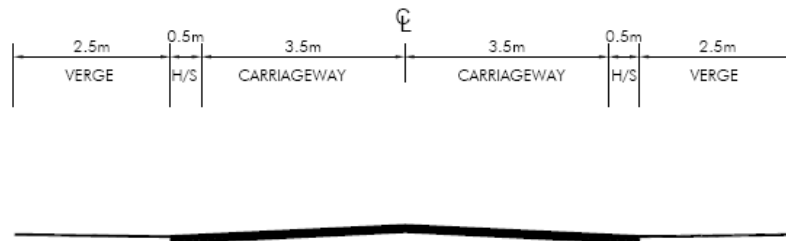
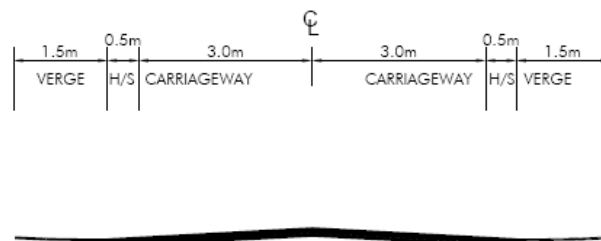
Option Identification

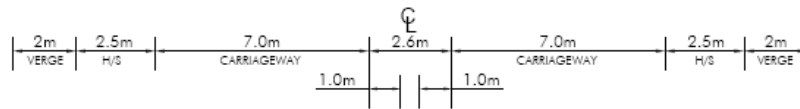
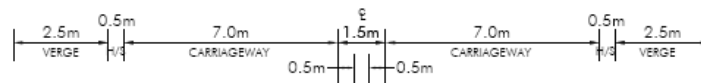
Costing

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**Figure 1.2: Typical Single Carriageway Cross Sections**Type 1 Single Carriageway Cross SectionType 2 Single Carriageway Cross SectionType 3 Single Carriageway Cross SectionFigure 1.2

**Figure 1.3: Typical Dual Carriageway Cross Sections**Type 1 Dual Carriageway Cross SectionType 2 Dual Carriageway Cross SectionType 3 Dual Carriageway Cross Section**Figure 1.3**

## 1.5 NSR INVESTMENT REQUIREMENTS

As far back as 1998, the National Road Needs Study<sup>4</sup> identified serious deficiencies in the national road network and identified improvements needed to bring the network in Ireland up to Level of Service D.

The National Road Needs Study implementation programme began by including the principal objectives in the National Development Plan (NDP) 2000-2006 and in Transport 21, and this has been extended in the NDP 2007-2013. Between 2000 and 2010, major capital expenditure was provided for the National Primary Roads including the development of the MIUs, completed in 2010.

However, relatively little finance has been provided for the NSR network, and the conditions and safety on this network are likely to deteriorate unless improvement works are implemented. To achieve the maximum value for money from the capital expenditure on the MIUs, the remainder of the National Road Needs Study's "road map" needs to be provided, which includes the improvement needs on the NSRs. To date, the majority of the works for the NSR network identified in the National Road Needs Study have not been implemented.

With increasing traffic levels operating on a sub-standard network, set against the high performance effects of the MIUs and improvements to the other National Primary Roads, there is a risk that the accident rates on the NSRs will increase, with potentially a greater number of fatalities. This will be accentuated by the higher levels of traffic, operating at higher speeds, which access a poor NSR network, after experiencing a much higher level of service provided on the National Primary Roads.

## 1.6 WHY INVEST IN NATIONAL SECONDARY ROADS?

The current economic climate has put a very serious strain on the public finances. However, there are still a number of very strong arguments to be made for the NSR Network Programme, including:

- the continuing need to address Ireland's infrastructure deficit, which will help to maximise Ireland's ability to make the most of an upturn in economic growth when it arrives;
- the critical role played by the NSRs as a "link" within Ireland's overall road infrastructure;
- the relative under-investment in NSRs in recent NDPs, as this lack of investment reduces gains from recent improvements in National Primary Roads and local roads;
- reductions in transport costs, including freight costs, which will help to improve national competitiveness;
- extremely competitive construction pricing, which has arisen from the economic downturn and which offers significant savings compared to costs in recent years;
- the role played by an improved road network in supporting other necessary improvements, such as in regional public transport and the movement of goods and freight.

## 1.7 NATIONAL SECONDARY ROAD NEEDS STUDY

As previously stated the National Roads Authority (NRA) is currently implementing a planning framework programme for the National Primary Roads, including the completion of the Major Inter-Urban Routes (MIUs), in 2010; The NRA is proposing to focus its attention on addressing deficiencies in the NSR network. To that end, it has commissioned a National Secondary Road Needs Study (NSRNS).

<sup>4</sup> *National Road Needs Study*, Report Prepared by MC O'Sullivan & Co Ltd and Scetauroute on behalf of the National Roads Authority, July 1998.

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The NSRNS will therefore identify NSR routes, or sections of a route, suitable for investment to a higher design standard. As much of the NSR network does not meet the Type 3 design standard, it was anticipated at the start of the study that a significant component of the proposed investment programme would be to recommend an upgrade to this 'low volume' standard. Routes recommended for investment to this low volume design standard will form part of the proposed NRA National Secondary Road Projects. For some national secondary routes the highest single carriageway design standard (Type 1) may be recommended. It is envisaged that such routes, as well as possible bypasses, would be taken forward as part of the NRA major projects under a different investment programme. Upgrades to a Type 2 standard could form part of either basket of projects. Where it is considered undesirable for either environmental or economic reasons to upgrade a national secondary route, such a route may still be considered for investment under the NRA's road safety programme and will also still be subject to routine maintenance under the NRA's maintenance programme.

The principal output from the NSRNS is a prioritised list of routes for investment under the proposed National Secondary Road projects, as well as a set of routes to be considered in other NRA programmes (i.e. maintenance, safety or major projects).

Figure 1.4 sets out a schematic diagram illustrating the scope of the NSRNS. It sets out the framework within which the various elements of the study were undertaken. The subsequent chapters in this report will provide an overview of the various elements.

## 1.8 STRUCTURE AND CONTENTS OF THE REPORT

This report has the following structure:

- Chapter 2 presents a summary of the baseline assessment of the NSR network in the North Region.
- Chapter 3 briefly describes the rationale and objectives of the study.
- Chapter 4 describes the methodology developed for the multi-criteria appraisal process, and it presents the criteria that will be used to assess the network definition and the performance of each of the routes.
- Chapter 5 summarises the option generation and option sifting stages of the option identification process for the North Region.
- Chapter 6 summarises the cost estimation methodology.
- Chapter 7 presents the appraisal of options for the NSR network in the North Region with summary descriptions of the options appraised and results on individual project appraisal balance sheets under the appraisal criteria (environment, safety, economy, accessibility and social inclusion and integration).
- Chapter 8 presents the results of the prioritisation and the recommendations for improvements to the NSR network for the North Region.
- Chapter 9 presents the appraisal of options which include cycling and walking facilities, with summary descriptions of the options appraised.

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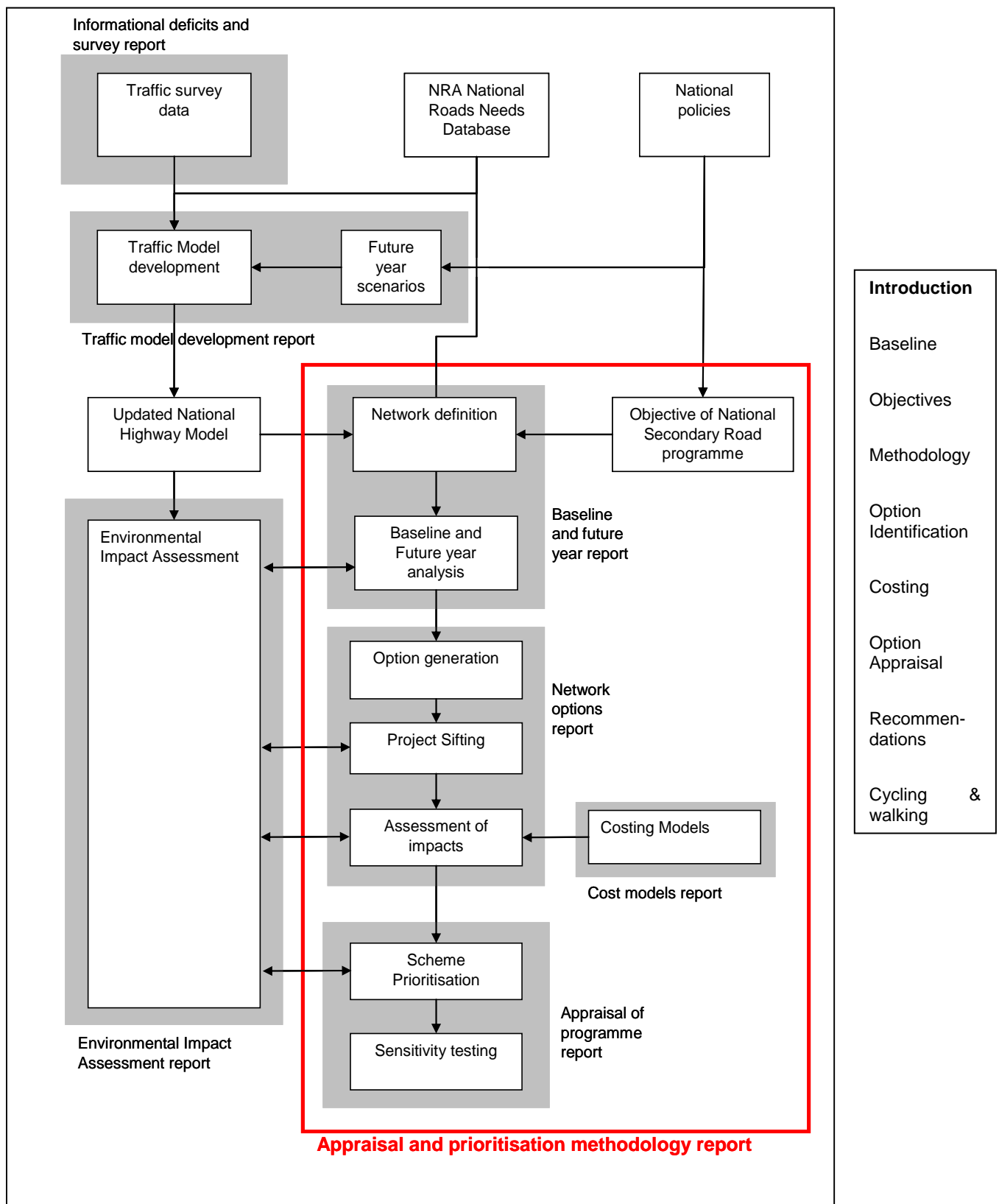
Option  
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**Figure 1.4: NSRNS Project Architecture**

## 2 BASELINE ASSESSMENT

Existing available data from a number of sources was used to establish background information and statistics describing the existing condition of each individual route in the NSR network. This formed a firm foundation for the later stages of the project.

### 2.1 AVAILABLE DATA

The data used comprised primarily GIS datasets available from NRA, Ordnance Survey Ireland and third parties.

The NRA GIS datasets used to generate statistics for the individual national secondary routes were the road network, urban speed zones, junction locations, lay-bys, international roughness index (IRI), sightlines 2003 and width.

The 2003 traffic data was used as an indicator of the appropriate road cross section standard to be considered for the route.

The Ordnance Survey Ireland Datasets were used to generate mapping and statistics for analysis and included boundaries, coverage, ortho photography and vector data.

The Third Party Datasets used to generate mapping and statistics for analysis were the Environmental Designations and Heritage Data (NPWS Data), spatial datasets for NHAs, SACs, SPAs, SMRs (Sites and Monuments Records), accident data for the period 1990 to 2006 from NRA and RSA (Road Safety Authority) and AnPost GeoDirectory.

As part of the baseline assessment figures were generated for each of the individual National Secondary Routes to display and analyse the GIS information mentioned above:

- Environmental Designated Areas – containing locations of Special Protection Areas (SPAs), Natural Heritage Areas (NHAs) and Special Area of Conservation (SACs).
- International Roughness Index (IRI) – showing locations along the routes where the IRI is  $\geq 4$  and  $< 5$ , and also  $> 5$ .
- Urban Speed Zones, Junctions and Lay-bys – containing locations of urban speed zones, junctions and lay-bys.
- Width Analysis (2004) – showing 2004 carriageway width data.

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### 2.2 PERFORMANCE INDICATORS

The background information for each of the individual routes was reviewed with reference to a number of factors, which helped to establish the strategic importance of the individual route.

Factors such as geographical information and the routes linkage with National Spatial Strategy gateways or hubs were identified in addition to the route's position relative to National Primary Routes. Onward connectivity to major cities and towns was also described with linkage to ports and airports noted as well as linkage to routes in Northern Ireland. Linkage to peripheral areas and areas of touristic importance were also outlined.

The indicative 2003 traffic data along each route was reviewed and future traffic volumes including HCV traffic content were broadly assessed in order to establish an indicative outline of the volumes and type of traffic carried by each route.

After the background information was outlined the individual routes were assessed by analysing particular indicators to establish an indication of route performance. The indicators representing the performance of each route in achieving the objectives outlined in Chapter 3 were assessed

for each route and summarised in the Baseline Report<sup>5</sup>. The analysis of the individual routes was based on the mapping and statistics generated from the GIS datasets and other information and included the following:

- In order to assess the condition of the existing network, each route was described in relation to its existing cross sections and lane widths and locations of substandard lane width were identified relative to the national standard lane widths of 3m, 3.5m and 3.75m.
- Sight distance information was described relative to the various sight distance bands associated with 85kph and 100kph design speed standards. An overall route description was given in relation to sight distances including the percentage of the route below the desirable minimum for both 85kph and 100kph design standards. In addition the percentage of the route achieving Full Overtaking Sight Distance (FOSD) was reported, though this analysis did not take account of junction proliferation and so only provided a guide to the performance of the route under this criterion. Sections of routes and corridors with relatively low sight distance values were also identified.
- Junction proliferation was assessed and the overall number of junctions, as well as the number of junctions per kilometre was outlined. Considering the rural nature of many of the routes a breakdown of junction proliferation was given for the sections of the route outside of the urban speed limit zones.
- The quality of road surface was described with reference to the pavement condition indicator. This was the IRI indicator (International Roughness Index) with a cause for concern being values greater than 4.

These indicators were utilised to assess the physical condition of each route which was collated to conclude if there were problems associated with the route.

A summary of the baseline information for the NSR network is included in Figures 2.1 to 2.6 and in Appendix A.

Figure 2.1: Environmental Designated Areas with the NSR network

Figure 2.2: CORINE Land cover

Figure 2.3: Carriageway Widths of the NSR Network

Figure 2.4: International Roughness Index (IRI)

Figure 2.5: Urban Speed Zones, Junction Locations and lay-bys on the NSR Network

Figure 2.6: National Spatial Strategy

In addition the drawings providing an illustration of problems and possible solutions as identified in the Baseline Report are provided in Appendix B.

## 2.3 KEY STATISTICS

This section provides summary details on the carriageway width, junction spacing, pavement condition, and route quality of the NSR network. More detailed tables are provided in Appendix A.

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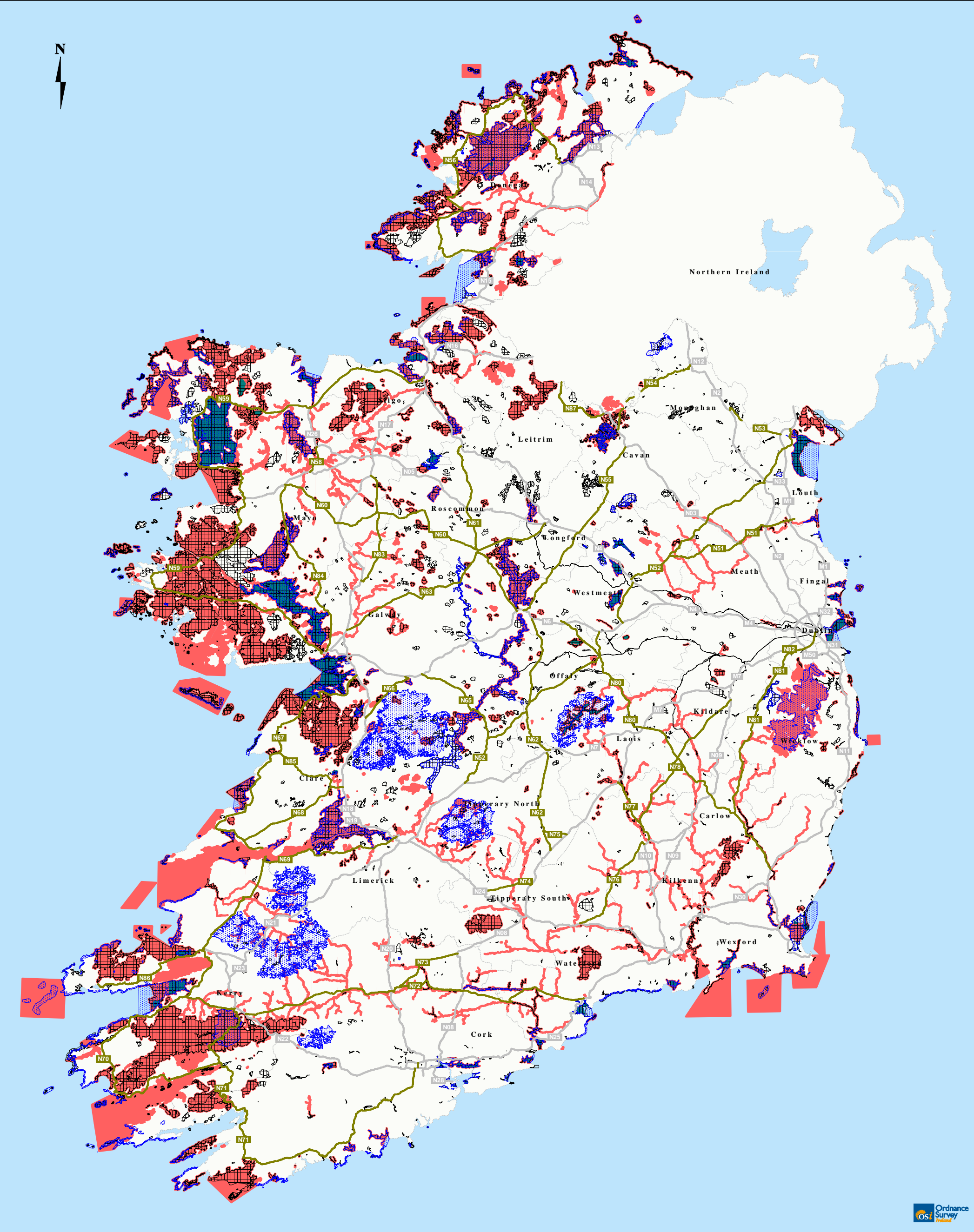
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dations

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<sup>5</sup> Baseline Report





Title		Project	Issue Details	
Figure 2.1 - Environmental Designated Sites		National Secondary Road Needs Study	Drawn by: S. Khan	Project No. MDT0436
			Checked by: JM. Lejeune	File Ref.
			Approved by: A. Grady	MDT0436M0004A02
			Scale: 1: 650,000 @ A1	Drawing No. Rev.
<div>LEGEND:</div> <div><div><div><div></div></div><div>Natural Heritage Area (NHAs and pHNAs)</div></div><div><div><div></div></div><div>Special Area of Conservation (SAC)</div></div><div><div><div></div></div><div>Special Protection Area (SPA)</div></div><div><div><div></div></div><div>Ramsar Areas</div></div><div><div><div></div></div><div>National Secondary Road</div></div></div> <div><div>NOTE:</div><div>Natural Heritage Area (NHAs and pHNAs), Special Area of Conservation (SAC) and Special Protection Area (SPA) boundaries are downloaded from the National Parks and Wildlife Service (NPWS) website. The data on the website is last updated on 31st May 2010.</div></div>		<div><div><div><div><div></div></div><div>NRA</div><div>National Roads Authority</div><div>An Údarás um Boithre Náisiúnta</div></div><div><div><div></div></div><div>RPS</div></div><div>West Pier Business Campus, Dun Laoghaire, Co. Dublin Ireland</div></div><div><div>T +353 (0)1 2884499</div><div>F +353 (0)1 2835676</div><div>E ireland@rpsgroup.com</div><div>W rpsgroup.com/ireland</div></div></div>	Date: 14/03/2011	MI0004 A02
			<div>Notes</div> <div>1. This drawing is the property of RPS Group Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent.</div> <div>2. All levels are referred to Ordnance Datum, Malin Head.</div> <div>3. Ordnance Survey Ireland Licence EN 0005011 ©Copyright Government of Ireland.</div>	





Title		Project	Issue Details			
Figure 2.2 - CORINE Landcover (2006)		National Secondary Road Needs Study	Drawn by:	S. Khan	Project No.	MDT0436
			Checked by:	JM. Lejeune	File Ref.	
			Approved by:	A. Grady	MDT0436MI0008A02	
			Scale:	1: 650,000 @ A1	Drawing No.	Rev.
			Date:	14/03/2011	MI0008	A02
LEGEND:		Notes				
<div><div><div>1 - Artificial Surface</div><div>Urban fabric Industrial, commercial and transport units Mine, dump and construction sites Artificial, non-agricultural vegetated areas</div></div><div><div>2 - Agricultural Areas</div><div>Arable land Permanent crops Pastures Heterogeneous agricultural areas</div></div><div><div>3 - Forest and Semi - Natural Areas</div><div>Forests Scrub and/or herbaceous vegetation associations Open spaces with little or no vegetation</div></div><div><div>4 - Wetlands</div><div>Inland wetlands Maritime wetland</div></div><div><div>5 - Water Bodies</div><div>Marine waters Inland waters</div></div></div>		<div><div><div><div>NRA</div><div>National Roads Authority</div><div>An Údarás um Bóithre Náisiunta</div></div><div><div>RPS</div><div>West Pier Business Campus, Dun Laoghaire, Co. Dublin Ireland</div></div><div><div>T +353 (0)1 2884499 F +353 (0)1 2835676 E ireland@rpsgroup.com W rpsgroup.com/ireland</div></div></div></div> <div><div>1. This drawing is the property of RPS Group Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent.</div><div>2. All levels are referred to Ordnance Datum, Malin Head.</div><div>3. Ordnance Survey Ireland Licence EN 0005011</div><div>©Copyright Government of Ireland.</div></div>				



Title		Project		Issue Details				
Figure 2.3 - Carriageway Width (2004)		National Secondary Road Needs Study		Drawn by:	S. Khan	Project No.	MDT0436	
				Checked by:	JM. Lejeune	File Ref.		
				Approved by:	A. Grady	MDT0436M0010A01		
LEGEND:  <div><div></div>2.75m to 3m</div> <div><div></div>Less than 2.75m</div>		<div><div>NRA</div><div>National Roads Authority</div><div>An tOideamh um Bóithre Náisiúnta</div></div> <div><div>RPS</div><div>West Pier Business Campus, Dun Laoghaire, Co. Dublin Ireland</div></div> <div><div>T</div><div>+353 (0)1 2884499</div><div>F</div><div>+353 (0)1 2835676</div><div>E</div><div>ireland@rpsgroup.com</div><div>W</div><div>rpsgroup.com/ireland</div></div>		Scale:	1: 650,000 @ A1		Drawing No.	Rev.
				Date:	28/10/2010		M0010	A01
				Notes				



West Pier Business Campus,  
Dun Laoghaire,  
Co. Dublin  
Ireland

T +353 (0)1 2884499  
F +353 (0)1 2835676  
E ireland@rpsgroup.com  
W rpsgroup.com/ireland



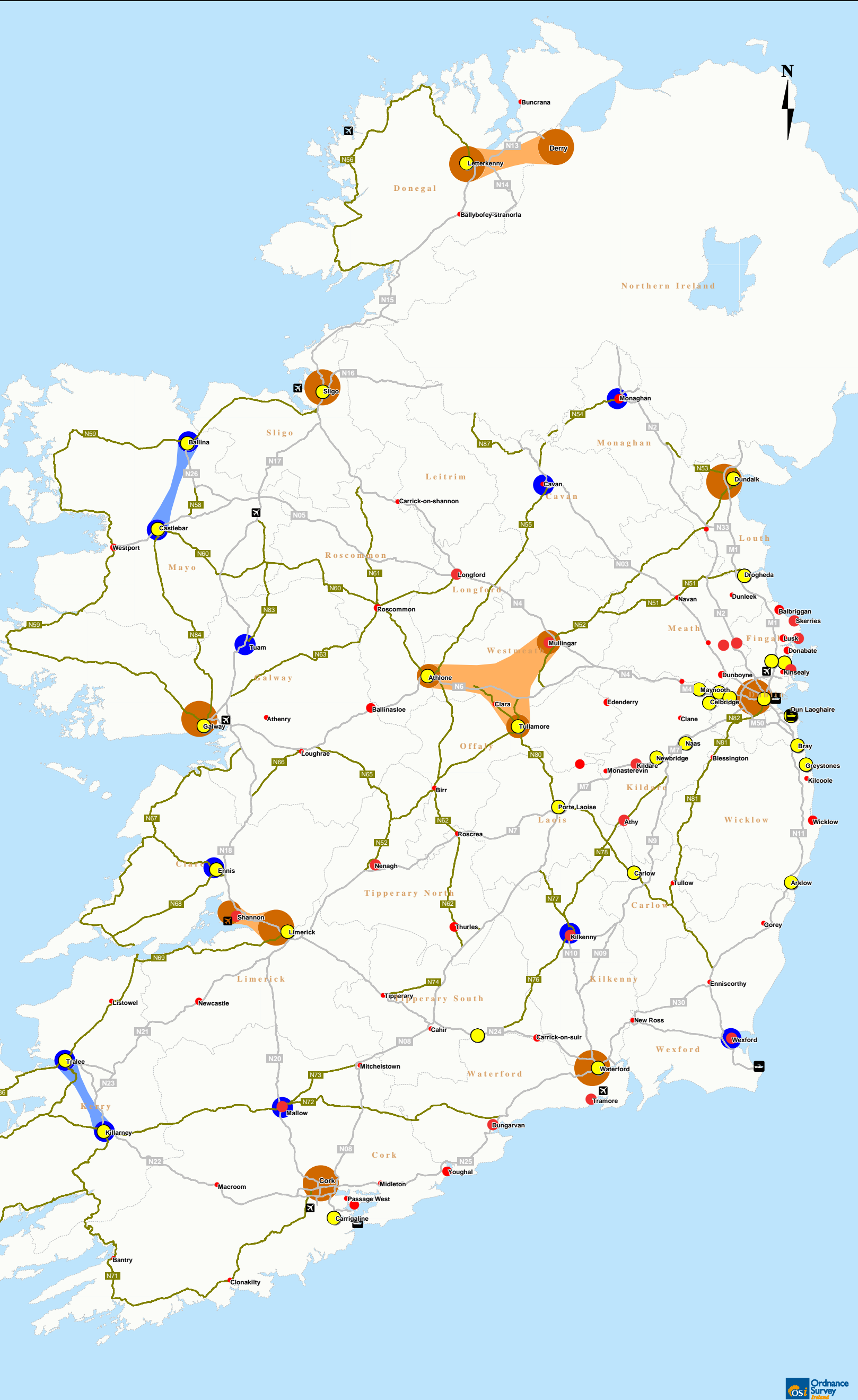


Title		Project	Issue Details		
Figure 2.4 - International Roughness Index (IRI)		National Secondary Road Needs Study	Drawn by: S. Khan	Project No.	MDT0436
			Checked by: JM. Lejeune	File Ref.	
			Approved by: A. Grady	MDT0436M0012A02	
			Scale: 1: 650,000 @ A1	Drawing No.	Rev.
LEGEND:		  <div>West Pier Business Campus, Dun Laoghaire, Co. Dublin Ireland</div>	T +353 (0)1 2884499 F +353 (0)1 2835676 E ireland@rpsgroup.com W rpsgroup.com/ireland		
			Date: 14/03/2011	M0012	A02
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Title		Project		Issue Details			
Figure 2.5 - Urban Speed Zones, Junctions and Laybyes		National Secondary Road Needs Study		Drawn by:	S. Khan	Project No.	MDT0436
				Checked by:	JM. Lejeune	File Ref.  MDT0436M0011A01	
				Approved by:	A. Grady		
LEGEND:  <div><div></div>Urban Speed Zone</div> <div><div></div>Junction Location</div> <div><div></div>Laybyes</div>		<div><div><div>NRA</div><div>National Roads Authority</div><div>An Údarás um Beathú Naisiúnta</div></div><div><div>RPS</div><div>West Pier Business Campus, Dun Laoghaire, Co. Dublin Ireland</div><div><div>T +353 (0)1 2884499 F +353 (0)1 2835676 E ireland@rpsgroup.com W rpsgroup.com/ireland</div></div></div></div>		Scale:	1: 650,000 @ A1	Drawing No.	Rev.
				Date:	28/10/2010	M0011	A01
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Town Name	County Name	Population 1991	Population 2002	Population 2006
Carlow	Carlow	11,721	13,218	13,623
Tullow	Carlow	2,564	2,417	3,048
Cavan	Cavan	3,509	3,538	3,934
Ennis	Clare	15,333	18,830	20,142
Shannon	Clare	7,811	8,228	8,481
Bantry	Cork	2,936	3,150	3,309
Carrigrohane	Cork	7,827	11,191	12,835
Clonsilla	Cork	2,724	2,432	3,745
Cobh	Cork	6,468	6,767	6,541
Macroom	Cork	2,457	2,836	3,407
Mallow	Cork	6,434	7,091	7,864
Midleton	Cork	3,266	3,798	3,934
Michelinstown	Cork	3,123	3,300	3,365
Passage West	Cork	3,638	4,184	4,818
Youghal	Cork	5,630	6,203	6,393
Ballybooley-stranorlar	Donegal	3,047	3,603	4,174
Buncrana	Donegal	3,312	3,420	3,411
Letterkenney	Donegal	7,606	7,965	15,062
Dublin City	Dublin	481,854	495,781	506,211
Dun Laoghaire	Dun Laoghaire	189,959	186,641	188,761
Balbriggan	Fingal	5,743	6,631	6,739
Donabate	Fingal	1,868	3,854	5,499
Kinsealy	Fingal	2,182	2,110	2,487
Lusk	Fingal	2,287	2,456	2,536
Malahide	Fingal	13,539	13,826	14,937
Portmarnock	Fingal	9,145	8,376	8,979
Rush	Fingal	5,429	6,769	8,286
Skerries	Fingal	7,339	9,149	9,535
Swords	Fingal	22,314	27,175	33,998
Athlery	Galway	1,614	2,154	3,205
Ballinasloe	Galway	5,634	5,984	6,049
Galway	Galway	57,241	65,832	72,414
Loughrae	Galway	3,335	4,004	4,532
Killamey	Kerry	8,805	12,087	13,487
Listowel	Kerry	3,383	3,589	3,971
Kerry	Kerry	19,056	20,078	20,881
Athy	Kildare	5,306	6,049	7,943
Calbridge	Kildare	12,289	16,016	17,262
Clane	Kildare	3,126	4,417	4,968
Kilcock	Kildare	1,825	2,740	4,100
Kildare	Kildare	42,758	5,694	7,538
Leixlip	Kildare	13,451	15,016	14,676
Maynooth	Kildare	8,528	10,151	10,715
Monasterenvin	Kildare	2,302	2,583	3,017
Nass	Kildare	14,074	18,298	20,044
Newbridge	Kildare	12,970	15,749	17,540
Kilbenny	Kilkenny	8,507	8,591	8,861
Portarlino	Laois	2,162	2,758	6,004
Porte Laoise	Laois	3,531	12,127	14,613
Carrick-on-shannon	Leitrim	1,532	1,842	3,163
Limerick	Limerick	52,039	54,023	52,539
Newcastle	Limerick	3,618	4,017	5,098
Longford	Longford	6,444	6,831	7,622
Ardee	Louth	3,440	3,564	4,301
Drogheda	Louth	24,460	28,333	28,973
Dundalk	Louth	25,762	27,385	29,037
Ballina	Mayo	6,852	9,478	10,556
Castlerea	Mayo	6,585	10,287	10,655
Westport	Mayo	4,253	5,314	5,163
Ashbourne	Meath	4,999	6,362	8,528
Dunboyne	Meath	3,080	5,363	5,713
Dunleek	Meath	1,731	2,173	3,236
Dunshaughlin	Meath	2,139	3,063	3,384
Navan	Meath	3,447	3,406	3,710
Ratoath	Meath	1,061	3,794	7,249
Monaghan	Monaghan	5,628	5,717	6,221
Birr	Offaly	3,355	3,599	4,091
Clara	Offaly	2,464	2,704	3,001
Edenderry	Offaly	3,591	4,216	5,617
Tullamore	Offaly	9,221	10,270	10,900
Roscommon	Roscommon	3,915	4,488	5,017
Sligo	Sligo	17,786	18,473	17,892
Lucan	South Dublin	14,121	20,183	20,183
Navanagh	Tipperary North	5,645	6,121	7,415
Roscrea	Tipperary North	4,170	4,578	4,910
Thurles	Tipperary North	6,603	6,852	6,831
Cahir	Tipperary South	2,236	2,794	3,381
Carrick-on-suir	Tipperary South	5,172	5,542	5,856
CLONMEL	Tipperary South	15,215	15,739	31,766
Waterford	Waterford	4,640	4,546	4,912
Dungannon	Waterford	7,175	7,220	7,813
Tramore	Waterford	6,536	8,115	9,192



Title		Project		Issue Details	
<div>Figure 2.6 - National Spatial Strategy</div> <div>Source: National Spatial Strategy</div>		<div>National Secondary Road Needs Study</div>		Drawn by:	S. Khan
				Project No.	MDT0436
				Checked by:	JM. Lejeune
				File Ref.	
				Approved by:	A. Grady
				MDT0436Mi0006A01a	
<div>LEGEND:</div> <div><div><div><div></div><div>National Secondary Road</div></div><div><div></div><div>National Primary Road</div></div></div><div><div><div><div></div><div>Gateways</div></div><div><div></div><div>Hubs</div></div><div><div></div><div>Airport</div></div><div><div></div><div>Port</div></div></div><div><div><div><div></div><div>Population 2006</div></div><div><div></div><div>&gt; 10,000</div></div><div><div></div><div>7,000 to 10,000</div></div><div><div></div><div>6,000 to 7,000</div></div><div><div></div><div>5,000 to 6,000</div></div><div><div></div><div>3,000 to 5,000</div></div></div></div></div></div>		<div><div><div><div><div></div><div>NRA</div><div>National Roads Authority</div><div>An Údarás um Bóithre Náisiúnta</div></div></div><div><div><div><div></div><div>RPS</div></div></div><div><div>West Pier Business Campus, Dun Laoghaire, Co. Dublin Ireland</div><div><div>T +353 (0)1 2884499 F +353 (0)1 2835676 E ireland@rpsgroup.com W rpsgroup.com/ireland</div></div></div></div></div></div>		Scale:	1: 650,000 @ A1
				Date:	28/10/2010
				Drawing No.	Mi0006
Rev.	A01a				
				<div>Notes</div> <div>1. This drawing is the property of RPS Group Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent.</div> <div>2. All levels are referred to Ordnance Datum, Malin Head.</div> <div>3. Ordnance Survey Ireland Licence EN 0005010</div> <div>©Copyright Government of Ireland.</div>	

### 2.3.1 Carriageway Width and Type

The NSRs comprise a total length of 2,708 km, of which approximately 2,680 km (99%) is two-lane road with the remainder comprising dual carriageway, three lane road and one-way road.

Minimum design standards in the NRA Design Manual for Roads and Bridges (NRA DMRB) require a lane width of 3.0 m and a total carriageway width of 6.0 m for NSRs. On this basis, available information has been reviewed to identify to what extent NSRs currently fail to meet this minimum geometric standard.

The results for each lane on each route are summarised in Figure 2.3 and in Table 2.1. As can be seen, all NSRs – apart from the N75, N76, N78, N80 and N82 – have inadequate carriageway widths on at least 20% of their route length, with the N59, N62, N63, N66, N67, N70, N73, N83 and N87 routes having more than 60% of route length below the minimum standards. In overall terms, therefore, nearly 47% or 1,248 km of the network has a lane width of less than 3.0 m, and therefore fails to meet the minimum geometric standards.

**Table 2.1: Width Less than 3m**

WIDTH <3m			WIDTH <3m			WIDTH <3m			Introduction  <b>Baseline</b>  Objectives  Methodology  Option Identification  Costing  Option Appraisal  Recommendations  Cycling & walking
ROAD	Length m	%	ROAD	Length m	%	ROAD	Length m	%	
N51	58,588	53.3%	N63	117,656	62.0%	N75	426	2.4%	
N52	139,826	35.0%	N65	46,514	57.3%	N76	7,670	8.8%	
N53	7,270	20.0%	N66	35,999	73.0%	N77	10,999	20.2%	
N54	15,919	22.4%	N67	208,553	80.6%	N78	15,665	12.6%	
N55	72,776	45.9%	N68	45,349	55.5%	N80	44,353	16.0%	
N56	180,127	57.6%	N69	45,255	22.4%	N81	45,217	26.4%	
N58	9,972	44.2%	N70	224,092	78.5%	N82		0.0%	
N59	397,989	66.7%	N71	140,358	36.9%	N83	71,000	78.5%	
N60	45,292	24.5%	N72	102,989	31.1%	N84	74,674	50.4%	
N61	54,940	32.5%	N73	36,310	64.5%	N85	34,987	54.2%	
N62	85,071	90.5%	N74	10,054	25.0%	N86	66,173	52.0%	
						N87	43,318	77.2%	
						<b>TOTAL</b>	<b>2,495,379</b>	<b>46.8%</b>	

### 2.3.2 Pavement Condition

The pavement condition datasets provide data on skid resistance (MSSC)<sup>6</sup> and roughness (IRI)<sup>7</sup>. For the purposes of assessing the skid resistance of the network, the results from two

<sup>6</sup> MSSC is an acronym for “Mean Summer SCRIM Co-efficient”. It is a measure of the quality of skid resistance provided by the road surface, as measured by a SCRIM (Sideway Force Co-efficient Routine Investigation Machine). The units are dimensionless, essentially providing a friction co-efficient. Higher values of MSSC indicate better skid resistance.



successive years must be used, as data is collected for half the network on alternate years. MSSC requiring intervention is defined as MSSC\_40, which shows the percentage below a value of 40. In the original National Road Needs Study, Intervention Level Priority 1 is defined by 50-100% of value below 40.

A summary of the IRI for the NSR network is shown in Figure 2.4 and the numbers in bold in Table A.2 in Appendix A represent Intervention Level Priority 1. This Table indicates that 461 km, or 17% of the network, is at Intervention Level Priority 1.

In terms of roughness, IRIs have also been measured for the network, with an IRI level higher than 4.0 representing a need for intervention. Table A.3 in Appendix A summarises the length of each NSR that has an IRI higher than 4.0. In total, this amounts to some 949 km, or approximately 35% of the total NSR network.

### 2.3.3 Junction Spacing

A total of 3,673 junctions have been identified on the NSR network, with junction spacing ranging from 1.05 to 6.69 junctions per km, giving an average spacing of 1.5 junctions per km. The number of junctions per NSR and frequency are presented in Table A.4 in Appendix A with Figure 2.5 showing the urban speed zones, junctions and lay-bys on the NSR network.

## 2.4 ROUTE QUALITY INDEX

The great majority of the NSR traffic model network is rural single-carriageway road. Of 2,708km of NSR in the NRA dataset, 2,680 km (99%) is two-lane road, with the remainder comprising dual carriageway, three lane road and one-way road. Based on the national traffic model network, approximately 14% can be considered urban.

For the purpose of assessing the case for upgrading different sections of National Secondary route, it was necessary to establish a route quality index, so as to distinguish between sections of existing higher or lower route quality, so as to quantify the impacts of improving any given section to a particular standard.

The original VISUM traffic model network had a single speed-flow curve allocated to all rural NSR links, implying that every link is of the same quality. This was considered to be a critical weakness for the purposes of this study.

The issue was addressed by establishing route quality information using the NRA GIS datasets, and linking this to the traffic model network, splitting model links at the points where there is a significant change in route quality. A set of speed-flow curves were then defined corresponding to the different quality scores.

The method used for this process can be described in terms of a number of sub-tasks:

- Bringing together into a single GIS layer relevant road quality attributes from the NRA database
- Dividing the rural NSR network into appropriate “stretches” – building blocks or units of length at which to calculate a route quality index
- Calculating an overall road quality score for each stretch of the network
- Using this information to decide where to split the NSR traffic model network into sections of different overall route quality

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<sup>7</sup> IRI is an acronym for “International Roughness Index”. This is a measure of the quality of the road, measured in units of metres or kilometres. Higher values of IRI indicate poorer quality road.



- Splitting the traffic model links at these locations, so as to establish an updated NSR traffic model road network, and attaching to each resulting link of the model a quality score
- Allocating an appropriate speed-flow curve to each link, to reflect its route quality score

Sections 2.4.1 to 2.4.5 set out in more detail the method adopted.

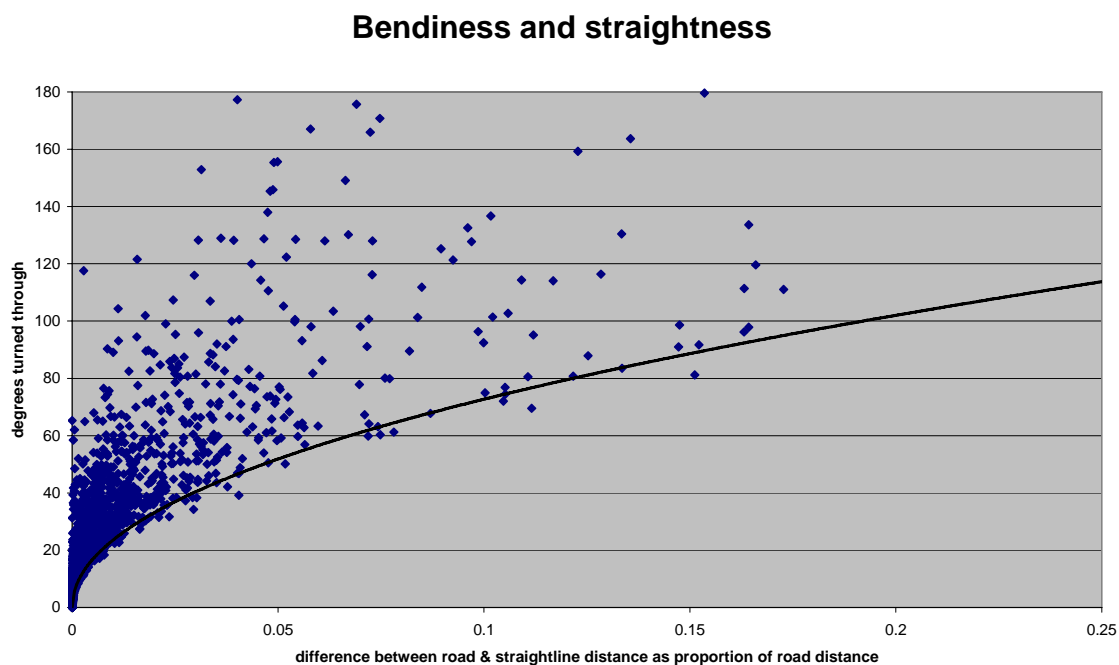
### 2.4.1 Road Quality Attributes

The starting point was the “road widths” layer of the NRA database. This GIS dataset represents the NSR network as around 37,000 one-directional sections, each with an average length of approximately 150m. It has four route quality attribute variables namely:

- Carriageway width
- Shoulder width
- Verge width
- Footpath width

The hilliness was estimated from a Digital Terrain Model of the island of Ireland. To each section was attached the estimated maximum and minimum height above sea level, with the difference between the two used as the estimate of the carriageway rise/fall over the length of the section.

Bendiness was estimated by comparing the length of the section with the crow fly distance between the two ends. Each section is a GIS polyline object, so the degrees of turn at each intermediate “shape point” can be calculated directly from the X and Y co-ordinates of the preceding and subsequent shape points. This was done for a sample of points; the results are shown in Figure 2.7.



**Figure 2.7 – Distance Comparison vs GIS Calculation of Degrees of Turn**

Some apparently very straight links had a high calculated bendiness, and links with the same apparent straightness could have greatly varying bendiness figures. This variation is to do with the density of points and the precision of their location when geocoding the data originally - such variation is in many cases at too fine a resolution to affect driver behaviour.

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In order to estimate the effective bendiness of each link, the lower envelope of the points on this graph was approximated by the equation

$$\text{Degrees turned through} = 250 \times \sqrt{(\text{length} - \text{crow fly})/\text{length}}$$

This equation was used to estimate the degrees turned through for each section.

When piloting the method on a single route corridor, visual inspection showed a number of outliers in the data – single sections of very high or low quality – which could distort the results unless removed. Some of these outliers were due to inaccurate lengths in the original data giving spuriously high bendiness values. The length of each section was recalculated to remove these errors.

## 2.4.2 Network Simplification

The initial road network taken from the NRA database consisted of separate data for the two directions of travel. Typical section length was of the order of 150m, with some sections very short (around 10m) and some substantially longer (around 2500m).

Each section came with “chainage” values, giving distance of each end of the section from the start of the route corridor.

In order to improve the suitability of this network:

- Sections subject to 50kph or 60kph speed limits were removed – these will be modelled separately using appropriate urban speed-flow curves;
- Chainage values were recalculated, so that corresponding sections in the two directions have comparable chainage values (if this is not done, one-way systems in urban areas can result in the two halves of the carriageway being allocated to different stretches of road)
- Sections were grouped together to give stretches with a minimum section length of around 500m. Each stretch was given the average width values of its constituent sections, weighted by length. Each stretch was allocated the total metres rise and fall and the total degrees turned through of its constituent sections.

Bendiness was capped at a maximum of 360 degrees of turn per kilometre, in order to limit the impact of a single band on what would otherwise be a fairly straight section of road.

Carriageway width was capped at 5m, on the basis that values beyond this were likely to be due to turning lanes or other localised features which have limited impact on overall speeds.

## 2.4.3 Calculation of Road Quality

The COBA speed-flow curve for rural single-carriageway roads was used as the best available information on the relative impact of different aspects of road quality on journey speeds. This formula, based on UK research, gives the free-flow speed on such links as a function of seven attributes:

- Carriageway width
- Shoulder width
- Verge width
- Visibility
- Hilliness
- Bendiness
- Number of junctions

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A simplified version of the COBA formula was used, as follows:

Route Quality Index = 72.7

- .091 x bendiness (degrees per km)
- .007 x hilliness (metres rise/fall per km)
- .00063 x bendiness x hilliness
- + 1.8 x carriageway width (metres)
- + .99 x shoulder width (metres)
- + .3 x footpath & verge width (metres)

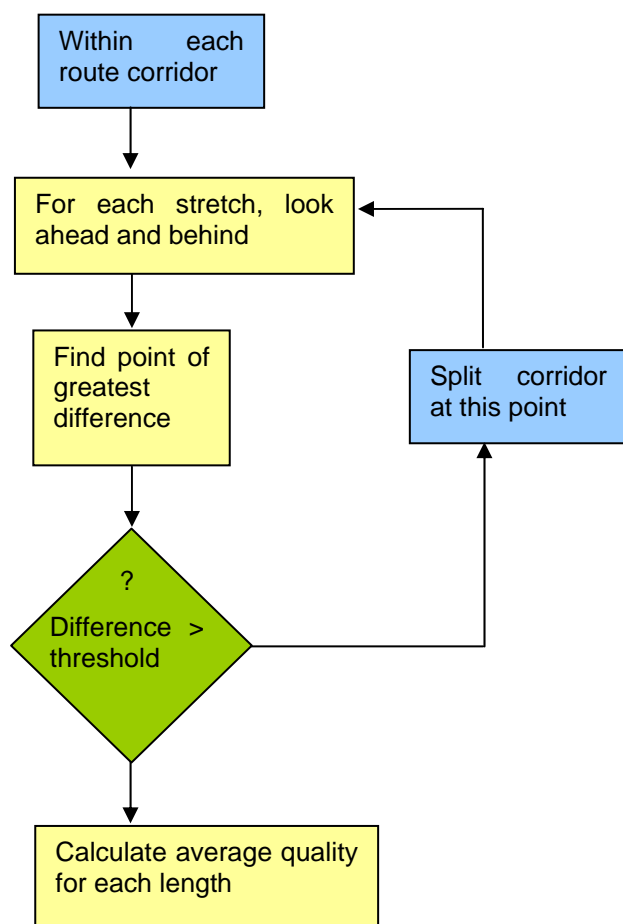
The speed of traffic may depend not only on route quality, but also on other factors such as speed limit, traffic flow, percentage of slow or heavy vehicles, and pavement condition. Nevertheless, for rural links, this index was expected to be strongly correlated with free-flow speed, and this was borne out by subsequent analysis.

This formula was applied to each section, to give a quality score for each 500m stretch of each route in the NSR network.

## 2.4.4 Identifying Points of Change of Route Quality

In order to avoid the need to model the network at 500m resolution, a spreadsheet-based method was developed to identify points of significant change in route quality. This spreadsheet process worked on the 500m stretches imported from the NRA database in a GIS.

The logic is summarised in Figure 2.8, with the following paragraphs explaining each step in more detail.



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**Figure 2.8 – Flowchart for Identifying Changes of Route Quality**

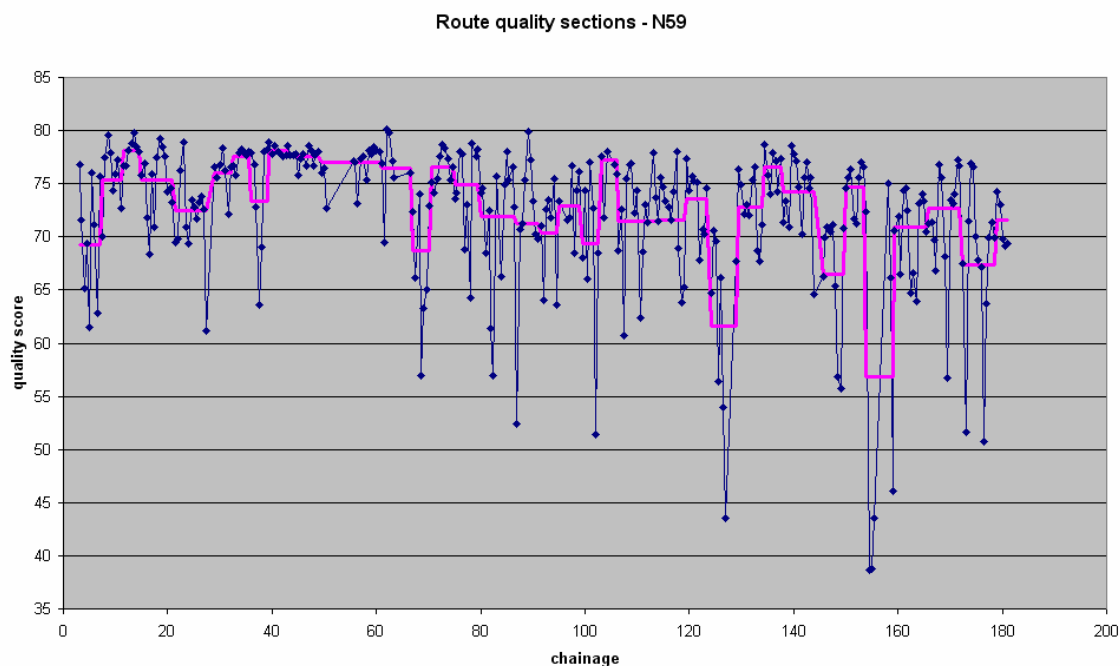
For each stretch, the spreadsheet “looks ahead” to calculate a length-weighted average quality score for that stretch and the stretches ahead (stopping at a previous split-point or a total of 10 stretches or a distance of 3.3 km, whichever comes first). Similarly it “looks behind” to calculate the average quality score for the stretches in the other direction.

Where this difference between the quality ahead and the quality behind is greatest, that is considered the best place to split the route corridor into two links.

If the difference is greater than a given threshold figure, then the split is considered worthwhile. Once the user accepts the split, the spreadsheet finds the new best place to split a link into two. If the difference is less than the chosen threshold, then the process has gone far enough. The average quality score for each link is exported from the spreadsheet back into the GIS.

The method has three parameters which can be adjusted to fine-tune the result. The values used in this study were:

- Unit length of assessment sections – 500m, so as to smooth out the data without too much loss of information
- Minimum Search Distance - the extent of looking ahead and behind – 3.33km – this value was derived by trial-and-error as a compromise between paying too much or too little attention to changes in width over a short distance
- Stopping criterion – quality scores of the two resulting sections differ by less than 1.0. This value for terminating the process was selected on the grounds that with this level of difference in quality scores it starts to become likely that the two sections will be represented in the model by the same speed-flow curve, i.e. further splitting of links has no benefit to the model.



**Figure 2.9 – Quality Scores at 500m Resolution Grouped into Route Sections of Around 5km**

Figure 2.9 shows how the quality scores at 500m resolution (blue) are smoothed out to give resulting links (pink) with different average quality scores.

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## 2.4.5 Splitting Traffic Model Links

The national traffic model network is in node-link format, with attribute information for each direction. Splitting a link requires:

- Creation of a new node object with unique identifier
- Replacement of the existing link object with the two new link objects
- That the new links have appropriate A-node and B-node values
- That the new links have the correct length
- That the new links inherit all other attribute data from the replaced link

The OmniTrans software has a function to do all this automatically as part of an on-screen editing session. The most efficient way to do the splitting of the traffic model network at the points identified was by:

- importing a background layer to OmniTrans, showing the desired links in different colours labelled with their quality scores;
- adding a route quality attribute field to all links;
- manually viewing each NSR corridor in turn from one end to the other,
  - splitting existing traffic model links where there is no existing node within a threshold distance (200m) of the indicated split point, and otherwise letting the existing node stand for the indicated point at which quality changes.
  - editing the network to populate the quality attribute field for each NSR link in turn.

The resulting improved traffic model has the rural NSR network split into links, each with an estimated Route Quality Index value.

In the final version, this Index has a maximum value of 810 for the highest quality roads - wide, straight, flat, with good visibility. An example of a Route with high quality score is indicated in Figure 2.10 below.



**Figure 2.10 – Example of Route with High Quality Score**

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The lowest quality section is Corkscrew Hill on the N67 in north Clare - a steep, narrow road with hairpin bends indicated in Figure 2.11; this has a score of 380, although this is an extreme case.

Around 2% of the links in the network have scores below 500; the median score is 735.

Table 2.1 provides a summary of the resulting maximum, minimum and average quality index scores at route level. Note that these scores apply only to the rural single-carriageway sections of each route, and relate to the base year (2006) traffic model network. They therefore do not reflect recent improvement schemes. Scores have been banded, with the lowest band having a value of 450.

The highest-quality routes are the N75 and N53; with the lowest quality routes being the N70 and N71.



**Figure 2.11 – Aerial View of N67 at Corkscrew Hill**

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**Table 2.1: Quality Scores at Route Level**

route	max RQI score	min RQI score	average RQI score
N75	780	780	780
N53	795	765	779
N61	795	720	768
N78	795	720	763
N60	795	705	762
N62	780	720	762
N76	810	720	762
N80	810	675	761
N84	795	690	761
N68	780	735	758
N63	810	690	753
N66	765	705	747
N55	780	660	745
N69	780	675	745
N54	780	705	743
N72	795	630	742
N73	780	705	741
N83	780	705	740
N77	795	690	736
N65	780	675	735
N52	810	630	732
N81	780	660	728
N58	750	705	725
N74	750	705	725
N51	795	675	724
N85	750	675	718
N59	780	550	715
N87	720	660	696
N67	780	450	694
N86	765	550	693
N56	795	450	689
N71	810	450	675
N70	765	450	673

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## 2.5 RESULTS - BASELINE ASSESSMENT OF EACH ROUTE

The following section provides a brief description and summary of the baseline assessment for each NSR route wholly or partially in the North Region. The drawings in Appendix B provide an illustration of the problems on the NSR network and the possible options identified at the Baseline Assessment Stage.

### 2.5.1 N51 – Drogheda to Delvin

#### 2.5.1.1 Description

The N51 is 54.173 km long and is situated in counties Louth, Meath and Westmeath. The route connects Drogheda to Mullingar (via the N52) through a series of villages and towns including Slane and Navan. The route is significant from a tourist perspective in that it provides access from the M1 to the Newgrange monument.

The route connects with the M1 national primary at Drogheda, connects with the N2 national primary outside Slane and at Navan the route connects with the N3 national primary road. The route also connects with the N52 national secondary road near Delvin in County Westmeath. The N51 will be crossed to the west of Navan by the proposed M3 Clonee to Dunshaughlin scheme. As part of the M3 scheme the existing N51 will be bypassed for a length of some 3.6km to the west of Navan and this new link will be connected to the M3 via a full grade separated junction.

The nearby N52 provides connectivity from Mullingar via Kells and Ardee to Dundalk and in accordance with the National Spatial Strategy is identified as a regionally important corridor. The N51 connects to this route north of Mullingar and provides connectivity between the midlands, Navan and Drogheda. Mullingar is one part of the Athlone/Mullingar/Tullamore Gateway town serving the midlands under the National Spatial Strategy.

#### 2.5.1.2 Existing Condition

This route is of poor geometric standard throughout the majority of its length with the exception of the section between the N2 and the N3 national primaries. The route is expected to carry traffic in excess of 5,000 AADT with a typical HCV content of over 5%. The improved section between the N2 and N3 has a notable accident history, which may indicate a particular problem.

The carriageway lane widths for this route are assessed to be < 3m wide for 57% of the route and < 3.5m wide for 73% of the route. There are intermittent poor forward visibilities when assessed against the NRA design standards over the full length of this route which indicates areas of poor alignment and a lack of overtaking opportunities.

The pavement condition indicators suggest that the existing pavement condition is reasonable at present but the condition should continue to be monitored as some 58% of the route is indicated to have at least 1 non-compliance in respect of the assessed pavement condition indicators.

The presence of the Newgrange Passage Tombs, the River Boyne NHA and the Battle of the Boyne site could present significant environmental constraints on any future upgrade of the route.

Recently completed upgrades on this route include the N51 Navan Inner Relief Road and the N51 Link from M3 Upgrade scheme.

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## 2.5.2 N52 – Dundalk to Nenagh

### 2.5.2.1 Description

The N52 is 203.393 km long and is situated in counties Louth, Meath, Westmeath, Offaly and Tipperary. The route connects Dundalk to Nenagh via a series of villages and significant towns including Ardee, Kells, Mullingar, Tyrrellspass, Kilbeggan, Tullamore and Birr. The route is a nationally important route providing connectivity from the South West (Nenagh and nearby Limerick) to the North East (Dundalk and the North)

The route is significant with its connection to other national primary and secondary routes. The route connects with the M1 at Dundalk and N2 at Ardee in County Louth, connects with N3 at Kells (and the proposed M3) in County Meath, connects with the N4 at Mullingar and M6 at Tyrrellspass and Kilbeggan in County Westmeath, connects with N7 at Nenagh (and proposed M7) in County Tipperary and connects with the N33 at Ardee in County Louth.

The route also connects with the N51 national secondary at Delvin in County Westmeath, connects to the N80 national secondary at Tullamore and to N62 at Birr in County Offaly and the N65 national secondary at Borrisokane in County Tipperary.

The route is of national strategic importance as part of the National Spatial Strategy in providing connectivity between Dundalk the north east Gateway, Mullingar and Tullamore as two parts of the midlands Gateway (which also comprises Athlone). The route is identified as a National Transport Corridor between Tullamore and Dundalk under the National Spatial Strategy.

### 2.5.2.2 Existing Condition

The N52 route carries varying levels of traffic, typically from 2,000 AADT to 16,000 AADT with a typical HCV content of less than 5%. A number of historical accident clusters are noted along the route.

The carriageway lane widths are assessed to be < 3m wide for 36% of the route and < 3.5m wide for 60% of the route. There are poor forward visibilities when assessed to the NRA design standards over intermittent sections of the route which indicates some areas of poor alignment and associated lack of overtaking opportunities.

The pavement condition indicators suggest that the existing pavement condition is generally good at present but the pavement condition should be monitored as some 33% of the route is indicated to have at least 1 non-compliance in respect of the pavement condition indicators assessed.

A number of sections along the N52 have already been upgraded including the N52 Mullingar Bypass, N52 Mullingar to Belvedere, bypasses of Tyrrellstown and Kilbeggan via the M6, N52 Tullamore bypass and N52 Nenagh Bypass. The N52 Kells bypass link road is currently under construction as part of the M3 Clonee to Dunshaughlin Scheme.

The proposed upgrades currently in the planning stage are the Ardee Bypass in County Louth, Carrick Bridge (south end of Mullingar-Belvedere scheme) to Clonfad Road (N6 link road) in County Westmeath and Kilbeggan to Tullamore in Counties Westmeath and Offaly.

The section of the N52 between Tullamore and Birr has been subject to several pavement improvement schemes and is generally considered to be at an acceptable standard.

The route passes close to a number of relatively small designated areas but overall the route would not be considered to be located in particularly sensitive areas.

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## 2.5.3 N53 –Castleblaney to Dundalk

### 2.5.3.1 Description

The N53 is 18.19km long and is situated in counties Louth and Monaghan and connects Dundalk to Castleblaney via Hackballs Cross and Cullaville. The route crosses the border into Northern Ireland to the west of Hackballs Cross for approximately 5km where it becomes the A37 before it crosses back into the Republic west of Cullaville.

The N53 provides the main route between the regionally important towns of Castleblaney and Dundalk. This route may be considered strategically nationally important as it connects with the A37 north of the border.

The route connects the M1 national primary west of Dundalk and connects with the N2 national primary at Castleblaney.

Dundalk is a Gateway under the National Spatial Strategy with Monaghan Town defined as a Hub. The N53 forms part of the main link between the Gateway of Dundalk via Castleblaney and then the N2 to Monaghan Town Hub.

### 2.5.3.2 Existing Condition

The route is expected to carry traffic in the order of 6,500 AADT with a typical HCV content greater than 5%. The route is generally in good condition though some local improvements may be worthwhile. There are a number of locations along the route with accident clusters, namely between M1 and Hackballs Cross, at Hackballs Cross, between Hackballs Cross and the NI Border, at the junction of local Road to Broomfield and for a 3km section of the route south east of Castleblaney.

The carriageway lane widths between the M1 national primary and the Border are generally less than 3.5m wide with poor forward visibilities on the eastern approach to Hackballs Cross.

The pavement condition indicators suggest that the existing pavement condition is generally good at present but that the pavement condition should continue to be monitored as some 31% of the route is indicated to have at least 1 non-compliance in respect of the pavement condition indicators assessed.

Planned schemes along this route include the N53 Ballynacarry Bridge (Co. Monaghan). The route passes close to a number of relatively small designated areas but overall the N53 would not be considered to be located in particularly sensitive areas.

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## 2.5.4 N54 – Monaghan to Cavan

### 2.5.4.1 Description

The N54 is 34.513 km long and is situated in counties Monaghan and Cavan. The N54 connects Monaghan Town to Butlers Bridge just north of Cavan Town via a series of villages and towns including Brandrum, Smithborough, Clones and Cloverhill. The route passes through County Fermanagh in Northern Ireland at two locations where the route becomes the A3.

Both Cavan and Monaghan Towns are listed as Hubs under the National Spatial Strategy. The N54 provides connectivity between the N2 and N12 national primary routes at Monaghan town and the N3 national primary at Butlers Bridge and provides strategic linkage with the A3 and A34 in Northern Ireland to the south of Clones.

This route is significant from a tourism perspective as it provides access to Upper Lough Erne and its surroundings which is an area popular with tourists and pleasure craft.

#### 2.5.4.2 Existing Condition

The route is expected to carry traffic in the order of 1,000 to 6,000 AADT with a typical HCV content of the order of 5%. The route is generally in good condition though some local improvements may be worthwhile. The N54 route has good forward visibilities generally which suggests that a reasonable amount of overtaking opportunities are available.

This carriageway lane widths have been assessed to be < 3m wide for 24% of the route and < 3.5m wide for 64% of the route.

The pavement condition indicators suggest that the existing pavement condition is generally good at present but that the condition should continue to be monitored as some 40% of the route is indicated to have at least 1 non-compliance in respect of the assessed pavement condition indicators.

Planned upgrades along the N54 include the N54/N2 Monaghan Town Link Road.

The route passes close to a number of relatively small designated areas but overall the N54 would not be considered to be located in particularly sensitive areas.

#### 2.5.5 N55 – Athlone to Cavan

##### 2.5.5.1 Description

The N55 is 79.205 km long and is situated in counties Cavan, Longford and Westmeath and connects Cavan Town to Athlone passing through a series of villages and towns including Bellanagh, Granard, Edgeworthstown, Carrickboy, Ballymahon, Tang, The Pigeons, Glassan and Ballykeeran.

At Cavan Town the route connects to the N3 national primary via the N55 Cavan Bypass to the east of the town. The route connects with the N4 national primary Edgeworthstown in County Longford and connects with the N6 national primary at Athlone. The N55 also connects to the N61 and N62 national secondary route via the N6 at Athlone. The section of the route between Dundevan and Killydoon (north of Granard) was realigned in 2004.

Under the National Spatial Strategy Cavan is Hub and Athlone is a Gateway linked to the nearby gateways of Mullingar and Tullamore.

The N55 route is locally important as it is the main north-south route through the northern midlands. It also services commuter traffic to Athlone, Longford, Mullingar and Cavan.

The N55 provides access to Lough Sheelin and Lough Gowna as well Lough Ree on the River Shannon.

##### 2.5.5.2 Existing Condition

Sections of the N55 is expected to carry traffic volumes in between 5,000 and 13,000 AADT with the higher volume on the approaches to Athlone, with a typical HCV content of between 5% and 10%. The route is generally in good condition though some local improvements may be worthwhile.

The carriageway lane widths for the N55 are assessed to be < 3m wide for 46% of the route and < 3.5m wide for 68% of the route. The lane width deficiencies are interspersed with wider sections and this variability may be a contributing factor to the accident history of the route.

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The N55 has good forward visibilities generally which suggests a reasonable amount of overtaking opportunities is available.

The pavement condition indicators suggests that the existing pavement condition is moderate at present and that the pavement condition should be monitored as some 45% of the route is indicated to have at least 1 non-compliance in respect of the assessed pavement condition indicators.

The recent upgrades completed along the N55 include the Cavan Bypass Link Road and the Dundevan to Killydoon scheme.

The route passes close to a number of relatively small designated areas but overall the N55 would not be considered to be located in particularly sensitive areas.

## 2.5.6 N56 – Donegal to Letterkenny

### 2.5.6.1 Description

The N56 is 156.19 km long situated in Co. Donegal and connects Donegal Town to Letterkenny via a coastal route passing through a series of villages and towns including Glenties, Dungloe, Gweedore, and Dunfanaghy. The N56 also serves as the principal route to Killybegs. The N56 connects with the N14 national primary at Letter Kenny and bypasses Donegal Town to the north where it connects with the N15 national primary.

Letterkenny is a linked Gateway with Derry (NI) serving the north-west under the National Spatial Strategy. The N56 does not form a strategic link under the NSS as this function is better served by the N13, N14 and N15 national primary routes. The N56 route is locally important as it serves as the primary access route to the majority of western Donegal.

The N56 is part of an important link between Killybegs, a regionally important fishing port and the N15 national primary road at Donegal town. The route is in an area of natural beauty and is significant from a tourist perspective, providing access to the Donegal Gaeltacht.

### 2.5.6.2 Existing Condition

The route is expected to carry traffic in the order of 5,000 AADT generally increasing to 14,000 AADT on the approach to Letterkenny and 10,000 AADT on the approach to Donegal Town with a typical HCV content of less than 5%. The route is generally of a very poor standard both in terms of width, pavement quality and forward sight visibility.

The carriageway lane widths on the N56 are assessed to be < 3m wide for 58% of the route and < 3.5m wide for 77% of the route. There are poor forward visibilities when assessed against design standards over intermittent sections of the route which indicates sections of poor alignment with associated lack of overtaking opportunities. The historical accident data for the N56 suggests an ongoing issue relating to road safety along the route.

The pavement condition indicators suggest that the existing pavement condition is moderately poor at present with some 66% of the route having at least 1 non-compliance in respect of the assessed pavement condition indicators assessed.

The Mountain Top to Illistrin section of the N56 north of Letterkenny was recently upgraded with upgrades planned for the and Letterkenny Relief Road, Inver to Killybegs, Mountcharles to Inver and Dungloe to Glenties.

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The N56 runs through environmentally sensitive areas passing close to or through Designated Areas. In addition the route also passes through areas characterised by blanket bog which would pose ground conditions difficulties associated with peat removal and rock outcrops.

## 2.5.7 N59 – Sligo to Galway

### 2.5.7.1 Description

The N59 is 296.753 km long and is situated in counties Galway, Mayo and Sligo. The route connects Galway city to Ballysadare in county Sligo via a number of villages and towns including Ballina, Crossmolina, Bellacorrick, Bangor, Ballycroy, Newport, Westport, Clifden and Oughterard. The N59 route is locally important as it provides access to the coastline between Connemara, Mayo and Sligo. The route is one of natural beauty and is significant from a tourist perspective.

The N59 connects with the N4 national primary at Ballysadare, connects with the N26 national primary at Ballina, connects with the N5 national primary at Westport and connects with the N6, and N17 national primaries and N84 national secondary at Galway with onward connectivity to the N18 in the environs of Galway.

Both Galway and Sligo are Gateways under the National Spatial Strategy serving the West and North West. In addition Ballina is one half of a linked Hub with Castlebar. The N59, whilst connecting the Gateways and Hub, would not be the preferred national route to link these centres as the N26, N17 and the N84 provide more direct linkages.

### 2.5.7.2 Existing Condition

The route is expected to carry traffic up to 5,000 AADT for most of the route, increasing to between 7,000 and 18,000 AADT on the approach to Galway with a typical HCV content of less than 5%. The route is generally of a very poor standard in terms of width, pavement quality and forward sight visibility.

The carriageway lane widths are assessed to be < 3m wide for 67% of the route and < 3.5m wide for 88% of the route. There are poor forward visibilities over intermittent sections of the route which indicates sections of poor alignment with associated lack of overtaking opportunities. The accident data suggests accidents regularly occur along the route.

The pavement condition indicators suggest that the existing pavement condition is moderate at present and should be monitored as some 59% of the route is indicated to have at least 1 non-compliance in respect of the pavement condition indicators assessed.

Sections of the N59 are being planned for upgrade including Ballina Relief Road, Crossmolina to Ballina, Galway to Moycullen, Moycullen Bypass, South Westport Relief Road; Westport to Mulranny; N5 Westport to Bohola (including N59 Westport Relief Road (Northern)); Clifden to Oughterard. A 3.4km section at Derrylea (east of Clifden) was constructed in 2010.

The route also runs through environmentally sensitive areas passing close to or through Designated Areas. The route also passes through areas characterised by blanket bog which presents ground condition difficulties associated with peat removal and rock outcrops.

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## 2.5.8 N62 – Athlone to Horse & Jockey

### 2.5.8.1 Description

The N62 is 95.011 km long and is situated in counties Westmeath, Offaly, and Tipperary and connects Athlone to Horse and Jockey (N8) via an inland route passing through a series of villages and towns including Fardrum, Ballynahown, Ferbane, Cloughan, Birr, Sharavogue, Roscrea, Templemore and Thurles. The route is locally important as it serves as a north south midlands route connecting the significant towns of Athlone, Birr, Roscrea and Thurles with Athlone being one part of the Athlone/Mullingar/Tullamore Gateway serving the midlands under the National Spatial Strategy.

The route connects with the N6 national primary Athlone, connects with the N7 national primary at Roscrea and connects with the N8 national primary at Horse and Jockey. The route also connects with the N55 and N61 national secondary routes at Athlone, connects with the N52 national secondary at Birr and the N75 national secondary at Thurles.

### 2.5.8.2 Existing Condition

The N62 is expected to carry traffic of the order of 6,000 AADT throughout most of its length with the exception of the section between Thurles and Horse and Jockey (M8) where the traffic levels are of the order of 11,000 AADT with a typical HCV content of less than 5%. The route is of mixed quality combining relatively good sections of road with sections of poor alignment. On the poorer sections of the route, particularly between Athlone and Birr, the overtaking opportunities are intermittent and at times constrained by both the horizontal and/or the vertical alignment. There are limited forward visibilities over the poorer standard parts of this route which indicates a lack of quality overtaking opportunities. The accident data suggests accidents regularly occur along the route.

The carriageway lane widths for the N62 are assessed to be < 3m wide for 45% of the route and < 3.5m wide for 70% of the route.

The pavement condition indicators suggest that the existing pavement condition is moderately good at present with the worst section being between Athlone and Birr. The pavement condition should be monitored as some 37% of the route is indicated to have at least 1 non-compliance in respect of the pavement condition indicators assessed.

The route passes close to a number of very small environmentally sensitive areas but overall the N62 is not located in a particularly sensitive area.

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## 2.5.9 N63 – Longford to Galway

### 2.5.9.1 Description

The N63 is 94.732 km long and is situated in counties Galway, Roscommon and Longford. The route connects the environs of Galway City with Roscommon and Longford towns via a series of villages and towns including Moylough, Mountbellew Bridge, Newbridge, Ballygar, Athleague, Lanesborough and Kilashee.

The route connects with the N17 national primary outside Galway City and connects with the N4 and N5 national primary routes at Longford town. The route also connects with the N60 and N61 national secondary routes at Roscommon town.

The proposed M17 Galway to Tuam scheme crosses the N63 route between the existing N17 and Mount Bellew Bridge.

The N63 route forms an important link between Galway city which is a Gateway under the National Spatial Strategy, as well as being a regionally important port and airport and the midlands including the county towns of Longford and Roscommon.

### 2.5.9.2 Existing Condition

The route is expected to carry traffic of the order of 6,000 AADT with the exception of the sections on the approach to the N17 and on the approach to Longford, where the traffic levels are of the order of 11,000 AADT with a typical HCV content of less than 5%, though this percentage increases to between 5% and 10% between Longford and Roscommon. The route is of mixed quality combining relatively good sections of road with sections of poor alignment. On the poorer sections of the route, particularly between the N17 and Roscommon, the overtaking opportunities are intermittent and at times constrained by the horizontal and/or the vertical alignment. The sections from Roscommon to Lanesborough and on the southern approach to Roscommon are noted to be of a generally sufficient standard. The accident data suggests accidents regularly occur along the route.

The carriageway lane widths are assessed to be < 3m wide for 62% of the route and < 3.5m wide for 76% of the route.

The pavement condition indicators suggest that the existing pavement condition is moderately poor at present and should be monitored as some 53% of the route is indicated to have at least 1 non-compliance in respect of the pavement condition indicators assessed.

The route passes close to a number of very small environmentally sensitive areas but overall it is not located in a particularly sensitive area though it is noted that it crosses the Shannon, Suck, Clare and Abbert River Basin systems, which are all designated areas.

## 2.5.10 N80 –Athlone to Enniscorthy

### 2.5.10.1 Description

The N80 is 136.923 km long and situated in counties Offaly, Laois, Carlow and Wexford. The route connects Moate to the east of Athlone with Enniscorthy through a series of villages and towns including Clara, Tullamore, Killeigh, Mountmellick, Portlaoise, Stradbally, Ballickmoyler, Carlow, Ballon, Kildavin and Bunclody. The N80 strategically connects Athlone, Tullamore, Portlaoise and their associated hinterlands with the South East including Rosslare port.

The N80 connects with the M6 national primary at Moate, connects with the M7 national primary at Portlaoise, connects with N9 national primary at Carlow and connects with the N11 national primary at Enniscorthy. The route also connects with the N52 national secondary at Tullamore, connects with the N78 national secondary south of Ballylynan and connects with the N81 national secondary near Ballon.

In terms of the National Spatial Strategy, the N80 provides an important linkage for the midlands I Gateway of Athlone/Mullingar/Tullamore to the national primary road network and to the port of Rosslare.

The route may be classified as an inter-urban route though there may be an element of commuting associated with the larger urban centres.

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### 2.5.10.2 Existing Condition

The route is expected to carry traffic ranging from 5,000 AADT between Enniscorthy and Bunclody, 9,000 AADT between Bunclody and Carlow, 5,000 AADT between Carlow and Stradbally and 10,000 to 15,000 AADT between Stradbally and Moate. The route carries a typical HCV content of less than 5% with the exception of the section between the N81 and the N11 where the HCV percentage is between 5% and 10%. The N80 route is of reasonably good quality but with sections of poorer standard alignment and width. On the poorer sections of the route, the overtaking opportunities are intermittent and at times constrained by the horizontal and/or the vertical alignment.

Sections of the route that have been upgraded in recent years include the sections associated with the N52 Tullamore bypass and the M6 upgrade at Moate, which includes a new grade separated junction with the N80.

Planned upgrades along the route include the N80 Mountmellick Relief Road and the Whitemills realignment.

The N80 route passes close to a number of very small environmentally sensitive areas and over the River Barrow basin in Carlow and runs parallel in part to the River Slaney basin but overall it is not located in a particularly sensitive area.

The carriageway lane widths are assessed to be < 3m wide for 16% of the route and < 3.5m wide for 42% of the route.

The pavement condition indicators suggest that the existing pavement condition is moderately good at present but should continue to be monitored as some 31% of the route is indicated to have at least 1 non-compliance in respect of the pavement condition indicators assessed.

### 2.5.11 N87 – Belturbet to Swanlibar

#### 2.5.11.1 Description

The N87 is 28.054 km long and is situated in county Cavan and connects Belturbet to Swanlibar at the Northern Ireland border passing through the villages of Ballyhugh, Ballyconnell and Bawnboy. It connects with the A32 at the border and serves commuter traffic into Enniskillen town and possibly also to Cavan town by linking up with the N3 at Belturbet. This route would be considered strategically nationally important for its link with the A32 at the border.

The route is regionally important as it serves as a primary access to Enniskillen and Cavan towns from Belturbet and the villages of Ballyhugh, Ballyconnell, Bawnboy and Swanlibar.

The route connects with the N3 national primary route at Belturbet and connects with the A32 secondary route in Northern Ireland at the border just north of Swanlibar.

Enniskillen is listed as a town with a major interregional role in Northern Ireland under the National Spatial Strategy and the nearby towns of Cavan and Monaghan are Hubs.

#### 2.5.11.2 Existing Condition

The route is expected to carry traffic of the order of 2,500 AADT with a typical HCV content of less than 5%. The route is of mixed quality combining occasional good sections of road with mostly sections of poor alignment. On the poorer sections of the route, the overtaking opportunities are intermittent and at times constrained by the horizontal and/or the vertical alignment. There are limited forward visibilities over the poorer standard parts of this route

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which indicates a lack of quality overtaking opportunities. The accident data suggests accidents regularly occur along the route, particularly between Belturbet and Bawnboy.

Planned improvements along this route include the N87 Ballyconnell Inner Relief Road (currently, April 2010 procuring a contractor) and the N87 Belturbet to Ballyconnell scheme.

The route passes close to a number of small environmentally sensitive areas but overall it is not located in a particularly sensitive area.

The carriageway lane widths are assessed to be < 3m wide for 77% of the route and < 3.5m wide for 92% of the route.

The pavement condition indicators suggest that the existing pavement condition is moderately poor at present and should be monitored as some 44% of the route is indicated to have at least 1 non-compliance in respect of the pavement condition indicators assessed.

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## 3 OBJECTIVES OF STUDY

### 3.1 NEED FOR AND OBJECTIVES OF INTERVENTION

Good decisions need clear objectives and ideally these should be Specific, Measurable, Agreed, Realistic and Time-dependent (i.e. SMART). The objectives need to relate to both the policy context and the need for an intervention at a local level. An analysis of need followed by objective setting are two important steps in the NRA's Project Appraisal Guidelines (PAG). This is because they ensure that interventions address identified problems in a corridor. In the NSRNS they perform an additional role in that they can be used at the option generation and option sifting stage to help ensure that projects that meet the strategic objectives of the NSR are screened 'in', whilst projects that serve only a 'local' function are screened 'out'.

The term 'objective' is often loosely used. It can be used to refer to ultimate objectives, aims or goals. These are often strategic or high-level objectives such as the level of economic growth or social cohesion and are often set out in government policy documents. It can also be used to refer to objectives of a programme or project. These are more tactical in nature.

This chapter therefore sets out the economic, social and transport policy context of the NSR network before identifying the approach that will be used to identify any changes to the definition of the roads in NSR network, the method to identify the performance of the proposed NSR network and the objectives of any intervention.

### 3.2 POLICY CONTEXT

A number of central government policy documents affect transport policy. These include the National Spatial Strategy, Transport 21, National Development Plan, Smarter Travel and Framework for Sustainable Economic Renewal. The objectives contained within these documents can be viewed as ultimate objectives using the above classification of objectives. A summary of the key points in these documents in relation to transport and the NSR network in particular is set out below.

#### 3.2.1 National Development Plan

The National Development Plan (NDP) 2007-2013<sup>8</sup>, published in 2007, is a major seven year investment programme for economic and social development in Ireland. It sets out the economic and social investment priorities needed to realise the vision of a better quality of life for all. The objectives of the NDP are to:

- strengthen and improve Ireland's international competitiveness;
- continue sustainable national economic and employment growth;
- foster balanced regional development;
- promote social inclusion.

The NDP states that dealing with infrastructure deficits is therefore crucial to our future economic growth, regional development and environmental sustainability. Under its Transport Programme, the NDP also states the key strategic objective of creating a road network that will promote regional, national and international competitiveness. The principal objectives of its Roads Sub-programme, which are of particular relevance to the NSR network, include:

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<sup>8</sup> Department of Finance (2006) *Transforming Ireland – A Better Quality of Life for All*, National Development Plan 2007-2013.

- improvement of road links between the main Gateways designated under the NSS;
- targeted improvements of a number of key NSRs;
- continued upgrading of road links to Northern Ireland.

The NDP also identifies key investment priorities for individual Gateways. In particular, both the NDP and selected background research highlighted the need for increased connectivity between the Gateways and their hinterlands (Fitzpatrick Associates, 2005)<sup>9</sup>.

### 3.2.2 Framework for Sustainable Economic Renewal

The Framework for Sustainable Economic Renewal<sup>10</sup> sets out the Government's vision for the next phase of Ireland's economic development. The strategy is to:

- address the current economic challenges facing the Irish economy by stabilising the public finances, improving competitiveness, assisting those who lose their jobs, and supporting Irish business and multinational companies;
- invest heavily in research and development (R&D), incentivise multinational companies to locate more R&D capacity in Ireland, and ensure the commercialisation and retaining of ideas that flow from that investment;
- implement a "new green deal" to move us away from fossil fuel-based energy production through investment in renewable energy and to promote the green enterprise sector and the creation of "green-collar" jobs;
- develop first-class infrastructure that will improve quality of life and increase the competitiveness of Irish business.

On road infrastructure, the short-term action points that it identifies are the completion of the MIUs by 2010 and the continued development of the Atlantic Road Corridor.

### 3.2.3 National Spatial Strategy 2002-2020

The National Spatial Strategy (NSS) 2002-2020<sup>11</sup> published in 2002 presents "a coherent national planning framework for Ireland for the next 20 years. The NSS aims to achieve a better balance of social, economic and physical development across Ireland, supported by more effective planning". In this regard, the NSS promotes:

- a strong, competitive economic position;
- an environment of the highest quality;
- a better quality of life for people.

In order to drive development in the regions, the NSS proposes that areas of sufficient scale and critical mass are built up through a network of nine "Gateways" and nine "Hubs". Gateways should be drivers of development in their region, while Hubs support and are supported by the Gateways and link out to wider rural areas. The role of the Gateways acting at the national level, together with the Hubs acting at the regional and county levels, needs to be partnered by the county towns and other larger towns as a focus for business, residential, service and

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<sup>9</sup> Fitzpatrick Associates (2005) *Implementing the NSS: Investment Priorities in the Gateways*. Report Prepared for the Department of the Environment, Heritage and Local Government and Forfás.

<sup>10</sup> Department of the Taoiseach (2008) *Building Ireland's Smart Economy: A Framework for Sustainable Economic Renewal*.

<sup>11</sup> Department of the Environment, Heritage and Local Government (2002) *National Spatial Strategy for Ireland 2002-2020: People, Places and Potential*, Dublin:

amenity functions. The NSS also identifies an important need to support the role of smaller towns, villages and rural areas at the local level.

Transport is identified in the NSS as a key part of overall spatial policy and an important tool in supporting balanced regional development. Part of this involves building on Ireland's radial transport system of main roads and rail lines connecting Dublin to other regions, and developing an improved mesh or network of roads and public transport services. For the roads network in particular, this means that:

- implementation of key road investment programmes is a key element in enhancing regional accessibility and thereby underpinning balanced regional development;
- enhanced road links are needed to improve interaction between Gateways and Hubs;
- regional roads are to play a key role in linking the main national transport corridors to wider rural areas and smaller towns and villages within these areas.

Furthermore, a number of NSR routes currently provide “strategic linking corridors” identified within the NSS. These include:

- the N80, which links Athlone/Tullamore (via the N11/N25) to Rosslare Europort;
- the N52, which links Tullamore and Mullingar to Dundalk;
- the N61, which links Athlone to Boyle and then (via the N5/N26) on to Ballina.

Investment in the NSR network is therefore a key element of the overall NSS framework.

### 3.2.4 Smarter Travel – A Sustainable Transport Future

*Smarter Travel – A Sustainable Transport Future*<sup>12</sup> is a new sustainable transport policy for Ireland for the period 2009-2020. Delivering this policy is a key objective of Government because transport and travel trends in Ireland are currently unsustainable.

Despite the much needed investment promoted through Transport 21, congestion will get worse, transport emissions will continue to grow, economic competitiveness will suffer and quality of life will decline unless more sustainable transport policies are adopted. The Government has therefore reaffirmed its vision for sustainability in transport by setting down key goals, which are to:

- improve quality of life and accessibility to transport for all and, in particular, for people with reduced mobility and those who may experience isolation due to lack of transport;
- improve economic competitiveness through maximising the efficiency of the transport system and alleviating congestion and infrastructural bottlenecks;
- minimise the negative impacts of transport on the local and global environment through reducing localised air pollutants and greenhouse gas emissions;
- reduce overall travel demand and commuting distances travelled by the private car;
- improve security of energy supply by reducing dependency on imported fossil fuels.

In relation to roads, the policy proposed is to retain investment in roads that will remove bottlenecks, ease congestion and pressure in towns and villages, and provide the necessary infrastructure links to support the NSS. This is consistent with a reviewed focus on prioritised NSR network improvements.

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<sup>12</sup> Department of Transport (2009) *Smarter Travel – A Sustainable Transport Future: A New Transport Policy for Ireland 2009-2020*. .

In relation to the movement of goods, a specific action is to deal with freight in a more integrated and efficient way that reduces emissions, noting that 95% of goods are moved by road and over 30% of greenhouse gas emissions are from the freight sector.

More generally, outside the Greater Dublin Area (GDA) and the major rail corridors, bus transport is the only public transport option for most travellers. For bus transport providers, including the CIE group and private operators, quality roads are an essential requirement. Investment in the road network, including the NSRs, is therefore a key ingredient in improved public transport in Ireland. Improved public bus transport is also a key priority under the Government's Framework for Sustainable Economic Renewal.

### 3.2.5 Transport 21

Transport 21, published by the Department of Transport in 2005<sup>13</sup>, is a capital investment framework, implemented through the NDP (see below), through which Ireland's transport system will be developed over the period 2006-2015. The projects and programmes that make up Transport 21 aim to:

- increase accessibility – making it easier for everybody to get to and from work, school, college, shopping and business;
- ensure sustainability – recognising that a modern transport system must be sustainable from an economic and environmental perspective;
- expand capacity – addressing existing deficiencies and providing for future growth;
- enhance quality – improving safety, accessibility, integration, reliability, speed and comfort.

One of the key objectives of the “national programme” element of Transport 21 is to create a high quality, efficient national road and rail network that are consistent with the objectives of the NSS. Priorities for renewal and upgrade that Transport 21 identifies for the NSR network include the following routes:

- N52 (Dundalk-Mullingar-Tullamore-Birr-Nenagh);
- N56 (Donegal-Letterkenny Coastal Route);
- N59 (Mayo-Galway Coastal Route);
- N61 (Athlone-Roscommon-Boyle);
- N67 (Clare Coastal Route);
- N69 (Limerick-Tralee);
- N70 (Ring of Kerry);
- N71 (West Cork Coastal Route);
- N80 (Tullamore-Portlaoise-Carlow-Enniscorthy);
- N86 (Tralee-Dingle).

Investment in NSRs is therefore part of the Transport 21 agenda.

## 3.3 NETWORK DEFINITION

The existing NSR network comprises approximately 2,708 km of road on 34 routes throughout Ireland (i.e. the N51-N87 inclusive – see Table 1.1). It provides a hierarchical level of network connectivity between regional centres and to/from National Primary Roads. The network also provides for accessibility to areas of the country that have high amenity or tourism value or

<sup>13</sup> [http://www.transport21.ie/Home/Home\\_Page/index.html](http://www.transport21.ie/Home/Home_Page/index.html)

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suffer from higher levels of social exclusion due to their peripheral location (e.g. routes such as the N56, N59, N67, N70 and N86).

The need to have a national network of routes, such as the national secondary roads, managed by a central government agency primarily arises as a consequence of the existence of long distance traffic combined with decentralised government. Long distance traffic almost by definition will cross county boundaries and may pass through several counties en-route to its final destination. Furthermore such traffic, when taken as a whole, is often of national importance. Given that there is a high potential that transport priorities will differ between counties and between counties and central government, it then becomes in the national interest to manage a network that serves strategic traffic centrally. This role in combination with the ultimate economic, social and transport policy objectives set out above mean that the NSR network fulfils three broad functions:

- Economic – supporting economic growth;
- Social – accessibility for all; and
- Strategic – providing for inter-county traffic.

An analysis of the existing national secondary network indicates that in the main the routes are predominantly rural and inter-urban and are characterised by being medium length through and semi-through routes; carrying medium to heavy volumes of traffic, with an annual average daily traffic (AADT) of over 2,000 vehicles; serving as connecting roads between principal towns; serving medium to large geographical regions; forming extensions to the National Primary Roads; and linking National Primary Roads together to form a network.

Such criteria however do not provide a basis for including new routes into the NSR network or removing some routes from the network. Instead criteria that specifically relate to the function of the national secondary roads are needed (i.e. economic, social and strategic). Six criteria and five indicators to assess them are proposed. These criteria and indicators are summarised in Table 3.1 as well as how the five indicators map onto the six criteria.

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Table 3.1: Function of the National Secondary Road Network and Criteria for Inclusion of Roads in the Network

Criteria encompassing the function of the national secondary network	Indicators				
	Volume of traffic with both trip ends in a Gateway/Hub	Volume of traffic with one trip end in a zone containing a port or airport	Proportion of business traffic	Proportion of HGV traffic	Proportion of county population within different threshold distances from a national route
<b>National economic interest</b>					
Support NSS gateways and hubs	X				
Access to nationally-significant ports and airports		X			
High proportion of economically high-value traffic			X	X	
<b>National social interest</b>					
Binding the nation together					X
Balanced regional development	X				X
<b>Strategic function</b>					
Inter-county traffic	X	X			

### 3.4 THE NEED FOR A TRANSPORT INTERVENTION

The need for a transport intervention is to be assessed for each of the existing NSR routes and each of the proposed new routes. This aspect of the analysis was reported in the *Baseline Report* along with a technical description of each route corridor. The objective of the analysis of need for each route corridor is to identify which sections of the corridor fail to achieve acceptable network performance (relating to accidents, environment and journey times) and are thus considered to constitute problems which should be addressed if at all possible.

Initially each of the 34 National Secondary routes was broken up into sections that are intersected by National Primary or Secondary Routes. In the cases of some of the longer western coastal routes which are not intersected by national routes, the route was split at those places which seem the most natural termini, e.g. the N56 at Dunfanaghy, where one section runs south east to Letterkenny and the other runs south west along the coast. This proposed breakdown of the existing National Secondary Road network, gives 112 separate corridors for analysis. The corridor lengths vary from 2.5km to 76km with an average length of corridor 24km. Table 3.2 details the different corridor sections for the existing NSR network.

**Table 3.2: NSR Corridor Sections for Existing NSR**

Corridor	Road	From	To	Length (approx)
N51a	N51	Drogheda	Slane (N2)	11.9
N51b		Slane (N2)	Navan (N3)	12.1
N51c		Navan (N3)	Athboy	18.3
N51d		Athboy	Delvin (N52)	12.3
N52a	N52	Dundalk	M1	10.0
N52b		M1	Ardee (N2)	15.0
N52c		Ardee (N2)	Kells (N3)	29.2
N52d		Kells (N3)	Delvin (N51)	21.7
N52e		Delvin (N51)	Mullingar (N4)	18.2
N52f		Mullingar (N4)	N6	17.9
N52g		N6	Tullamore (N80)	10.4
N52h		Tullamore (N80)	Birr (N62)	36.5
N52i		Birr (N62)	Borrisokane (N65)	19.6
N52j		Borrisokane (N65)	Nenagh (N7)	21.1
N53	N53	Dundalk	Castleblayney	18.1
N54a	N54	Monaghan	Clones	19.5
N54b		Clones	Cavan	20.0
N55a	N55	Cavan	Granard	27.3
N55b		Granard	Edgeworthstown (N4)	12.1
N55c		Edgeworthstown (N4)	Athlone (N6)	38.6
N56a	N56	Letterkenny	Dunfanaghy	36.9
N56b		Dunfanaghy	Gweedore	44.2
N56c		Gweedore	Dunglow	17
N56d		Dunglow	Glenties	27

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Corridor	Road	From	To	Length (approx)
N56e		Glenties	Killybegs(Dunkineely)	27
N56f		Killybegs	Donegal	19
N58	N58	Bellavary	Foxford	11.3
N59a	N59	Ballysadare	Ballina (N26)	53.4
N59b		Ballina (N26)	Bangor	42.6
N59c		Bangor	Westport (N5)	60.7
N59d		Westport (N5)	Clifden	65.2
N59e		Clifden	Galway	75.8
N60a	N60	Castlebar	Claremorris (N17)	27.3
N60b		Claremorris (N17)	Ballyhaunis (N83)	17.4
N60c		Ballyhaunis (N83)	Castlerea	19.2
N60d		Castlerea	Roscommon	29.4
N61a	N61	Boyle	Tulsk (N5)	27.1
N61b		Tulsk (N5)	Roscommon (N60)	17.2
N61c		Roscommon (N60)	Athlone (N6)	30.5
N62a	N62	Athlone (N6)	Birr (N52)	34.8
N62b		Birr (N52)	Roscrea ( N7)	19.5
N62c		Roscrea (N7)	Templemore	18.3
N62d		Templemore	Thurles	14.1
N62e		Thurles	Horse & Jockey (N8)	8
N63a	N63	Longford	Lanesborough	16.1
N63b		Lanesborough	Roscommon	14.2
N63c		Roscommon (N60)	N17	65.3
N65a	N65	Borrisokane	Portumna	15.1
N65b		Portumna	Loughrea	25.4
N66	N66	Gort	Loughrea	24.6
N67a	N67	Kilcolgan (N18)	Lisdoonvara	45.8
N67b		Lisdoonvara	Ennistimon	12
N67c		Ennistimon	Miltown Malbay	15.1
N67d		Milltown Malbay	Kilkee	30.3
N67e		Kilkee	Kilrush	12.8
N67f		Kilrush	Tarbert	11.5
N68	N68	Kilrush	Ennis	40.7
N69a	N69	Limerick	Askeaton	26.2
N69b		Askeaton	Foynes	10.4
N69c		Foynes	Tarbert	20.4
N69d		Tarbert	Listowel	17.5
N69e		Listowel	Tralee	26.3
N70a	N70	Tralee	Killorglin (N72)	25.6

Corridor	Road	From	To	Length (approx)
N70b		Killorglin (N72)	Cahersiveen	40.2
N70c		Cahersiveen	Waterville	16.6
N70d		Waterville	Sneem	33.3
N70e		Sneem	Kenmare	26
N71a	N71	Cork	N25	1.9
N71b		N25	Junction with R589	8
N71c		Junction with R589	Bandon	17
N71d		Bandon	Clonakilty	21
N71e		Clonakilty	Skibbereen	31.9
N71f		Skibbereen	Bantry	32.1
N71g		Bantry	Kenmare (N70)	44.8
N71h		Kenmare (N70)	Killarney	33.3
N72a	N72	Dungarvan	Lismore	25.3
N72b		Lismore	Fermoy(N8)	27.5
N72c		Fermoy (N8)	Mallow (N20)	32.4
N72d		Mallow (N20)	Killarney (N22)	60.7
N72e		Killarney (N22)	Killorglin	19.6
N73a	N73	Mallow	N72	21.1
N73b		N72	Mitchelstown	9.5
N74a	N74	Tipperary	Golden	12.5
N74b		Golden	Cashel	6.8
N75	N75	Thurles	N8	8.9
N76	N76	Clonmel	Kilkenny	43.7
N77	N77	Kilkenny	Durrow	27.1
N78a	N78	Kilcullen	Athy	22.3
N78b		Athy	N80	8.8
N78c		N80	Castlecomer	18.8
N78d		Castlecomer	N77 nr Kilkenny	12.7
N80a	N80	Moate (N6)	Tullamore (N52)	20.9
N80b		Tullamore (N52)	Portlaoise (M7)	36.5
N80c		Portlaoise (M7)	N78	19
N80d		N78	Carlow	15.6
N80e		Carlow	N81 nr Ballon	19.5
N80f		N81 nr Ballon	N11 nr Enniscorthy	26.6
N81a	N81	Dublin	M50	8.5
N81b		M50	N82 nr Saggart	6.2
N81c		N82 nr Saggart	Blessington	14.1
N81d		Blessington	Baltinglass	29.9
N81e		Baltinglass	Tullow	17.1

Corridor	Road	From	To	Length (approx)
N81f		Tullow	N78 nr Ballon	8.2
N82a	N82	N7	N81	2.5
N83a	N83	Knock Airport	Ballyhaunis (N60)	15.2
N83b		Ballyhaunis (N60)	Tuam	29.9
N84a	N84	Galway	Ballinrobe	46
N84b		Ballinrobe	Castlebar	27.3
N85	N85	Ennis	Ennistimon	32.2
N86	N86	Tralee	Dingle	49.4
N87a	N87	Belturbet	Ballyconnell	11.7
N87b		Ballyconnell	Swanlibar	15.8

A transport intervention is appraised against five criteria: environment, safety, economy, accessibility and social inclusion and integration. Any investment in the national secondary road network needs to minimise or reduce the impact on the environment whilst promoting safety, the economy, accessibility and social inclusion as well as integration. In the context of a national secondary road network which serves a strategic function and supports economic growth through the Gateway cities and Hubs whilst facilitating access to key international gateways the main determinant of economic, accessibility and social inclusion and integration benefits is the direct cost of transport. The link between the direct costs of transport and the economy is quite clear, but it is also (in the context of the NSR) a good indicator for accessibility and social inclusion as by reducing the direct costs of transport access to and between Gateway cities and Hubs accessibility and integration improves. This is because services will centralise in the Gateway cities and Hubs and improved access to them, through lower direct costs of transport, is therefore important in promoting accessibility, social inclusion and integration objectives.

The objectives of investment in the national secondary road network can therefore be summarised as:

- To reduce the direct costs of transport;
- To reduce accident numbers and the proportion of fatal and serious injuries; and
- To minimise impact on the environment.

It should be noted that the direct costs of transport encompass time costs and quality of journey costs as well as the out of pocket costs associated with fuel and vehicle maintenance and depreciation. Table 4. maps the three objectives of improving the NSR network onto the five appraisal criteria.

Thirteen indicators that assist in describing the performance of the each national secondary route are set out in Table 3.4. These indicators focus exclusively on the performance of the national secondary route against the objectives of the investment programme. A poor performance against any one indicator does not itself constitute a rationale for investment, but instead contributes to a broad picture of how well each national secondary route performs. The focus in identifying poor performance is to identify which sections of each corridor fail to achieve acceptable network performance (relating to accidents, environment and journey times).

The data for the assessment of these indicators will be drawn from a variety of sources these include the transport model, journey time surveys (undertaken as part of the traffic model development), and engineering, accident and environment datasets i.e. NRA Road Needs GIS

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Database, GIS databases for Natura 2000, SPAs, SACs, NHAs sites, Database for Protected Areas under Water Framework Directive designated site databases, database for National Monuments and Protected Structures and CORINE. The results of this assessment are reported in the *Baseline Report*.

**Table 3.3: The Appraisal Criteria and the Objectives of Improving the NSR Network**

Appraisal criteria	To reduce the direct costs of transport	To reduce accident numbers and the proportion of fatal and serious injuries	To minimise impact on the environment
Environment			X
Safety		X	
Economy	X		
Accessibility and social inclusion	X		
Integration	X		

### 3.5 SMART CORRIDOR OBJECTIVES AND THE OUTPUT OF THE ASSESSMENT OF NEED

The final output of the *Baseline Report* is a brief summary of the performance of each national secondary route corridor and a view as to what constitutes problems in the corridor. Again it needs to be stated that one of the focuses of the report, in addition to giving a technical description of each route corridor, is to identify which sections of each corridor fail to achieve acceptable network performance (relating to accidents, environment and journey times) and are thus considered to constitute problems which should be addressed if at all possible. A set of SMART objectives at the corridor level that specifically relate to these problems will also be developed. An example of such SMART objectives for a particular corridor could be:

- Improve pavement condition;
- Reduce accident numbers to average for road type;
- Increase average journey speeds on rural sections of the route to within 80% of speed limit.

These SMART corridor specific objectives are critical in providing the link between the ultimate objectives of policy (as set out for example in the National Spatial Strategy or the National Development Plan and reviewed in Section and the route options that will be generated, appraised and prioritised – the methodologies for which are discussed in the chapters following this.

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**Table 3.4: Objectives of Improving the NSR and Indicators of Performance**

Objective of the NSR	Indicator	Included in interim and/or final Baseline and Future year analysis report	
<b>To reduce the direct costs of transport</b>	Are travel times on rural sections of the corridor less than the times that would be achieved when travelling at 80% of the speed limit?	Final only	Introduction
	Do urban areas significantly impact on journey times?	Final only	Baseline
	Are volume to capacity ratios in the peak periods greater than 0.75 (noting the peak periods will be at different times of the day in different parts of the network)?	Final only	<b>Objectives</b>
	Are sight distances poor? <sup>1</sup>	Interim and Final	Methodology
	Is the quality of the road surface acceptable?	Interim and Final	Option Identification
<b>To reduce accident numbers and the proportion of fatal and serious injuries</b>	Is the accident rate worse than average?	Interim and Final	Costing
	Is the accident severity rate worse than average?	Interim and Final	Option Appraisal
	Is there a lack of consistency in design standard between adjoining route sections?	Interim and Final	Recommendations
	Are sight distances poor? <sup>1</sup>	Interim and Final	Cycling & walking
	Do accident black spots exist?	Interim and Final	
<b>To minimise the additional impact on the environment</b>	Does the route impact on a Special Area of Conservation?	Interim and Final	
	Does the route impact on a National Monument	Interim and Final	
	Are noise thresholds exceeded?	Final only	
	Are air pollution thresholds exceeded?	Final only	

Note 1: Poor sight distances have both a safety and travel time impact

## 4 APPRAISAL AND PRIORITISATION METHODOLOGY

### 4.1 APPRAISAL PROCESS

This chapter sets out an overview of the principles and some of the details of the appraisal and prioritisation process that was undertaken. The methodology is fundamental to achieving one of the principal outcomes of the NSRNS, that of a prioritised set of routes that will form the basis for an emerging programme of National Secondary Roads improvement projects.

Transport appraisal in Ireland is guided by three principal documents: the Department of Finance's project appraisal guidelines<sup>14</sup>, the NRA's Project Appraisal Guidelines (NRA, 2008)<sup>15</sup> and the Department of Transport's Common Appraisal Framework (DoT, 2007)<sup>16</sup>. The appraisal of national secondary road projects is therefore undertaken against five primary criteria - environment, economy, safety, accessibility and integration. Schemes are compared using these criteria, and multi-criteria analysis (MCA) is used to rank the schemes. A partial cost benefit analysis is undertaken as part of this process. It is partial as only some of the impacts can be monetised. In comparison the multi-criteria analysis gives a fuller overall picture of a scheme's worth as each impact is scored and therefore contributes to the overall score of the scheme.

The DoT's Common Appraisal Framework (CAF) and the NRA's Project Appraisal Guidelines (PAG) set out the basic requirements of the appraisal process, which the NSRNS follows. These are consistent with international best practice and have the following steps:

- (1) Setting appropriate objectives – what the programme or project is trying to achieve
- (2) Defining the need for the intervention – identifying the problem (or extent to which objectives are not currently being met)
- (3) Considering possible options;
- (4) Assessing the merits of each option and choosing between them; and
- (5) Evaluation – revisiting the appraisal once the project or programme has been implemented, to see what lessons can be learned for future appraisals<sup>17</sup>.

It can therefore be seen that the appraisal process is larger than just an assessment of scheme impacts and the generation of a prioritised list. The appraisal process therefore needs to consider the rationale and objectives of the investment programme; identify schemes that contribute towards it as well as those that do not; and sift out those schemes that are clearly uneconomical or have unacceptable environmental impacts.

Furthermore an appraisal by its nature looks forward and therefore the methodology needs to consider how the road network will perform in the future. A Do Minimum scenario therefore needs to be defined as the basis for the comparison and traffic growth forecasts need to be made. The environmental impact of a proposal can influence the appraisal process at a number of different stages, and there is therefore an interest in how the appraisal process interacts with the environmental impact assessment.

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<sup>14</sup> Department of Finance *Guidance for the Appraisal and Management of Capital Expenditure Proposals in the Public Sector*. Report dated February 2005.

<sup>15</sup> National Roads Authority *Project Appraisal Guidelines*. Report dated March 2008.

<sup>16</sup> Department of Transport *Guidelines on a Common Appraisal Framework for Transport Projects and Programmes*. Report dated May 2007.

<sup>17</sup> It should be noted that the evaluation step is not relevant to the NSRNS as the NSRNS is specifically an ex-ante study.

When choosing between options the impact of each option is assessed under the five main criteria broken down into approximately twenty sub-criteria. An overall score is achieved by scoring each sub-criterion on a scale of 1 to 7 and then combining them in a weighted average to give a score for each of the criteria. These criteria scores are then combined using a further set of weights.

4.2 APPLICATION TO THE NSRNS

The appraisal process set out in the NRA PAG and DoT CAF are perfectly appropriate for the NSRNS, however, and as with all studies, to a greater or lesser extent, a number of challenges arise in implementing the recommended methods. These are summarised below.

- How to ensure that projects that meet the strategic objectives of the NSR network are prioritised above ‘local’ projects, and how to ensure that projects that have an over-riding national need are prioritised above those that do not;
- How to balance the treatment of impacts that can be monetised and those which cannot in the prioritisation process;
- How to streamline and automate the appraisal process as far as possible (as required to assess around 400 distinct projects) whilst maintaining transparency and credibility;
- How to assess some of the sub-criteria (impacts) for which limited data will be available given the projects being appraised are at a pre-feasibility stage;
- How to derive a transparent and robust method for translating sub-criterion impacts onto a 7 point scale (that also takes account of the scale of a project); and
- How to derive reasonable weights for combining sub-criteria. Related to this is the need to ensure that projects that score very poorly against one criterion (e.g. an environmental sub-criterion) receive a much lower ranking than those that do not. Similarly there is the need to ensure that projects that score very highly against one criterion (e.g. safety) and offer good value for money are prioritised sufficiently highly.

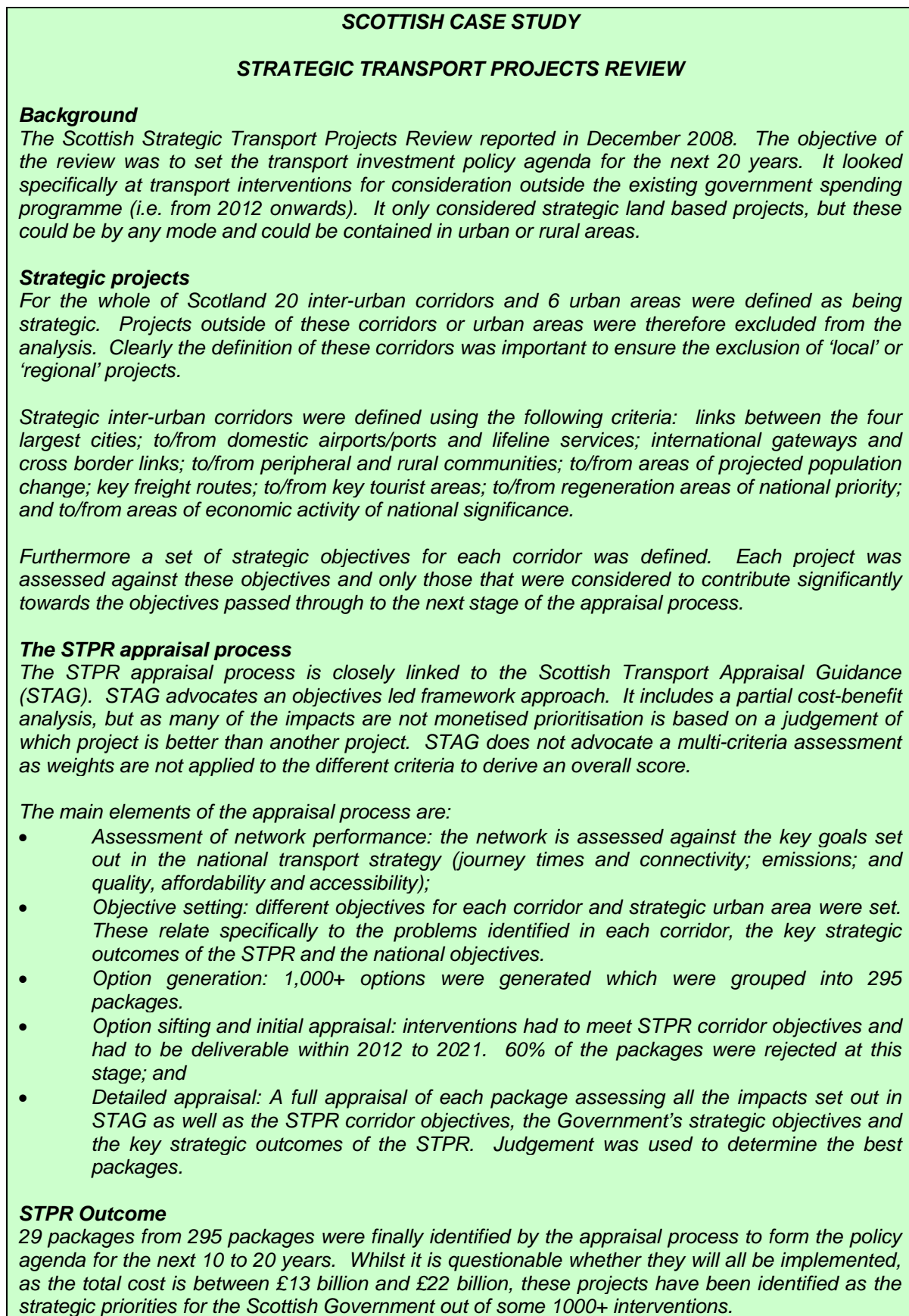
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4.3 INTERNATIONAL CASE STUDIES

Figure 4.21and Figure 4.2 illustrates two similar appraisals of the components of a national transport investment programme. The first is that relating to Scotland and the second to Germany. From the Scottish case study we can see that the use of an objectives led approach in combination with a tightly controlled option sifting process allows only ‘strategic’ projects to pass to the next stage of the appraisal process. This is of interest to the NSRNS as there is also a need to prioritise ‘strategic’ projects over ‘local’ projects.

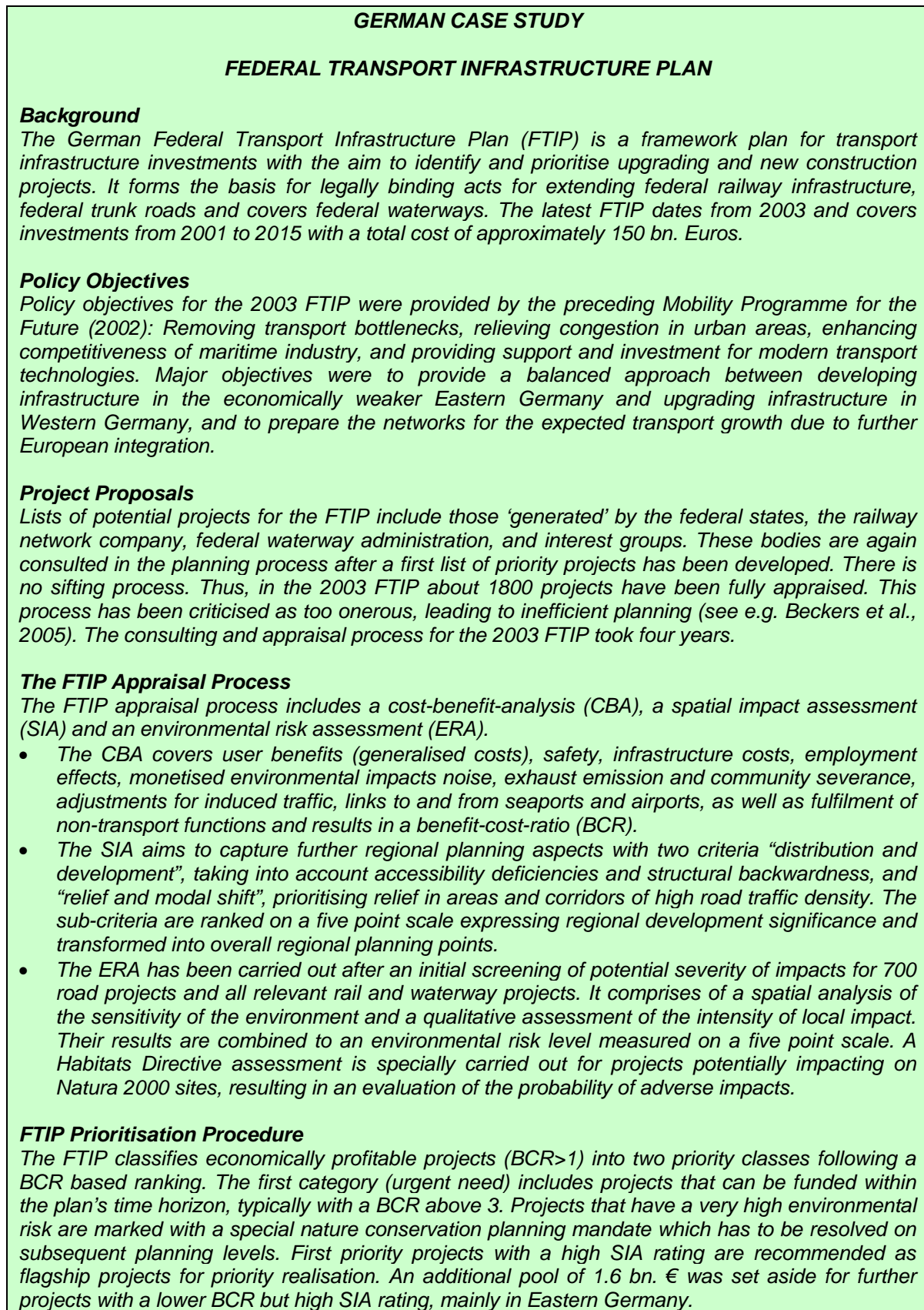
From the German case study we can see that projects that fail certain environmental thresholds or for whose impact is uncertain at the pre-feasibility stage are taken forward into the prioritisation process but are red flagged. The red flag implies that an environmental condition must be met before the project is implemented. Potentially the reverse policy could also be adopted. That is a project could be green-flagged if it offered very good value for money but only scored positively against one objective (e.g. a road safety project). Given the main outcome of the NSRNS, a list of prioritised National Secondary Road projects that does not include safety projects (which fall into the Road Safety programme), this procedure was not anticipated to be needed.

The German case study also provides an example for the integration of employment effects into a cost-benefit analysis and the integration of economic results from a cost-benefit analysis and spatial planning results in a case when strengthening the infrastructure in more deprived regions is of major policy concern, both of which are of interest in this study.

**Figure 4.1: Scottish Case Study: Strategic Transport Projects Review**

Source: JACOBS, GRANT THORNTON, FABER MAUNSELL AND TRIBAL (2008) *Strategic Transport Projects Review*. Glasgow: Transport Scotland. <http://www.transportscotland.gov.uk/stpr>



**Figure 4.2: German Case Study: Federal Transport Infrastructure Plan**

Source: FEDERAL MINISTRY OF TRANSPORT, BUILDING AND HOUSING 2003. *Federal Transport Infrastructure Plan*. <http://www.bmvbs.de/en/Transport/Programmes-2571/Federal-Transport-Infrastructu.htm>

There tools commonly used for ranking projects are as follows:

**CBA**

Cost-benefit analysis (CBA) is an appraisal method that is based on economic welfare theory. The objective is to assess the total benefits and costs of projects/policies whoever they accrue to in society and to test whether the sum of benefits exceeds the costs. Thus, it assumes that losses can be compensated for by the gains of a project. All benefits and costs are valued based empirical evidence of individuals’ preferences and need to be transformed into monetary units which express a welfare measure. Explicit procedures have been developed for valuing costs for many non-market impacts and for dealing with impacts in the future.

**MCA**

In contrast to CBA, multi-criteria analysis (MCA) does not transform all impacts into a common value which is considered to express public welfare. Instead, the aim is to rank different alternatives according to decision makers’ or stakeholders’ preferences. The first step is therefore to establish a set of decision criteria and corresponding indicators. Many MCA methodologies allow the use of qualitative criteria, e.g. descriptions such as ‘high impact’. In the next step, the extent to which project alternatives contributes to these objective(s) is measured. A valuation step is usually applied to transform the impacts from their original units into numerical scores on a preference scale. Finally, weight measures can be applied to the impact scores in order to aggregate them into an overall value and produce a ranking. These weights express the relative value for each impact. Generally there are different techniques available for both the valuing and the weighting steps.

**CEA**

Cost-effectiveness analysis (CEA) measures at which costs certain benefits of a project can be achieved. Thus, it requires the normalisation of different types of benefits as in MCA but avoids the monetisation of non-market goods as necessary for CBA. It can only be applied for a comparative analysis of projects but not for an absolute assessment of their worthiness.

**4.4 METHODS OF MULTI-CRITERIA ANALYSIS (MCA)**

The NRA PAG and the DoT CAF do not stipulate the type of MCA method that should be adopted. Some common methods are set out in Figure 4.3. Aside from the reliability of the weighted summation approach the Department of the Environment, Transport and the Regions UK (DETR) Manual on Multi-Criteria Analysis (DETR, 2000) points out advantages of the weighted summation (or linear additive) approach include its robustness, effectiveness and lower complexity compared to other approaches. These reasons, and because the NRA already has familiarity with the successful application of this approach, lead us to choose this method.

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Figure 4.3: Overview of common methods for MCA

<p><b>“Weighted summation:</b> <i>Perhaps the most commonly applied MCA method; weighted summation involves transforming performance measures into commensurate units, multiplying by criteria weights, then summing to attain an overall performance score for each project. Janssen (2001) argues that although computationally simple, weighted summation will often provide a reliable solution.</i></p> <p><b>Lexicographic ordering:</b> <i>This involves ranking projects against the most important criterion. If a complete ranking is attained then that is the result. Otherwise the projects with tied rank positions are ranked against the second most important criterion and so on until a complete ordering is established, or all criteria are exhausted. This approach is described by Hutchinson and Gigerenzer (2005) who refer to it as the Take the Best (TTB) method.</i></p> <p><b>ELECTRE (concordance–discordance analysis):</b> <i>This approach was developed by Roy (1968) and is applied in environmental management problems (Gershon and Duckstein, 1983; Ozelkan and Duckstein, 1996). An adaptation was made in this study based on Nijkamp et al. (1990) to avoid the need for decision makers to specify a concordance or discordance threshold. These are important parameters for ELECTRE but are difficult to explain to decision makers. Concordance and discordance analysis lies at the heart of ELECTRE and involves comparing every pair of projects to compute an overall performance score.</i></p> <p><b>Evamix:</b> <i>Developed by Voogd (1982, 1983) this approach separates cardinal and ordinal data in the performance matrix, applying algorithms suited to each level of measurement. Evamix makes paired comparisons for the projects and combines the ordinal and cardinal scores to attain an overall performance score. “</i></p>
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Source: HAJKOWICZ, S., 2007. A comparison of multiple criteria analysis and unaided approaches to environmental decision making. *Environmental Science & Policy* 10 pp 117-184.

4.5 METHODOLOGY

Having reviewed a number of alternative approaches, a methodology was selected for the NSRNS which addresses these challenges within the framework of the NRA PAG and the DoT CAF. The process can be described as an objectives-led multi-criteria assessment (MCA).

National policy is used to determine the objectives of upgrading the NSR network. These objectives are used to assess the ‘baseline’ performance of the NSR. Where the NSR does not perform satisfactorily against these objectives, then that defines a problem. Possible solutions are generated which form the options to be appraised. A sifting stage follows to ensure that the projects that pass through to later stages of the appraisal meet the strategic objectives of the NSR, do not just serve local needs and meet minimum environmental and economic criteria. Projects which fail environmental criteria at the sifting stage are ‘red-flagged’ to indicate that they should not proceed to implementation unless the issue is resolved (which may be an issue of mitigation measures or of detailed design).

Each impact is scored on a numeric scale from 1(worst) to 7 (best), in a way that is as consistent as possible over different criteria. The weights that are used to combine the scores for the different sub-criteria are based on monetary values as far as possible and other evidence where no monetised values are available. A weighted MCA framework is used to combine all the different impacts into a single ‘score’. Sensitivity testing will be undertaken to understand how robust the prioritisation is to some of the key assumptions of the appraisal process.

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## 4.6 THE NEED FOR AND OBJECTIVES OF AN INTERVENTION

Section 3 discusses the role of the NSR in terms of national economic policy, social policy and transport policy. From this it can be seen that the network performs three broad functions:

- Economic – supporting economic growth;
- Social – providing accessibility for all; and
- Strategic – providing for inter-county traffic.

**Table 4.1: Function of the National Secondary Network and Criteria for Inclusion of Roads in the Network**

Criteria encompassing the function of the national secondary network	Indicators					Introduction
	Volume of traffic with both trip ends in a Gateway/ Hub	Volume of traffic with one trip end in a zone containing a port or airport	Volume or proportion of business traffic	Volume or proportion of HGV traffic	Proportion within different threshold distances from a national route	
<b>National economic interest</b>						Baseline
Support NSS gateways and hubs	<b>X</b>					Objectives
Access to nationally-significant ports and airports		<b>X</b>				<b>Methodology</b>
High proportion of economically high-value traffic			<b>X</b>	<b>X</b>		Option Identification
<b>National social interest</b>						Costing
Binding the nation together					<b>X</b>	Option Appraisal
Balanced regional development	<b>X</b>				<b>X</b>	Recommendations
<b>Strategic function</b>						Cycling & walking
Inter-county traffic	<b>X</b>	<b>X</b>				

These functions and criteria that relate to them (see Table 4.1) form the basis of deciding whether new routes should be included in the NSR network and whether some routes should be excluded. It is anticipated that only marginal changes in the NSR network will be proposed.

Given the criteria for appraisal, any investment in the national secondary road network needs to minimise or reduce the impact on the environment whilst promoting safety, the economy, accessibility and social inclusion as well as integration. In the context of a national secondary road network which serves a strategic function and supports economic growth through the

Gateway cities and Hubs whilst facilitating access to key international gateways the main determinant of economic, accessibility and social inclusion and integration benefits is the direct cost of transport. The link between the direct costs of transport and the economy is quite clear, but it is also (in the context of the NSR network) a good indicator for accessibility and social inclusion as by reducing the direct costs of transport access to and between Gateway cities and Hubs accessibility and integration improves. This is because the National Spatial Strategy envisages a centralisation of services in Gateway cities and Hubs. Improved access to the Gateways and Hubs, through lower direct costs of transport, is therefore important to promote accessibility, social inclusion and integration objectives.

The objectives of investment in the national secondary road network can be summarised as:

- To reduce the direct costs of transport;
- To reduce accident numbers and the proportion of fatal and serious injuries; and
- To minimise impact on the environment.

It should be noted that the direct costs of transport encompass time costs and quality of journey costs as well as the out of pocket costs associated with fuel and vehicle maintenance and depreciation. Table 4.2 maps the three objectives of improving the NSR network onto the five appraisal criteria.

**Table 4.2: The Appraisal Criteria and the Objectives of Improving the NSR Network**

Appraisal criteria	To reduce the direct costs of transport	To reduce accident numbers and the proportion of fatal and serious injuries	To minimise impact on the environment
Environment			X
Safety		X	
Economy	X		
Accessibility and social inclusion	X		
Integration	X		

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The need for a transport intervention is assessed for each of the existing NSR routes. Given the length of some of the routes, each route has been broken down into a number of corridors. In total the 34 National Secondary Roads are analysed in terms of 112 corridors. This process is described in more detail in the Baseline Report<sup>18</sup> and is summarised in Chapter 2 of this report. Problems identified in the Baseline Report are used to develop a set of objectives at the corridor/route level. These specific objectives provide the link between the ultimate objectives of policy (as set out for example in the National Spatial Strategy or the National Development Plan) and the route options that will be generated, appraised and prioritised.

## 4.7 SCENARIO DEFINITION

An appraisal compares a design option, a Do Something, with a benchmark case. The benchmark case is not the existing network but the existing network plus any committed transport projects and is usually referred to as the Do Minimum. Included in the Do Minimum is a programme of maintenance and renewal works necessary to maintain the life of the asset

<sup>18</sup> National Secondary Road Needs Study Interim Baseline Assessment Summary, November 2009

over the appraisal period. The Do Something also includes a maintenance and renewal programme. The scenarios used in the NSRNS are:

- **Do Minimum:** is defined as the existing network (2009) plus all schemes under construction or where there is a firm commitment to provide improvements. Initial assessment of schemes is against a Do-Minimum case.
- **Future Vision:** it is also appropriate to assess schemes against a scenario in which the national primary network is completed as currently envisaged by NRA, i.e. a future in which all projects currently being actively progressed are assumed to be in place. Such projects, by either complementing or competing with the NSR proposals, will have an impact on the appraisal of the Do Something options. This assessment will be carried out as a sensitivity test on the complete set of schemes emerging from the initial assessment.
- **Do Something:** this is the option being appraised.

4.8 ASSESSMENT OF IMPACTS

The impacts of each of the options that pass the sifting process need to be appraised against five criteria (environment, safety, economy, accessibility and integration) and their associated sub-criteria. This section summarises that process with a set of tables, each one relating to a different criteria, describing the method used to assess each impact. As there are a large number of options to be assessed the methods applied are automated as far as possible and are appropriate to a strategic study rather than considering detailed localised impacts.

4.8.1 Environment

There are eight sub-criteria in the environmental criterion. These are:

- Air quality and climate. This reflects local air pollution with corresponding negative impacts on health and environment and the contribution of road transport to climate change. It requires the quantification of emissions and, in the case of local pollution, of household exposure. A monetary value is assigned to the impact.
- Noise and vibration. The focus here is on noise exposure and requires the quantification of households situated in noise bands along corridors. The change in noise annoyance is assessed in monetary terms.
- Landscape and visual quality. Visual sensitivity is a combination of the sensitivity of the human receptor and the quality of view experienced by the viewer. Local authorities designate areas with scenic value; however, a national database does not exist. Therefore, landscape is not included, i.e. scoring it neutral for all projects.
- Biodiversity. This aims at the protection of designated conservation areas that contain habitats or species of national or international conservation importance. A non-monetised approach is used, calculating the number of areas impacted through a GIS overlay with the transport network and assessing the impact significance according to type of area affected as well as extent and duration of impacts.
- Cultural heritage/ Archaeology. A non-monetised approach as for the biodiversity assessment is applied to identify potential conflicts with registered sites designated for the conservation of archaeology, architecture and cultural heritage features.
- Land use. This measures the loss of land by land use categories from the CORINE land cover database providing an indication of whether economic, recreational, natural or built environment are the main receptors of changes in land use
- Soils and geology. This is not assessed due to localised impacts and lack of a national database.

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- Water resources. The focus of the assessment is on pressures and impacts on water bodies. The assessment approach follows the methodology used for the assessment of biodiversity.

The methods used to assess the impacts under each sub-criterion are summarised in Table 4.3.

**Table 4.3: Method for Assessing Environment Impacts**

Sub-criteria	Measurement of impacts
Air quality and climate	Volume of emissions and household exposure (by proximity to scheme) in 2025. Carbon outputs are presented separately from other forms of air pollution. Monetised measure $PV_{air}$ and $PV_{climate}$
Noise and vibration	Change in number of households experiencing change in noise volumes in 2025 Monetised measure $PV_{noise}$
Landscape and visual quality	Not assessed due to data limitations
Biodiversity	Number of protected areas potentially impacted Number of Natura 2000 sites potentially impacted Number of protected areas under the WFD potentially impacted
Cultural heritage/ Archaeology	Number of national monuments potentially impacted upon Number of protected structures/listed buildings potentially impacted upon UNESCO World Heritage area potentially impacted upon
Land use	% area loss of each land cover class
Soils and geology	Not assessed due to data limitations
Water resources	Number of rivers directly impacted

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#### 4.8.2 Safety

The NRA Project Appraisal Guidelines identifies that safety impacts comprise the impact on road accidents and road user security and has the following two sub-criteria.

- Accident Reduction Impact. This requires a quantification of the changes in accident numbers;
- Security. This refers to the personal security of road users and comprises a non-monetised qualitative assessment. The example quoted in the NRA PAG for the most likely occasion in which this impact would be assessed is where pedestrian facilities such as underground passes are put in place

The DoT CAF identifies accident reduction only.

The methods used to assess the impacts under each sub-criterion are summarised in Table 4.4.

**Table 4.4: Method for Assessing Safety Impacts**

Sub-criteria	Description
Accident reduction	An accident model based on the last 5 years of observed accident data for the period 2003 – 2007 has been developed. This model derives a relationship between the quality of a road and the accident rate and economic cost. This model is applied to forecasts of 2025 traffic flows to give an estimate of the change in accident numbers for each accident severity category. The 2025 economic cost is scaled up to a cost over the evaluation period to give a $PV_{\text{safety}}$
Security	This impact is expected to be neutral in all instances. Primarily this is because the study is considering rural roads where levels of pedestrian traffic are low.

### 4.8.3 Economy

There are three sub-criteria under the economy criterion. These are:

- Transport efficiency and effectiveness – this includes impacts to users, transport providers and impacts on the Exchequer
- Other economic impacts – these include impacts on competition, agglomeration, inward investment, improved labour supply and urban regeneration; and
- Funding – whether external funding sources are available

The funding sub-criteria does not appear in the DoT CAF.

The methods used to assess the impacts under each criterion are summarised in Table 4.5.

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**Table 4.5: Method for Assessing Economy Impacts**

Sub-criteria	Description	
Transport efficiency and effectiveness	<p><i>Private vehicle transport user impacts:</i> the outputs from the traffic model for future year 2025 are used to calculate changes in travel time along the corridor. The outputs are also used to calculate the economic costs of travel time and vehicle operating cost changes. The economic cost changes from 2025 are scaled up to values for the full evaluation period to give a <math>PV_{\text{transport efficiency and effectiveness}}</math>. These calculations are made in the absence of induced traffic. Changes in journey quality and reliability are not estimated as the methods available are not commensurate with a strategic study of this nature. Similarly delays during construction are not estimated.</p> <p><i>Public transport users and providers:</i> these impacts are not estimated. In part this is due to a lack of data, but it also relates to the view that in the main impacts on bus and train users and providers will be small.</p> <p><i>Exchequer impacts:</i> Capital costs and changes in maintenance costs are estimated using the cost models set out in Chapter 6 of this report. Changes in indirect tax revenues are calculated when relevant.</p>	<p>Introduction</p> <p>Baseline</p> <p>Objectives</p> <p><b>Methodology</b></p> <p>Option Identification</p> <p>Costing</p> <p>Option Appraisal</p> <p>Recommendations</p> <p>Cycling &amp; walking</p>
Wider economic impacts	The assessment of these impacts can be complex and resource intensive, particularly for a study of this nature. In some instances there are no methods available for assessing the impact. As a consequence only two impacts are assessed. These are imperfect competition and labour supply impacts during construction. The value of additional output in imperfectly competitive markets is taken to be a function of the business and freight time and cost savings. Labour supply impacts during construction are assessed using a shadow wage and construction employment impacts at a programme level only.	
Funding	No external sources of funding are expected to be available. There is no impact under this sub-criterion, and it is always scored neutral.	

#### 4.8.4 Accessibility and Social Inclusion

There are two sub-criteria under the accessibility and social inclusion criterion. These are:

- Vulnerable groups – this relates particularly to low income groups, those with disabilities, and those who do not have access to a car; and
- Deprived geographic areas –this relates to impacts on CLAR and RAPID populations.

The methods used to assess the impacts under each criterion are summarised in Table 4.6.

**Table 4.6: Method for Assessing Accessibility and Social Inclusion Impacts**

Sub-criteria	Description
Vulnerable groups	The impact on this sub-criterion is not assessed. The impact is therefore taken to be zero (i.e. neutral). In part this is because the proposals are expected to have only small impacts on vulnerable groups (low incomes and no access to car) and in part because the data required for assessment of impacts is not commensurate with a strategic study.
Deprived geographic areas	An accessibility score is developed based on change in accessibility for CLAR designated populations accessing their nearest Gateway or Hub settlement (where jobs, schools and health services are likely to be centered) in 2025. For each affected zone, the reduction in journey time is weighted by the CLAR population and by the Do-Minimum travel time, so that benefits for peripheral areas that are further away from a Gateway or Hub receive a higher score.

#### 4.8.5 Integration

There are four sub-criteria to the integration criterion. These are:

- Transport Integration – this concerns the promotion of the integration of transport infrastructure and services through the development of missing transport links opportunities for interchange;
- Land Use Integration – this concerns the integration of the scheme with land use strategies and objective as set out in regional and local land use plans;
- Geographical Integration – this focuses on improved links to Northern Ireland and the rest of Europe via ports and airports;
- Other Government Policy Integration – this relates to consistency with national policies, particularly for balanced regional development

In developing a set of indicators for each sub-criterion it becomes clear that there can be overlap between the different sub-criteria. This is most acute with the treatment of national policy documents such as the NDP and NSS which relate to land use integration and other government policy integration. There is therefore a degree of arbitrariness regarding the labelling of the different indicators, but the set of indicators as a whole is considered to reflect the most important dimensions of integration with government policy. The methods used to assess the impacts under each sub-criterion are summarised in Table 4.7.

**Table 4.7: Method for Assessing Integration Impacts**

Sub-criterion	Description
<b>Transport Integration</b>	Improvements to NSR corridors with a scheduled bus service are scored more highly, to reflect improvements with cross-modal benefit. Improvement schemes which improve a junction between the NSR being upgraded and another National Route are also scored more highly, to reflect enhanced “network effects”. The indicator variable for Transport Integration can therefore take values {0, 1 or 2} according to whether the scheme is “marked up” on one or both of these aspects.

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Sub-criterion	Description
<b>Land Use Integration</b>	<p>In a similar way, the indicator variable for Land Use Integration can take values { 0, 1, 2, 3, 4, 5 } according to whether:</p> <ul style="list-style-type: none"> <li>the route is identified for improvement in the NSS</li> <li>the route is identified for improvement in Transport 21</li> <li>the route is identified for improvement in the National Development Plan</li> <li>the route or corridor is identified for improvement in the relevant Regional Planning Guidelines</li> <li>the corridor or scheme is identified for improvement in the relevant County Development Plan</li> </ul> <p>A corridor which is designated for improvement in three of these policy documents would get a score of three, and so forth.</p>
<b>Geographic Integration</b>	<p>We considered two aspects of Geographic Integration – cross-Border accessibility and access to ports and airports. In each case, we undertook a single one-off analysis of the future year Do-Minimum traffic model, to count the number of zone pairs served by each NSR corridor:</p> <ul style="list-style-type: none"> <li>One count of zone pairs with one zone in the North and one zone in the Republic, weighted by the inverse of distance to allow for the fact that the likelihood of cross-Border commerce diminishes with distance.</li> <li>One count of zone pairs where one zone contains a major port or airport.</li> </ul> <p>These two indicator variables were factored to a 4-to-7 scale (where a corridor that serves no relevant zone pairs scored 4.0, and the NSR corridor that served the highest number of relevant zone pairs scored 7.0, with most corridors achieving a value in between).</p>
<b>Other Government Policy Integration</b>	<p>The major way in which road improvements support a policy of balanced regional development is by improving accessibility to and between non-Dublin Gateways. We therefore undertook two more one-off analyses, counting the number of zone pairs served by each NSR corridor:</p> <ul style="list-style-type: none"> <li>One count of zone pairs where one zone is a non-Dublin Gateway</li> <li>One count of zone pairs where both zones contain a non-Dublin Gateway town or city.</li> </ul> <p>These two indicator variables were factored to a 4-to-7 scale in a similar way, and each scheme was given the average of the two resulting scores (to-Gateway and between-Gateway) for the relevant NSR corridor.</p>

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## 4.9 SCORING

### 4.9.1 Background

A weighted summation Multiple Criteria Analysis (MCA) is employed in the National Secondary Roads Needs Study (NSRNS). The first of two critical steps in applying a weighted MCA is to derive a set of scores for each impact. The second step is to apply a set of weights. This section is concerned with the first step – that of scoring each impact. In the case of the NSRNS the scores need to lie between 1 and 7 (see Table 4.8).

**Table 4.8: Scale Definitions**

Score	Description
1.0	Highly negative
2.0	Moderately negative
3.0	Slightly negative
4.0	Neutral
5.0	Slightly positive
6.0	Moderately positive
7.0	Highly positive

The scoring system needs to be

- Transparent;
- Consistent between schemes;
- Consistent between sub-criteria;
- Scored objectively (to aide transparency and consistency and comparisons between schemes);
- Reflect the size of a scheme. To ensure that small schemes that deliver value for money as good as big schemes are scored equally to big schemes; and
- Allow for the inclusion of capital costs and the derivation of value for money indicators.

It was further felt by the study team that the scoring system should be:

- Absolute rather than use a value for money metric. That is if a scheme delivers accident savings then it is given a score in excess of 4.0 (neutral), even if the accident savings are small in relation of the size of the scheme (i.e. poor value for money).
- Symmetrical. That is 1 accident saved is scored equal in absolute terms but opposite in sign to an increase in accidents of 1.
- Linear: That is if the impact doubles then the score (above the neutral benchmark doubles). That is if a saving of 1 accident a year gives a score of 5.0 (i.e. 1.0 above the neutral benchmark), then saving 2 accidents a year would give a score of 6.0.

These latter three preferences reflect the view that the scoring method should be as transparent and understandable as possible.

#### 4.9.2 Monetised Impacts

For the five sub-criteria that can be monetised (air, noise, economy sub-criteria and accident reduction) a scoring system that meets the requirements set out above can be derived based on contribution to what would be regarded as a highly positive benefit cost ratio, that is a BCR in excess of 2.5.

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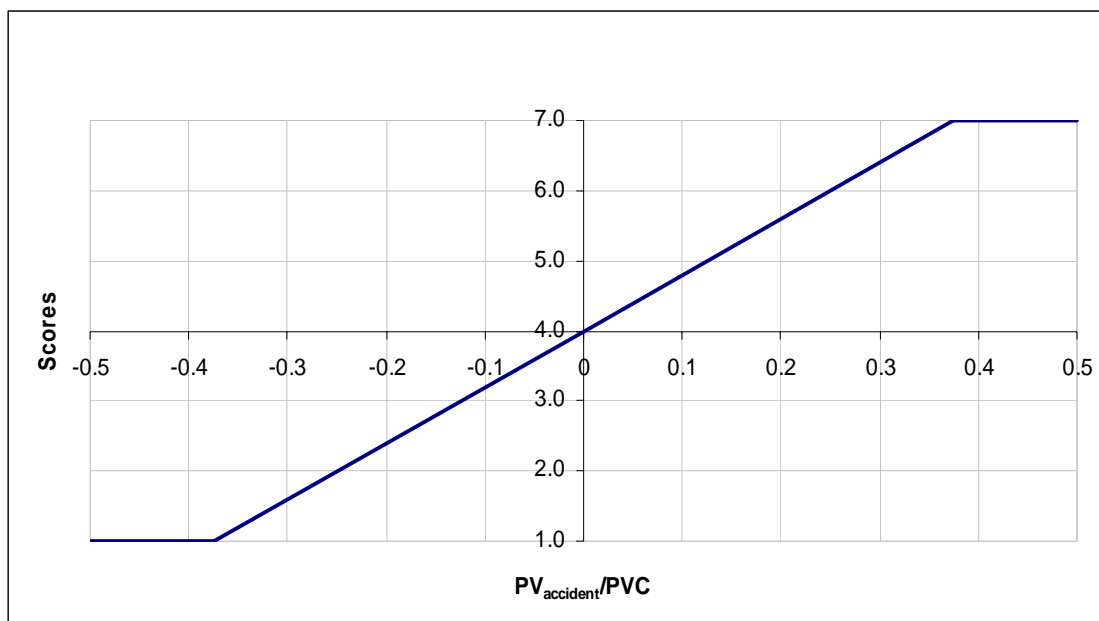
For each of the impacts the ratio of the present value of the impact ( $PV_{\text{impact}}/PVC$ ) has to be calculated. This ratio has to be calculated to ensure that size of the project will not bias any comparisons. A threshold value defining when each  $PV_{\text{impact}}/PVC$  ratio is considered to be highly positive can then be defined based on an average contribution of the  $PV_{\text{impact}}/PVC$  ratio to the BCR. The threshold values used are set out in Table 4.9. These values are then used to define scoring functions by sub-criteria – for example as in Figure 4.4 for accidents.

**Table 4.9: Calculation of ‘highly positive’ thresholds for monetised impacts**

Sub-criteria	Average contribution of each impact to PVB	$PV_{\text{impact}}/PVC$ regarded as Highly Positive (score = 7)
Air and climate	5%	0.13
Noise	5%	0.13
Transport efficiency and effectiveness	70%	1.75
Wider economic impacts	5%	0.13
Accident reduction	15%	0.38
	100%	

Note: Treats a BCR of 2.5 as highly positive

**Figure 4.4: Scoring Function for Accident Reduction**



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### 4.9.3 Environment

In contrast to the economic indicators, most environmental impacts are difficult or even impossible to express in monetary terms. In accordance with the general methodology, our aim is to monetise as many impacts as possible in order to achieve a consistent evaluation throughout impacts. For the monetised impacts, the results can be used as a basis for the scoring in the MCA. For non-monetised impacts, the classes of the 7 point scale had to be

developed in a way that reflects the value functions in accordance with the BCR based ratings. Our general approach is to score according to the following scale:

**Table 4.10: Scoring Framework for Environmental Impacts**

Score	Description
1	High risk of detrimental, potentially irreversible environmental damage, can only be mitigated or compensated at high cost during project realisation
2	Intermediate risk of environmental damage, requires average effort for mitigation / compensation at project level
3	Some risk of environmental damage, can be offset or mitigated at project level at moderate costs
4	Neutral or very small environmental gain or risk of damage
5	Some potential of environmental gains
6	Intermediate potential of environmental gains, reducing impacts to considerably below national average levels
7	High probability of positive environmental effects, reducing impacts almost completely to below environmental standards

As can be seen from Table 4.10, the basic assumption in the scoring is that environmental damages can be mitigated or compensated for at project level, though potentially at high costs. However, this might not always be the case, in particular if there is a high risk of conflicts with environmental legislation, in particular nature and heritage conservation. In this case, a realisation of the project is highly unlikely or would come at unreasonable costs; therefore these projects will be “red-flagged”, i.e. option only to proceed conditional on stated environmental issues being resolved. Similarly, if a project has the potential to remove an existing conflict of this type (e.g. removing a conflict with a protected habitat), it could be “green-flagged”.

#### 4.9.4 Air Quality and Climate

The scoring of air quality and climate is based in monetised values. The scoring function is described earlier in this chapter (see Section 4.9.2).

#### 4.9.5 Noise and Vibration

The scoring of noise and vibration is based in monetised values. The scoring function is described earlier in this chapter (see Section 4.9.2).

#### 4.9.6 Biodiversity and water resources

Monetary values are not assigned to the biodiversity and water resource elements in the assessment; however, these impacts are based on a risk assessment. Risk levels will be based on an evaluation of degree of legislative protection (SAC under EU legislation, NHA under National legislation), previous experience with similar designated areas and likely cost of mitigation (high, medium, and low). The scoring system used is consistent with the criteria for assessing ecological impact significance presented in the *NRA Guidelines for Assessment of Ecological Impacts*, 2006 (Table 4.11).

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**Table 4.11: Criteria for Assessing Impact Significance**

Impact	Internationally Important	Nationally Important	High Value Locally Important	Moderate Value Locally Important	Low Value, Locally Important
<b>Severe Negative = Red Flag</b>	Any permanent impacts	Permanent impacts on a large part of a site			
<b>Major Negative = 1</b>	Temporary impacts on a large part of a site	Permanent impacts on a small part of a site	Permanent impacts on a large part of a site		
<b>Moderate Negative = 2</b>	Temporary impact on a small part of a site	Temporary impact on a large part of a site	Permanent impacts on a small part of a site	Permanent impact on a large part of a site	
<b>Minor Negative = 3</b>		Temporary impacts on a small part of a site	Temporary impacts on a large part of a site	Permanent impact on a small part of a site	Permanent impact on a large part of a site
<b>Neutral = 4</b>	No impacts	No impacts	No impacts	No impacts	Permanent impact on a large part of a site
<b>Minor Positive = 5</b>				Permanent beneficial impacts on a small part of a site	Permanent beneficial impacts on a large part of a site
<b>Moderate Positive = 6</b>			Permanent beneficial impacts on a small part of a site	Permanent beneficial impacts on a large part of a site	
<b>Major Positive = 7</b>		Permanent beneficial impacts on a small part of the site	Permanent beneficial impacts on a large part of a site		

Source: NRA Guidelines on the Assessment of Ecological Impacts of National Road Schemes, 2006.

If there is an extremely high risk of conflicts with environmental legislation that would make the realisation of the project highly unlikely or would come at unreasonable costs, such a project will be “red-flagged”, i.e. the decision to proceed will be conditional on environmental issues being resolved. This would equate to severe negative in Table 4.11. Where a route potentially impacts directly or indirectly on an SPA or SAC it will automatically be red-flagged to highlight the high risk. However, it is recognised that the presence of an SAC / SPA does not automatically result in unacceptable conflict and in some cases conflicts may be avoided or mitigated through design at project level. This is particularly the case where protected areas relate to rivers which can be crossed using a number of solutions including clear spanning. In these cases, a red flag has been assigned but the impact significance reflects available options even at a strategic level. For non-riverine SACs the significance is more difficult to determine at this strategic level. In those cases, the red flag is used but further information on alignment would be needed before any reduction in impact significance could be determined. Therefore for non-riverine SACs, an impact significance of 1 has been used. For SPAs, given the mobile nature of the designated features, all direct and indirect impacts have been categorised as Red Flag with an impact significance of 1 for direct or 2 for indirect impacts.

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A summary of the scores used in conjunction with red flags is presented in Table 4.12.

**Table 4.12: Scores Attributed to Red Flagged Impacts**

Environment type	Direct or Indirect Impact	Impact significance
River based SAC	Direct Impact	2.5
	Indirect impact	3.0
	Indirect Impact to water dependant SAC e.g. bog	2.5
All other SACs (non-water dependant) e.g. woodland	Direct Impact	1.0
	Indirect Impact	3.0
SPA	Direct impact	1.0
	Indirect impact	2.0

#### 4.9.7 Cultural Heritage

The scoring system follows the same principle as the one for biodiversity and water resources. It is consistent with the NRA Guidelines for the *Assessment of Archaeological Heritage Impacts of National Roads* and *Guidelines for the Assessment of Architectural Heritage Impacts of National Roads*. Hence, monetary values are not assigned to cultural heritage elements in the assessment. Instead, the impact ranges are translated into risk levels and corresponding scores. As for biodiversity, projects where impacts on cultural heritage cannot be mitigated and are in direct contradiction with protection laws will be red-flagged.

#### 4.9.8 Land use

CORINE provides information on land cover rather than specific land uses, therefore monetary valuation is not possible. A qualitative scoring has been used for land use which takes account of the main type of land uses impacted along a given scheme.

#### 4.9.9 Landscape

This sub-criterion is not assessed and is therefore scored neutral (4.0).

#### 4.9.10 Safety

##### Accident reduction

The scoring of accident reduction is based in monetised values. The scoring function is described earlier in this chapter (see Section 4.9.2).

##### Security

This sub-criterion is not assessed and is therefore scored neutral (4.0).

#### 4.9.11 Economy

##### Transport efficiency and effectiveness

The scoring of transport efficiency and effectiveness is based in monetised values. The scoring function is described earlier in this chapter (see Section 4.9.2).

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Wider economic impacts

The scoring of wider economic impacts is based in monetised values. The scoring function is described earlier in this chapter (see Section 4.9.2).

Funding

This impact is therefore always scored as neutral (i.e. score = 4). It is noted that this sub-criterion does not appear in the CAF. It is therefore allocated a zero weight within the weighting process, to avoid the other economic criteria being diluted thereby.

4.9.12 Accessibility and social inclusion

Vulnerable groups

This is not assessed as part of Do Something 1 and is therefore always scored as neutral (4.0).

Deprived geographic areas

The accessibility measure derived is divided by the PVC of the scheme (to prevent bias in favour of large schemes) to give a normalised accessibility score. A normalised accessibility score of 10 is treated as the maximum impact and scored with 7.0 points. A score of 0 is scored as neutral. A linear interpolation between these two points gives intermediate scores.

4.9.13 Integration

Under each of the integration sub-criteria a series of questions is asked. Weightings are then used to combine these to a score for the sub-criteria. For the dichotomous choice questions (yes/no) a score of 7.0 is given if the answer is yes and a score of 4.0 is given if the answer is no. For the integration questions that involve some model analysis the score for that question is output as part of the analysis.

4.10 PRIORITISATION

Prioritisation of mutually exclusive projects (i.e. different options for one route) and between route corridors is undertaken on the basis of the highest project score. The project score is derived by deriving a weighted average of the different sub-criteria scores as follows:

- The scores for each sub-criterion are combined into a weighted average for that criterion using the weightings in Table 4.13. These weightings are based on a view of the likely importance of each impact in decision-makers eyes. In some instances monetary values are used as a proxy for decision-makers preferences.
- The criteria scores are then combined into a project score using another weighted averaging process. These are also detailed in Table 4.13.

When all routes have been appraised prioritisation of the route corridors is based on the highest scoring option appraised for a route corridor in the first instance. However, an incremental assessment is also undertaken to see if there is value to upgrading the route to a higher standard (e.g. Type 2 or Type 1 or offline) for a corridor from a lower standard (e.g. online Type 3).

It should be noted that a project whose average score is 4.0 has an overall impact of zero despite the expenditure of capital on construction and maintenance. This clearly represents poor value for money. With a weighted MCA it is not possible to identify a definitive threshold above which value for money is achieved. It is however estimated that an overall score in excess of 5.2 is needed to achieve value for money.

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**Table 4.13: Criteria and Sub-criteria Weightings**

Criteria	Criteria weighting	Sub-criteria	Sub-criteria weighting
Environment	10%	Local Air quality	10%
		Climate change	15%
		Noise and vibration	10%
		Landscape and visual quality	0%*
		Biodiversity + Water resources	30%
		Cultural heritage/ Archaeology	30%
		Land use	5%
		Soils and geology	0%*
Safety	10%	Accident reduction impact	90%
		Security	10%*
Economy	35%	Transport efficiency and effectiveness	90%
		Other-economic impacts	10%
		Funding	0%*
Accessibility and social inclusion	10%	Vulnerable groups	50%
		Deprived geographic areas	50%
Integration	35%	Transport integration	10%
		Land use integration	70%
		Geographical integration	10%
		Other government policy integration	10%

\* Not included

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**Integration sub-sub-criteria weights**

<b>Sub-criteria</b>	<b>Measure</b>	<b>Weight</b>
Transport	Bus Eireann service?	33.3%
	Joins with other NR?	33.3%
	National Cycle Strategy	33.3%
Landuse	Trans21	60%
	NDP	10%
	NSS	10%
	RPG	10%
	County Plan	10%
Geographical	X-Border	50%
	Ports	50%
Other Government Policy	to/from Gateways	50%
	to/from Gateways	50%

The outcome of this prioritisation step will be a ranked set of proposed schemes that can be taken forward for further analysis through the NRA's standard Project Appraisal procedures.

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# 5 OPTION IDENTIFICATION

## 5.1 INTRODUCTION

The inputs to the option generation and identification process are the corridor objectives and consequently the options identified in the baseline assessment as a result of the problem identification assessment described in Chapter 2. The output of the option generation and option sifting stage is a set of options for each route corridor. These options will be subjected to an appraisal commensurate with the pre-feasibility stage of a project.

There is a strong interaction between the option generation and option sifting stage. As this study is carried out in close co-operation with the NRA, a targeted, efficient option generation process reflecting their objectives has been adopted, considering from the start only options that are likely to impact on the corridor specific objectives.

The main focus of the option sifting process is therefore to identify:

- Options which are clearly likely to offer very poor value for money (such as improving the road to a Type 1 standard where the traffic levels are clearly more appropriate for Type 3 or recommending a Type 2 upgrade where the existing road condition is clearly very close to this standard already).
- Options which upon review are likely to be excessively costly or difficult to construct (such as at a town where a relief road is proposed, sometimes an intricate route through the town requiring the acquisition of dwellings or local amenities such as football pitches or golf courses was sifted out in favour of an alternative wider route around the town).
- Options which do not provide continuity of standard along the route (such as recommending a Type 3 upgrade for a section that occurs between two sections where the existing is already to Type 1 or Type 2 standard). It is important consistency of design standard be borne in mind from a road safety perspective.
- Options which unequivocally transgress environmental thresholds and for which no mitigation options exist – that is would receive a severe negative rating (i.e. a score of 1.0) under the environmental impact sub-criteria. Where possible such options were sifted out in favour of alternative options.

The output of the option generation and option sifting stage is a set of options for each route corridor. These options will be subjected to a detailed appraisal commensurate with the pre-feasibility stage of the project. Following the option generation and sifting process 405 options were developed for appraisal.

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## 5.2 OPTION GENERATION

### Outline Principle

A staged process starting with a minimum standard of provision and building up to higher standards was adopted. This is consistent with the NRA's objective of maximising the amount of the NSR network that can be upgraded within a fixed budget. An example of such a staged process for a route corridor, that has a corridor specific objective to increase average journey speeds to greater than 80% of speed limit, would be:

- Minimum standard provision (online) – upgrade rural sections of the route to Type 3 geometric standard in approximately 10 km sections;
- Medium standard provision (online) – upgrade rural sections of the route to Type 2 standard where future year flows justify such a provision in approximately 10 km

- sections, Type 3 elsewhere. Consideration regarding consistency of design standard needs to be borne in mind for road safety perspective;
- 3. High standard provision (on/offline) – upgrade rural sections of the route to Type 1 standard where future year flows justify such a provision in approximately 10 km sections, Type 2 and 3 elsewhere. Once again consistency in design standards will be necessary to maximise road safety.
  - 4. Inclusion of possible relief roads – where settlement size, length of relief road and through traffic are sufficient to warrant a relief road.

As noted in the above example the targeted minimum length of route that is considered for upgrade is approximately 10km in length. The reason for this is twofold. Firstly, small sections of route upgrade (e.g. 2km) would constitute part of NRA's maintenance programme, and secondly the study is strategic in nature and only a finite number of alternatives for each route section can be considered.

There may also be a need to review the options generated and create hybrid options throughout the appraisal process should for example either the option sifting process and or the appraisal suggest that a complete route upgrade to any particular design standard is not justified.

5.2.1 Option Generation Process

The starting point for the option generation stage is the corridor specific problems and the options identified in the baseline assessment along with the SMART corridor specific objectives discussed in the Chapter 3. These give an indication of the types of options that are required to meet the problems experienced in the corridor and also provide the link between the tactical solution (i.e. the investment) and the ultimate objectives of government policy.

The option generation process is a complex one and many variables come under consideration when refining specific generated options. Firstly, the baseline assessment options for a particular route are examined and the route is broken down into individual route options of a reasonable length from a constructability point of view with a minimum length of approx 10km or between towns/villages as appropriate. Sometimes where towns/villages are located relatively close together two stretches between towns will be included in one scheme to bring the length of the scheme to a reasonable length (i.e. above 10km).

Once the corridor is broken down into suitably sized schemes to be assessed, the 50k Ordinance Survey mapping is examined and marked up to take account of existing local characteristics such as the number of river or stream crossings, sidelong topographical profiles, forest areas, dwellings close to the road etc. The aerial photography from the [www.osi.ie/publicviewer](http://www.osi.ie/publicviewer) website was also reviewed at this stage to get a general appreciation for the route. The latest available NRA videos (2009), see Figure 5.1, for the route were then examined in detail to confirm or reject what the 50k mapping and aerial photography indicated and also to provide additional information such as the hilliness of the route and other constraints such as narrow bridges, marshy land adjacent to the road or dwellings / premises close to the road. The existing road standard was noted from the videos in general terms in relation to bendiness, hilliness and width of corridor. Locations of sections with bad bends or poor vertical alignment were also noted in detail with chainages being marked and lengths calculated.

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**Figure 5.1: Video Screen Shot of Narrow Bridge on N73 between the N72 and Kildorrery**

A specific comment on overtaking opportunity was also made along with a description of any recent upgrades local or otherwise which have taken place in the vicinity of the route. The NRA and Local Authority websites were also consulted at this stage to identify schemes that had recently been constructed or were at planning stage on or in the vicinity of the route in question. To complete this search an internet search was also conducted for the route number and also for possible relief roads and bypasses for the towns and villages along the route. Comments on issues such as these were included in the 'Notes' section of the scheme sheets for the individual options.

In general, where a scheme was recently upgraded it was not recommended for further upgrade. Where an existing NRA scheme option was at planning stage the available details of the scheme have were found and an attempt to model the scheme was made to give the NRA an estimate of the costs of the scheme according to the cost model. Where details of proposed NRA or Local Authority scheme options were found that were early in the planning phase similar schemes were modelled and on occasion an alternative scheme option was also provided.

If sections of the existing route had road widths and alignments already at or better than the standard of upgrade being proposed then the lengths of these sections were noted and they were either removed from the scheme sheet (if they occurred at the start or end of the proposed option) or else they were removed from the costs (if they occurred in the middle of a proposed option).

If the traffic volumes or other parameters suggested that a required upgrade fell between two standards then scheme sheets were generated for both options and they were both put through the assessment process or one of them removed at option sifting stage. Likewise, if two options

were generated for a particular section and the lower standard generated option was thought to be only to a slightly better standard than the existing road then sometimes it was removed at the options sifting stage. In a small number of cases an existing route may pass through a very small village / crossroads with a speed limit restriction in operation at either side of the village / crossroads but with poor alignment, pavement condition or carriageway width through the village / crossroads. In cases like this where there was available width to improve the road within the speed limit then the improvement was proposed and the online costs of the improvement included on the scheme sheet. Note: In the TUBA assessment process the section upgraded within the speed limit restriction will not be credited with the benefit of a higher speed flow curve but it will benefit from alignment improvements.

In generating the scheme option sheets an estimate of any additional exceptional costs over and above those included in the cost model such as major structures or route specific construction constraints has been made in all cases. For example, where a Type 3 upgrade is being proposed the existing bridge structures may be wide enough to accommodate the upgrade, whereas if a Type 1 or Type 2 upgrade is being proposed then provision over and above that included in the cost model may need to be allocated to a particular scheme option. Possible bog or poor subgrade or rock outcrop areas are also identified using the aerial photography from the [www.osi.ie/publicviewer](http://www.osi.ie/publicviewer) website and also the subgrade GIS information provided by the NRA. An estimate of additional earthworks costs was made for construction through such areas. Likewise, if the topography in a particular area suggests that sidelong construction will be a major feature in the construction of the improvement, then an allowance is also made for this in the additional costs. From a maintenance point of view for the available subgrade and pavement condition GIS information was examined and the individual generated schemes were categorised into the appropriate maintenance brackets in relation to traffic and subgrade and also in relation to the do minimum pavement maintenance bracket.

At this stage the environmentally designated areas (NHA's, SPAs and SACs) in the vicinity of the scheme are also noted and environmental red flags identified where present. For Type 1 offline options and higher standards, the options were generated in such a way so that these environmentally sensitive areas were avoided as much as possible. In cases where the environmentally designated areas could not be avoided they were red flagged in the 'Notes' section of the scheme sheets.

Scheme sheets were also generated for possible relief road options at towns where the traffic volumes appeared to justify the assessment of a relief road option. In general, relief roads were considered from a point on the National Secondary Route in question around the town to a point on the National Secondary Route in question on the other side of the town. In some cases where appropriate the relief road was continued to connect with a national primary route or a significant Regional Road or indeed a different National Secondary Road. In a small number of cases a relief road at a particular town encompasses two National Secondary Roads; in cases such as this the relief road is attributed to the most appropriate route and will not be replicated under the other route number.

At villages, possible relief road options were also considered at a limited number of cases where traffic volumes may justify such a relief road, where there was significant congestion potential within the village and where geometrically viable relief road corridors appear to be available at a relatively low cost. Once again the 50k Ordinance Survey mapping and also the aerial photography from the [www.osi.ie/publicviewer](http://www.osi.ie/publicviewer) website were used to identify possible routes for the relief roads. The subgrade GIS information and also the environmentally designated areas GIS information were also very important in considering the appropriate location for such relief road options.

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5.3 OPTION SIFTING

At the route option generation stage, the initial option sifting took place to identify;

- Options which are clearly likely to offer very poor value for money
- Options which upon review are likely to be excessively costly or difficult to construct
- Options which do not provide continuity of standard along the route
- Options which unequivocally transgress environmental thresholds and for which no mitigation options

The final stage of the sifting process was conducted at the route option review stage where the reviewer assessed the route option scheme sheets and cross referenced them with the problems identified and the route options recommended in the baseline assessment and also the SMART corridor specific objectives.

The reviewer also cross referenced the available GIS information, (widths, sightlines, environmentally designated areas, traffic congestion, etc.) as well as the aerial photography available at the [www.osi.ie/publicviewer](http://www.osi.ie/publicviewer) website and the NRA (2009) videos for the route. First, the reviewer made general notes on the route corridor and compared these to the general notes the route option assessor had made on the 50k Ordinance Survey Mapping. The reviewer then took independent notes on what they felt the upgrade recommendations if any should be. The reviewer then compared their findings to those generated by the route option assessor. At this stage the reviewer also examined the costings put forward by the route option assessor. If necessary the reviewer then made comments and recommendations on the individual route option scheme sheets. These comments were then discussed with the route option assessor and through these discussions it was agreed which routes should go through to the appraisal process, which routes should be amended, and which routes should be sifted out at this stage.

The baseline assessment generated a total of 569 route options. The sifting process then reduced the number of options going forward for appraisal to 405 options.

5.4 SUMMARY OF OPTIONS IDENTIFIED FOR NSR NETWORK

This section summarises the options identified as a result of the problem identification described in Chapter 2, and the option generation and sifting described earlier in this Chapter and lists the options which were appraised for each national secondary route in the North Region.

Each option is named by an identifier in the form **Nxx.y.w.Tz**, where Nxx.y is a corridor on a national secondary route as identified in Table 3.2 of this report with ‘xx’ representing the route number and ‘y’ the corridor on the route. In the case of a relief road option an ‘r’ was used in place of ‘y’. ‘W’ is a number used to identify a sub-corridor generally between urban speed zones in the particular corridor ‘y’. In some cases where a variant of the same subcorridor option was being appraised then the ‘W’ number is in the form ‘w.1’, ‘w.2’ etc. ‘Tz’ represents the road cross section for the particular option i.e. T3 is a Type 3 single carriageway, T2 is a Type 2 single carriageway, T1 is a Type 1 single carriageway with a suffix ‘D’ appended for a Type 1, Type 2 or Type 3 dual carriageway cross section. This naming system was developed and used to facilitate the mutual exclusion of different route options for the same corridor and sub corridor in the prioritisation of the options.

The results of the appraisals for those options in the North Region are provided in Section 7.3 of this report with the results of the prioritisation summarised in Chapter 8.

The options appraised in the North Region in accordance with the methodology described in Chapter 4 are as follows:

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### 5.4.1 N51 – Delvin to Drogheda

#### Corridor N51d - Athboy to Delvin – 12.3km

N51.d.1.T2 Athboy to Delvin (N52)

N51.d.1.T3 Athboy to Delvin (N52)

### 5.4.2 N52 – Nenagh to Dundalk

#### Corridor N52d Kells to Delvin (N51) – 21.7km

N52.d.1.T2 Kells (N3) to Delvin (N51)

N52.d.1.T3 Kells (N3) to Delvin (N51)

#### Corridor N52e Delvin (N51) to Mullingar – 18.2km

N52.e.1.T1 Delvin (N51) to Mullingar (N4)

N52.e.1.T2 Delvin (N51) to Mullingar (N4)

#### Corridor N52f Mullingar to N6 – 17.9km

N52.f.1.T1 Mullingar(N4) to Tyrrellspass (N6)

N52.f.1.T2 Mullingar(N4) to Tyrrellspass (N6)

#### Corridor N52g N6 to Tullamore – 10.4km

N52.g.1.T1 Kilbeggan (N6) to Tullamore Bypass

#### N52 Possible Relief Roads

N52.r.3.T2 Clonmellon Relief Road

N52.r.4.T2 Delvin Relief Road

### 5.4.3 N54 – Monaghan to Cavan

#### Corridor N54a Monaghan to Clones – 19.5km

N54.a.1.T1 Monaghan Town to Smithborough

N54.a.1.T2 Monaghan Town to Smithborough

N54.a.2.T1 Smithborough to Clones

N54.a.2.T2 Smithborough to Clones

#### Corridor N54b Clones to Cavan – 20km (13.8km in Republic of Ireland)

##### NI Border to NI Border – 4km

N54.b.1.T2 Northern Ireland border to Butlers Bridge

N54.b.1.T3 Northern Ireland border to Butlers Bridge

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**N54 Possible Relief Roads**

N54.r.1.T1	Monaghan Town Relief Road (south)
N54.r.2.T1	Smithborough Relief Road
N54.r.2.T2	Smithborough Relief Road
N54.r.3.T2	Clones Relief Road

**5.4.4 N55 – Athlone to Cavan****Corridor N55a Cavan to Granard – 27.3 km**

N55.a.1.T2	Bellanagh to Granard
N55.a.1.T3	Bellanagh to Granard

**Corridor N55b Granard to Edgeworthstown – 12.1 km**

No options identified

**Corridor N55c Edgeworthstown (N4) to Athlone (N6) – 38.6 km**

N55.c.1.T2	Edgeworthstown (N4) to Ballymahon
N55.c.1.T3	Edgeworthstown (N4) to Ballymahon
N55.c.2.T2	Ballymahon to Glassan
N55.c.2.T3	Ballymahon to Glassan
N55.c.3.T2	Glassan to Ballykeeran
N55.c.3.T3	Glassan to Ballykeeran

**N55 Possible Relief Roads**

N55.r.1.T2	Bellanagh Relief Road
N55.r.2.T2	Granard Relief Road
N55.r.3.T1	Edgworthstown Relief Road
N55.r.4.T3	Ballymahon Relief Road
N55.r.5.T1	Glassan Relief Road
N55.r.6.T1	Ballykeeran Relief Road

**5.4.5 N56 – Donegal to Letterkenny****Corridor N56a Letterkenny to Dunfanaghy – 36.9km**

N56.a.1.T2	Coolboy to Kilmacrenan
N56.a.1.T3	Coolboy to Kilmacrenan
N56.a.2.T2	Kilmacrenan to Creeslough
N56.a.2.T3	Kilmacrenan to Creeslough
N56.a.3.T2	Creeslough to Portnablathy

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**Corridor N56b Dunfanaghy to Gweedore – 44.2km**

N56.b.1.T3	Dunfanaghy to Gortahork (break at Falcarragh)
N56.b.2.T2	Gortahork to Crolly (Gweedore)
N56.b.2.T3	Gortahork to Crolly (Gweedore)

**Corridor N56c Gweedore to Dunglow – 17km**

N56.c.1.T2	Crolly to Dunglow (break at Loughanure)
N56.c.1.T3	Crolly to Dunglow (break at Loughanure)

**Corridor N56d Dunglow to Glenties – 27km**

N56.d.1.T2	Dunglow to Lettermacaward
N56.d.1.T3	Dunglow to Lettermacaward
N56.d.2.T3	Lettermacaward to Glenties

**Corridor N56e Glenties to Killybegs (Dunkineely) – 27km**

N56.e.1.T3	Glenties to Ardara
N56.e.2.T2	Ardara to Killybegs (R263 junction)
N56.e.2.T3	Ardara to Killybegs (R263 junction)

**Corridor N56f Killybegs (Dunkineely) to Donegal Town – 19km**

N56.f.1.1.T1	Killybegs (Junction with R263) to Inver
N56.f.1.2.T1	Killybegs (Junction with R263 – The Five Points) to Inver
N56.f.1.1.T2	Killybegs (Junction with R263) to Inver
N56.f.1.2.T2	Killybegs (Junction with R263 – The Five Points) to Inver
N56.f.1.T3	Killybegs (Junction with R263) to Dunkineely
N56.f.2.T1	Inver to Mountcharles
N56.f.2.T2	Inver to Mountcharles

**N56 Possible Relief Roads**

N56.r.1.T2	Creelough Relief Road
N56.r.2.T2	Dunglow Relief Road

**5.4.6 N59 – Sligo to Galway****Corridor N59a Ballysadare to Ballina – 53.4km**

N59.a.1.T2	Ballysadare to Dromore West
N59.a.1.T3	Ballysadare to Templeboy
N59.a.2.T2	Dromore West to Ballina
N59.a.2.T3	Dromore West to Ballina

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### 5.4.7 N62 – Athlone to Horse & Jockey

#### Corridor N62a Athlone to Birr – 34.8km

N62.a.1.T2 Athlone (N6) to Ferbane

N62.a.1.T3 Athlone (N6) to Ferbane

### 5.4.8 N63 – Longford to Galway

#### Corridor N63a Longford to Lanesborough – 16.1km

N63.a.1.T1 Longford to Lanesborough

N63.a.1.T2 Longford to Lanesborough

#### N63 Possible Relief Roads

N63.r.1.T1 Longford Relief Road

N63.r.2.T2 Killashee Relief Road

### 5.4.9 N80 –Athlone to Enniscorthy

#### Corridor N80a – Moate (N6) to Tullamore (N52) – 20.9km

N80.a.1.T1 Woodfield to Clara

N80.a.1.T2 Woodfield to Clara

### 5.4.10 N87 –Belturbet to Swanlinbar

#### Corridor N87a Belturbet to Ballyconnell - 11.7km

N87.a.1.T2 Belturbet to Ballyconnell

N87.a.1.T3 Belturbet to Ballyconnell

#### Corridor N87b Ballyconnell to Swanlibar - 15.8km

N87.b.1.T2 Ballyconnell to Bawnboy

N87.b.1.T3 Ballyconnell to Bawnboy

N87.b.2.T2 Bawnboy to Swanlinbar

N87.b.2.T3 Bawnboy to Swanlinbar

N87.b.3.T2 Swanlinbar to N.I. Border

N87.b.3.T3 Swanlinbar to N.I. Border

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6 COST ESTIMATION

6.1 INTRODUCTION

The cost to upgrade the National Secondary Road Network (NSRN) is an essential component of the appraisal of the options generated. This cost may be quite variable and will vary between schemes due to existing conditions, environmental impact, physical constraints, ground conditions, land and the nature and standard of the upgrade proposed. In order to obtain meaningful appraisal results, it is essential that realistic and robust cost estimation is achieved. In the following sections, the methodology adopted to determine an accepted cost estimation model that is robust and adaptable to the various scenarios that may be encountered when considering upgrade options is outlined.

The costs to be considered in the upgrades of the NSR network are the construction costs, the land acquisition costs, the archaeology costs, the planning/design costs and the supervision costs. In the following sections, the methodology applied in this study is outlined.

The costs quoted in this document are exclusive of VAT.

6.2 METHODOLOGY

For the most part, the potential upgrades to the National Secondary Roads will be to specific single carriageway standards. In accordance with NRA TD9 and NRA TD27, as amended by IAN 01/09, the following are the typical range of upgrade options that will apply to the NSRN;

- S2 Type 1 Single Carriageway – A 7.3m wide Single Carriageway, with Hard Shoulders, for use on National Secondary Routes with Design Year Traffic Flows above 8,600 AADT, typically. The Design Speed Standard for S2 Type 1 is 100kph.
- S2 Type 2 Single Carriageway – A 7.0m wide Single Carriageway, with Hard Strips, for use on National Secondary Routes with Design Year Traffic Flows below 8,600 AADT, typically. The Design Speed Standard for S2 Type 2 is 100kph.
- S2 Type 3 Single Carriageway – A 6.0m wide Single Carriageway, with Hard Strips, for use on National Secondary Routes with Design Year Traffic Flows below 5,000 AADT, typically. The Design Speed Standard for S2 Type 3 is 85kph.

These road standards are the principal types that will apply to the upgrade of the NSRN. Each will differ in their construction cost and the higher the standard adopted the higher the cost will be.

For the most part, it is not envisaged that the National Secondary Road network will be upgraded by new routes. Thus, typically the alignment of the existing road will be incorporated as much as possible into the upgrade. Thus, an upgrade is likely to consist of percentages of the upgrade that are on-line and off-line. Logically, the cost of an upgrade that can be incorporated into the existing road corridor will be lower as the realignment will not require as much new construction and land costs will be negligible. However, the construction costs for on-line construction are likely to require additional temporary traffic management, possibly additional temporary works and may be more onerous in terms of the phasing and programming of the works.

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The principal variables that apply to providing a robust cost estimation model for upgrades to the NSRN are summarised thus;

- Standard of upgrade proposed
- Percentage on-line and percentage off-line
- Land acquisition costs.
- Archaeology
- Planning, design and procurement costs
- Exceptional costs

### 6.2.1 Construction Cost from First Principles

In order to establish a base construction cost range for the types of road upgrades likely to be implemented on the NSR network, a fully on-line and fully off-line scenario for each S2 Single Carriageway Option was cost estimated on a per kilometre basis. The exception to this is the S2 Type 1 Cross Section, which if adopted for an upgrade will be effectively 100% off-line.

These cost estimates are based on the particular standard cross-section layouts with assumed typical earthworks, drainage, pavement, general roadworks and structural requirements. The results of this analysis excluding VAT are summarised in Table 6.1:

**Table 6.1: Normal Construction Cost Estimates from First Principles**

Road Upgrade Standard	Fully On-line		Fully Off-line	
	Lower Bound	Upper Bound	Lower Bound	Upper Bound
S2 Type 1	N/A	N/A	€2,000,000	€3,100,000
S2 Type 2	€760,000	€1,150,000	€1,470,000	€2,300,000
S2 Type 3	€650,000	€980,000	€1,180,000	€1,750,000

In order to establish a construction cost for each proposed upgrade of the network, it is proposed that the proportions of the upgrade that is on-line and off-line be established. Once this is established, the appropriate rates from the ranges given in Table 6.1 can be applied to estimate the normal expected construction cost for upgrading the route option in rural areas.

### 6.2.2 Exceptional Costs

The cost estimation ranges from first principles represents normal construction and do not specifically address exceptional circumstances that might apply to any particular upgrade option. As upgrade options are generated by this study, it is proposed that where possible, exceptional circumstances such as large rock excavations, soft ground, significant river crossings, difficult topography will be noted in the assessment and that an appropriate premium will be added to the construction cost of the particular upgrade. It is also proposed that 'environmental red flags' that may be raised in the Appraisal process will be considered from an additional cost perspective and that an appropriate addition be made to the construction cost accordingly.

With reference to Section 6.2.3, an appropriate premium/exceptional cost should be considered for lands required for bypass or relief road options close to existing urban centres.

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### 6.2.3 Land Costs

Typically the cost of acquiring land for the purposes of road infrastructure development will be subject to the procedures established in legislation and for lands not the subject of planning permission or zoned for open space, commercial, residential, industrial or recreational purposes, the Agreement between the Irish Farmers' Association and the Department of the Environment and Local Government and the NRA which was established in 2001. The costs to be taken into account include the open market value of the land to be acquired, injurious affection, severance, disturbance and where applicable, a goodwill payment of €5,000 per acre.

It is envisaged that the December 2001 Agreement will apply to lands compulsorily acquired for upgrades to the NSR network.

The factors which will influence land costs on the NSR network include market sentiment at the date of service of the notice to treat, the development potential of the relevant land, transaction comparisons in the vicinity of the proposed scheme and the nature of the enterprise carried out on the land. On-line schemes tend to involve acquisition of or injury to occupied houses and can complicate access to/egress from property, all of which leads to higher compensation entitlements. Off-line schemes will sever portions of land from the main holding and this can cause difficulties, particularly for dairy farmers for which compensation will be payable.

Considering the average land acquisition costs for schemes which are predominantly located in the rural environment, without significant urban or peri-urban factors, an average land acquisition cost of €100k per acre is considered to be an appropriate valuation for off-line construction.

For schemes and portions of schemes, where slivers of land adjacent to the road are expected to be acquired, it is expected that there will be some difference in the average price per acre. It is considered that an evaluation of €50k per acre is a good representation of the expected average price that will be necessary to purchase slivers of land adjacent to the existing road.

For on-line construction, the land costs are assumed to be negligible, though it is acknowledged that accommodation works may be necessary at individual properties that may be affected by proposed upgrades immediately adjacent to their accesses. This element will normally be included in the construction cost.

Thus, the following typical land costs are assessed;

- Fully off-line land acquisition - €100k/acre
- Acquisition of slivers of lane adjacent to existing roads - €50k/acre
- Fully on-line land acquisition - negligible

Taking these basic land acquisition costs and assumed typical profiles for the S2 Single Carriageway upgrade standards, the following are the approximated land costs per km of upgrade;

- S2 Type 3 fully offline - €500k/km.
- S2 Type 3 off-line adjacent to the existing road – €125k/km.
- S2 Type 2 fully offline - €700k/km.
- S2 Type 2 off-line adjacent to the existing road – €175k/km
- S2 Type 1 fully offline €900k/km.

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## 6.3 ARCHAEOLOGY

For the construction of road schemes in Ireland, archaeological assessment and resolution has become an identifiable financial risk which needs to be taken into account in the estimation of project costs. Sites of known archaeological interest should be avoided; however, there is always a residual risk that unknown sites of archaeological interest would be encountered. To mitigate this risk, archaeological surveys and investigations have become normal best practice and would have to be taken into account in this Cost Estimation model.

Much of the NSR network is expected to be upgraded predominantly along the route of the existing road. Broadly speaking the existing roads would be considered to be unlikely to be the sites of major archaeological interest and so this risk is unlikely to be as significant as for schemes that are fully off-line. Thus, for this study it is proposed for fully offline solutions, that an archaeological cost of €0.13m/km be utilised in the analysis and that the archaeological cost associated with on-line construction is considered to be negligible.

## 6.4 PLANNING, DESIGN AND SUPERVISION

The design, planning and supervision costs associated with scheme procurement are important considerations in the overall cost of a project. These costs also include ground investigations, environmental surveys and topographical surveys. As a percentage of construction cost, it is considered that these costs could vary considerably depending on scheme complexity, planning/environmental requirements and form of procurement.

For the purposes of this study, it is proposed to adopt a sum of €0.3m per km to take into account the planning, design and supervision costs for each scheme appraised.

## 6.5 SUMMARY OF COST ESTIMATION METHODOLOGY ADOPTED

Using the available sources of costing information, the following summarises the proposed cost model adopted for the National Secondary Road Needs Study with a base date of May 2009;

### S2 Type 1 Standard – Off-line construction

Construction cost	-	€3.1m/km
Land and property	-	€0.90m/km
Planning, Design, supervision	-	€0.3m/km
Archaeology	-	<u>€0.13m/km</u>
<b>Total</b>		<b>€4.43m/km plus exceptional costs, if any</b>

### S2 Type 2 Standard – Off-line construction

Construction cost	-	€2.3m/km
Land and property	-	€0.70m/km
Planning, Design, supervision	-	€0.3m/km
Archaeology	-	<u>€0.13m/km</u>
<b>Total</b>		<b>€3.43m/km plus exceptional costs, if any</b>

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**S2 Type 2 Standard – On-line construction**

Construction cost	-	€0.96m/km
Land and property	-	€0.00m/km
Planning, Design, supervision	-	€0.30m/km
Archaeology	-	<u>€0.00m/km</u>
<b>Total</b>		<b>€1.26m/km plus exceptional costs, if any</b>

**S2 Type 2 Standard – Partially off-line construction**

Construction cost (50% off-line + 50% on-line)	-	€1.63m/km
Land and property	-	€0.175m/km
Planning, Design, supervision	-	€0.30m/km
Archaeology (50% of fully off-line)	-	<u>€0.065m/km</u>
<b>Total if any</b>		<b>€2.17m/km plus exceptional costs,</b>

**S2 Type 3 Standard – Off-line construction**

Construction cost	-	€1.75m/km
Land and property	-	€0.50m/km
Planning, Design, supervision	-	€0.30m/km
Archaeology	-	<u>€0.13m/km</u>
<b>Total</b>		<b>€2.68m/km plus exceptional costs, if any</b>

**S2 Type 3 Standard – On-line construction**

Construction cost	-	€0.82m/km
Land and property	-	€0.00m/km
Planning, Design, supervision	-	€0.30m/km
Archaeology	-	<u>€0.00m/km</u>
<b>Total</b>		<b>€1.12m/km plus exceptional costs, if any</b>

**S2 Type 3 Standard – Partially off-line construction**

Construction cost (50% off-line + 50% on-line)	-	€1.285m/km
Land and property	-	€0.125m/km
Planning, Design, supervision	-	€0.30m/km
Archaeology (50% of fully off-line)	-	<u>€0.065m/km</u>
<b>Total if any</b>		<b>€1.775m/km plus exceptional costs,</b>

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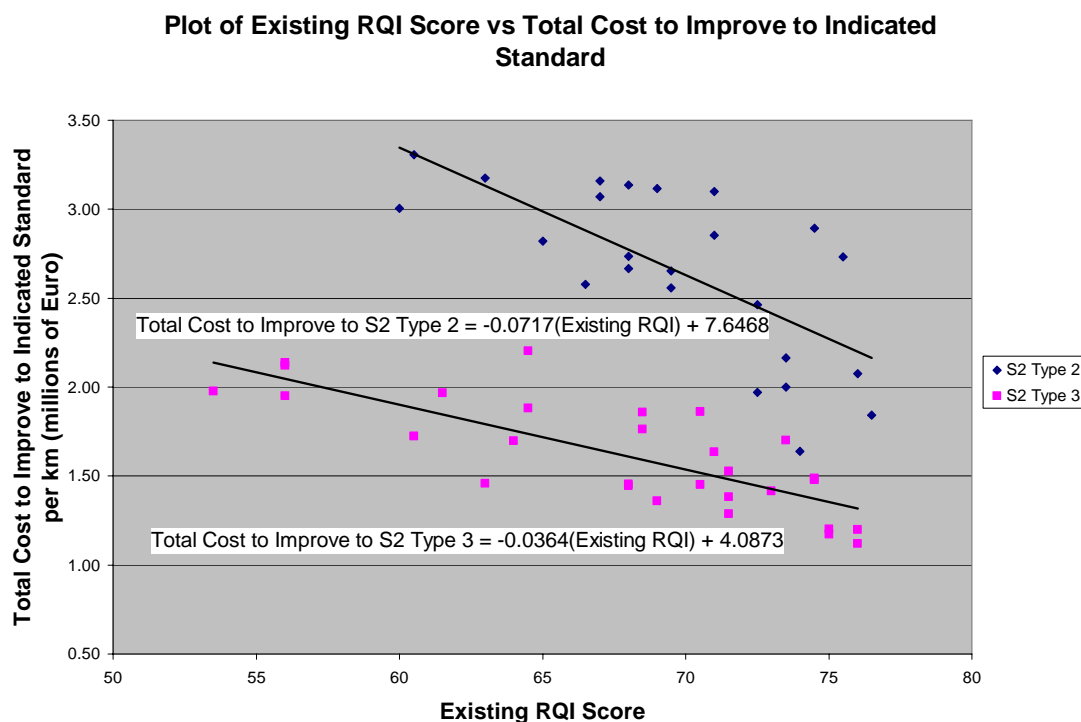
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## 6.6 APPLICATION OF COST MODEL TO TRAFFIC MODEL

As part of the Study, relationships between the measured Route Quality Index (RQI) and associated speed flow curves as modelled in the Traffic Model and the cost to upgrade route corridors of varying existing condition to the various standards was established using a number of pilot schemes. This relationship essentially establishes a relationship between existing road condition and the cost to upgrade it to a specific standard. The following graphics present this relationship for upgrades to S2 Type 3 and S2 Type 2 Standards and represent the cost model as applied in the appraisal process.



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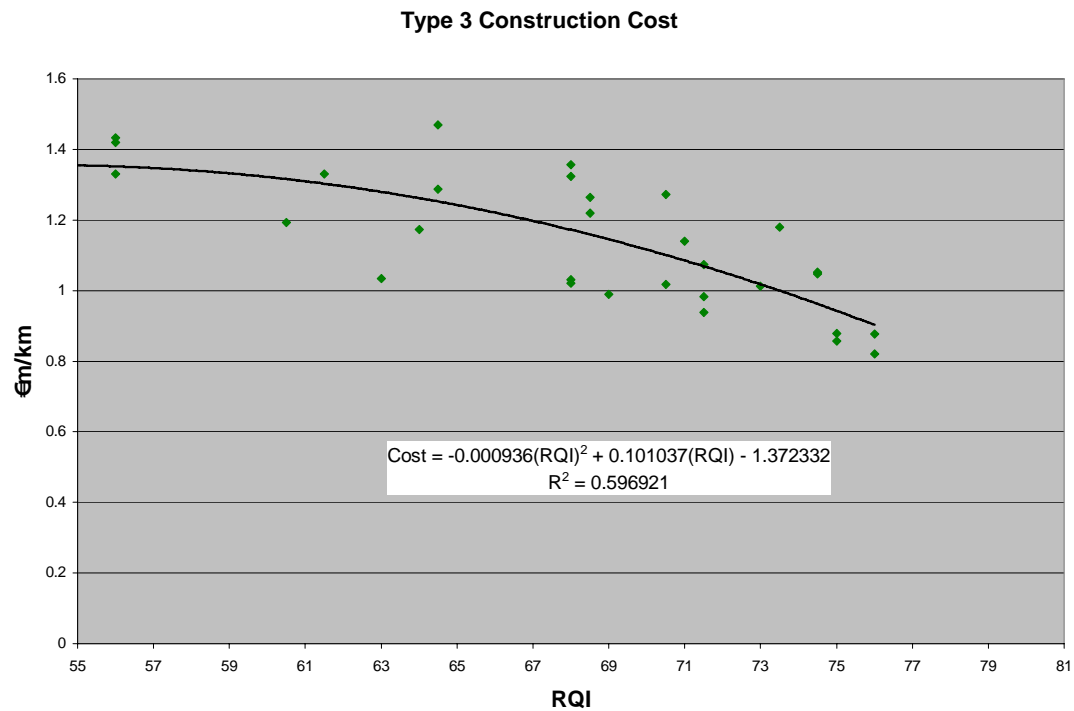
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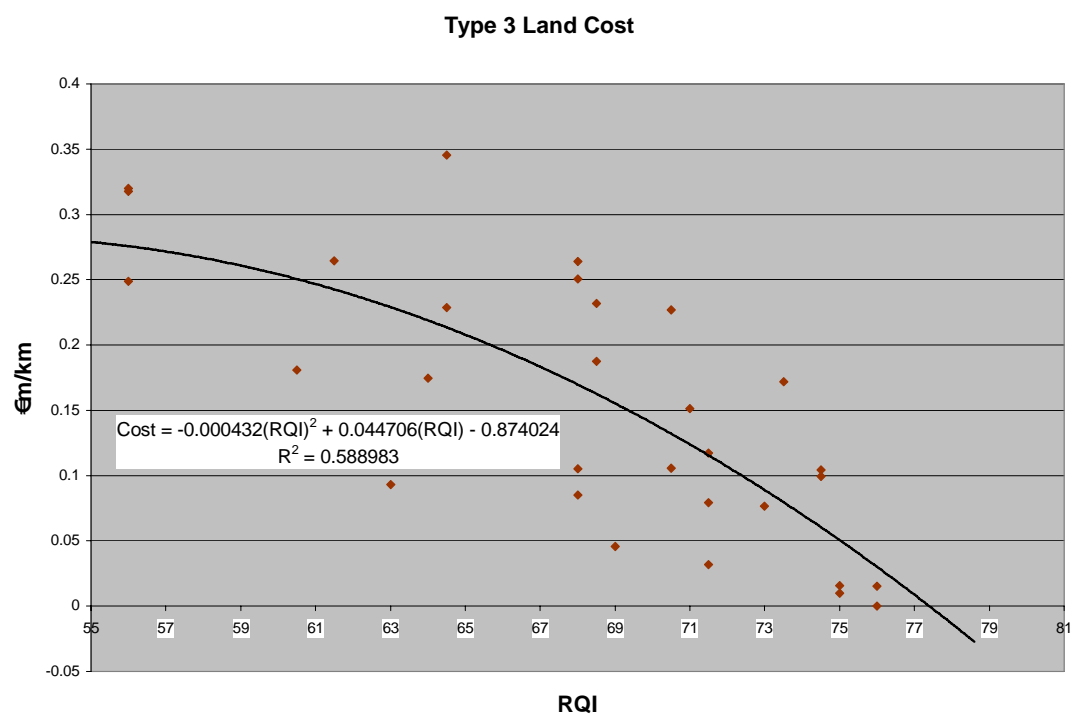
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**Figure 6.1: Plot of Existing RQI Score vs Total Cost to Improve to Indicated Standard**

The individual relationships between the existing RQI and Construction Cost, Land Cost and Archaeological Cost were also developed for the Type 3 and Type 2 Options. These relationships are outlined in graph format in Figures 6.2 to 6.7:



**Figure 6.2: Plot of Existing RQI Score vs Total Construction Cost to improve to Type 3**



**Figure 6.3: Plot of Existing RQI Score vs Total Land Cost to improve to Type 3**

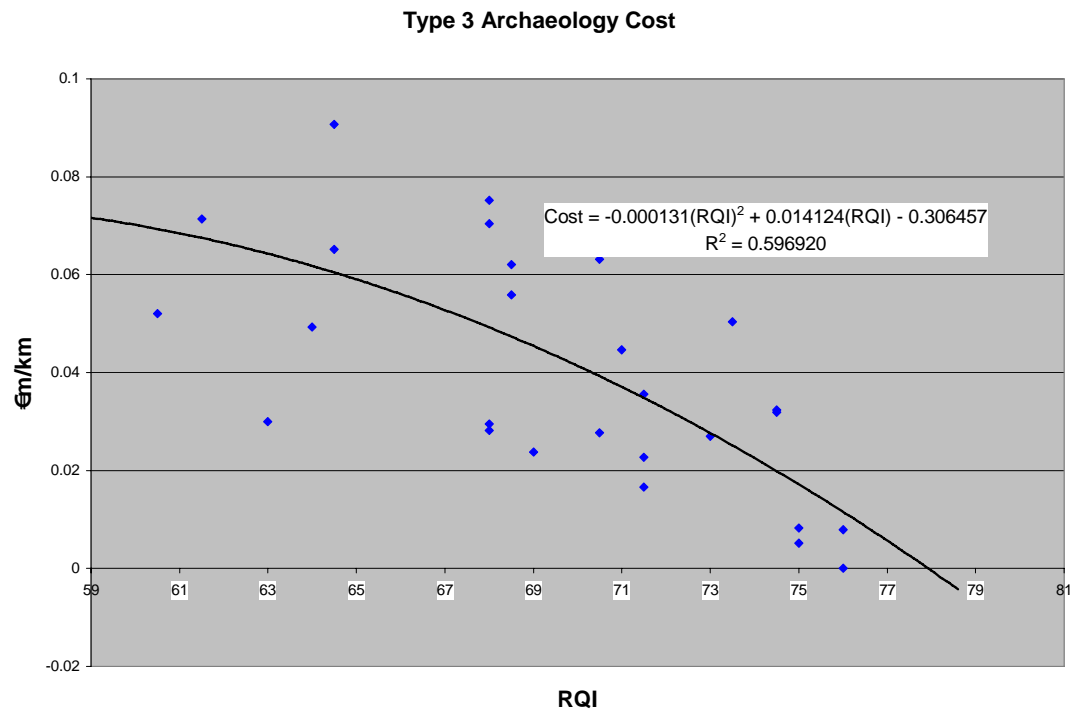
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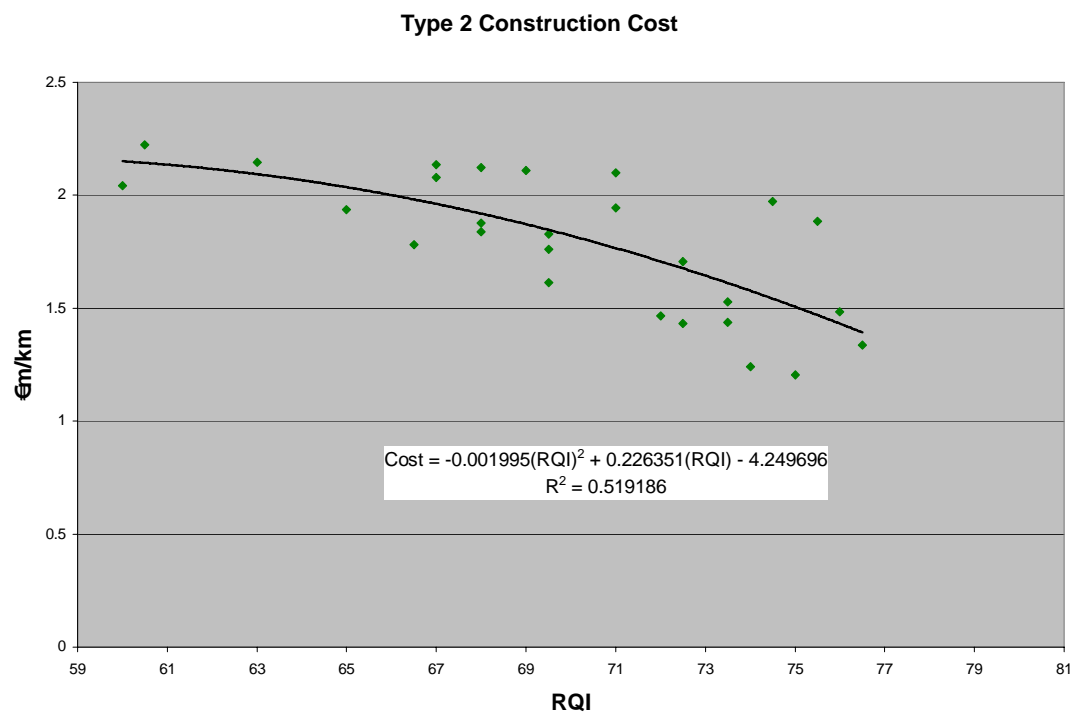
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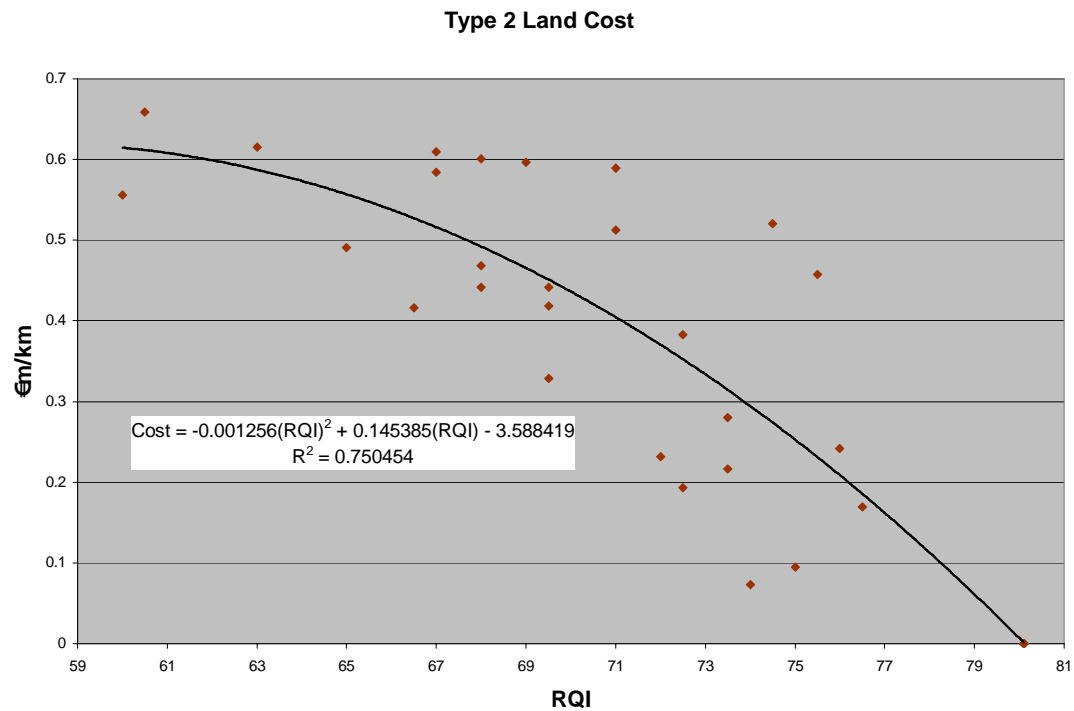


**Figure 6.4: Plot of Existing RQI Score vs Total Archaeology Cost to improve to Type 3**

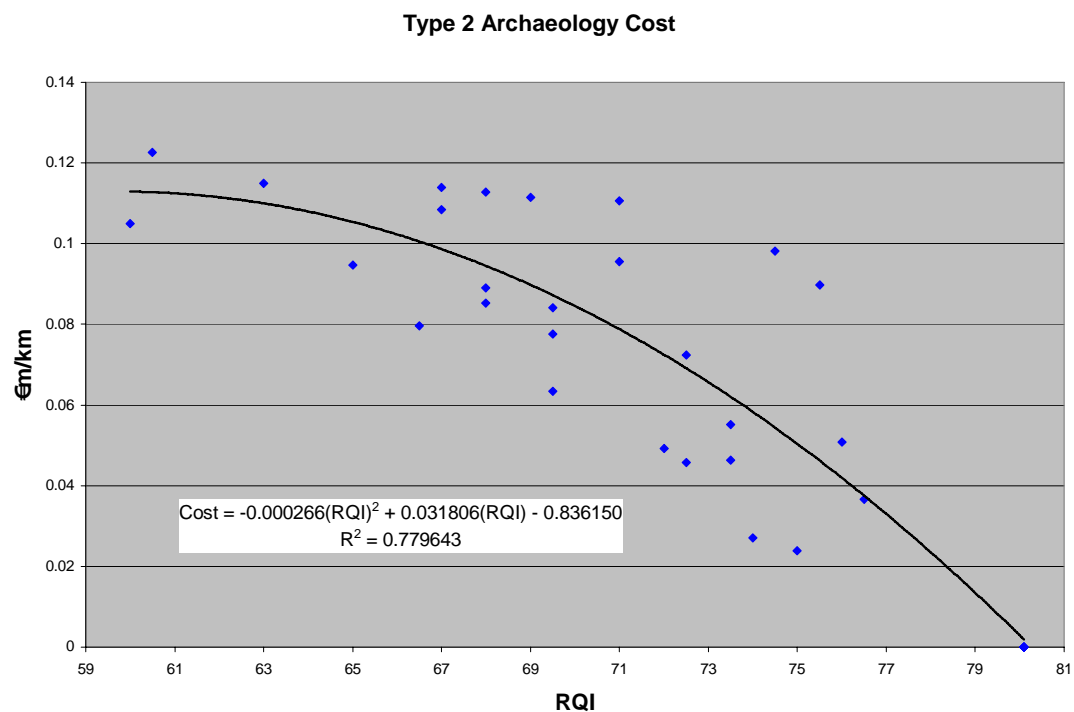


**Figure 6.5: Plot of Existing RQI Score vs Total Construction Cost to improve to Type 2**

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**Figure 6.6: Plot of Existing RQI Score vs Total Land Cost to improve to Type 2**



**Figure 6.7: Plot of Existing RQI Score vs Total Archaeology Cost to improve to Type 2**

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6.7 MAINTENANCE AND RENEWAL COSTS

The standard approach used to calculate maintenance costs is to apply a fixed cost per km per annum (NRA PAG, Appendix 6). For a national study like the NSRNS this approach is too coarse as it does not reflect how the quality of the existing pavement structure will vary between national secondary routes and how different maintenance regimes are needed in different environmental and soil conditions. A bespoke maintenance cost model has therefore been developed for the NSRNS.

In the absence of sufficient pavement maintenance expenditure, the condition of the NSR network deteriorates over time due to the combined effects of traffic loading, environmental conditions and changes in material properties. The cost to restore the deteriorated pavement to an acceptable pavement condition increases depending on the level of condition deterioration. In addition, the annual costs to maintain the pavement (e.g. localised repairs that do not significantly improve the overall pavement condition) will also increase as the pavement condition decreases.

Typically, the relationship between cost to renew the pavement and existing condition is a non-linear function. Costs to renew pavements with poor existing condition, particularly pavements that have exceeded their structural carrying capacity, are much higher (typically by a ratio of 3 or 4 to 1) than the costs to renew pavements with better existing condition.

In addition, the annual costs to maintain the pavement (e.g. localised repairs – that do not significantly improve the overall pavement condition) will also increase as the pavement condition decreases. On the other hand, pavement sections that are upgraded as part of the multi-year plan will have ongoing maintenance costs that are significantly lower than would otherwise be the case, and these cost savings over an extended period are captured in the analysis.

For this study, the following Do Something categories are established;

- schemes with low traffic and generally good subgrade,
- schemes with high traffic and generally good subgrade,
- schemes with low traffic and generally poor subgrade and
- high traffic and generally poor subgrade.

It is envisaged that each of these categories will attract differing maintenance requirements over the 30 year appraisal period. In consideration of the typical traffic flows evident on the NSR network it is proposed that the definition of low traffic volume be 5,000 AADT. Included in the economic appraisal of options is a typical maintenance regime associated with an upgrade scheme.

In order to assess the impact of carrying out the investment to upgrade the network, it is necessary to consider the option of not carrying out the upgrade. In this Do Minimum scenario, the network will continually deteriorate and require ever increasing maintenance and renewal. In order to give consideration to the current state of the existing road network, it is proposed to consider the IRI parameter in a range of bands to distinguish between the various extents to which ongoing maintenance and renewal will be necessary. Included in the economic appraisal methodology is a Do minimum maintenance regime associated with band widths of IRI; Range 0 to 2.5, 2.6 to 3.5, 3.5 to 5.0 and > 5.0.

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# 7 APPRAISAL OF OPTIONS

Having identified a set of 405 feasible scheme options for improvement of the NSR network, each option was assessed against the five appraisal criteria.

Extensive traffic modelling work was undertaken to estimate the traffic impact of each option. The changes in traffic flows and speeds were then fed into the assessments of economic and safety impacts of each scheme, and informed aspects of the environmental assessment.

## 7.1 TRAFFIC MODEL ENHANCEMENTS

The traffic model used for this study was a version of the NRA's National Highway Model. For the purposes of assessing improvements to NSRs, a number of significant improvements to the model were implemented.

### 7.1.1 Road Network in Northern Ireland

Among NSRs, the N53, N54 and N87 carry significant amounts of cross-border traffic, which is considered to be of particular political and economic importance. The original model's representation of such traffic was quite coarse, with county-size zones and only primary routes represented in the North.

In order to get a better estimate of the proportion of cross-border traffic likely to use NSRs, additional detail was introduced. Additional links were coded to represent the North's equivalent of NSRs, and more centroid connectors were introduced so as to spread the traffic to and from the six counties more widely.

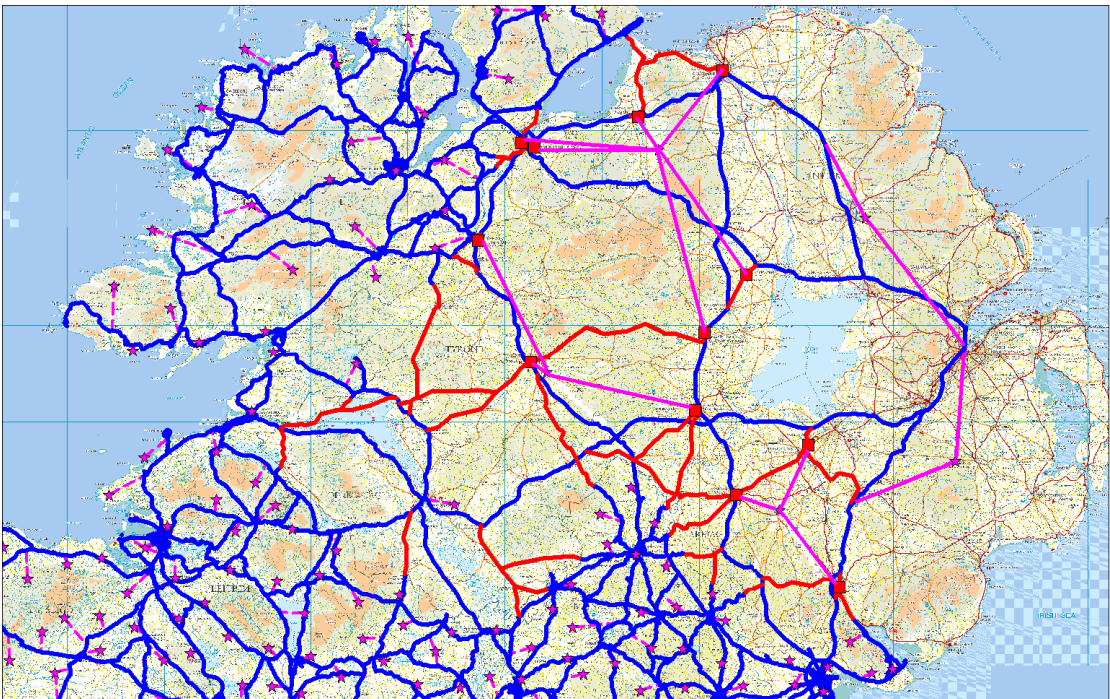


Figure 7.1: Additional Road Network in Northern Ireland

Figure 7.1 shows in blue the original network, in red the additional Northern Ireland A-roads that were added to the network and in pink the amended centroid connectors. The number of loading points in the North (red squares) has been increased.

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### 7.1.2 Business Traffic

The economic justification for treating some traffic movements as being more valuable than others is based on business travellers and freight having higher values of time than other traffic. The model assigns freight traffic separately, but the original version had merged business traffic with leisure and other non-commuting traffic prior to the matrix estimation step of the original National Traffic Model development.

In order to be able to draw conclusions about which roads serve a strategic function by carrying above-average proportions or volumes of freight and business traffic, the non-commuting car matrix was split into Business and non-Business proportions, using the original pre-matrix-estimation matrices supplied by the NRA.

### 7.1.3 Tolls and Ferries

There are a small number of tolled roads and ferries in Ireland. Although many are of limited significance, the Tarbert-Killimer ferry was considered to be of importance for modelling traffic on the N67 / N68 / N69.

The NRA supplied details of the existing tolls and these were interpolated between rates for different classes of HGV in order to give representative average values, and extrapolated to other years as required. Future year tolls are projected to remain at 2009 levels in real terms.

### 7.1.4 Changes to Generalised Cost

With the introduction of tolls, it becomes necessary to include in the model explicit values of time for converting between money costs and time costs, so as to model the choice between quicker tolled routes and slower free routes for each origin-destination pair for which such a choice applies.

Values of time, vehicle occupancy, and fuel and non-fuel costs were derived from the appraisal values set out in the NRA Project Appraisal Guidance.

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**Table 7.1: Values of Time and Distance used in Generalised Cost Function (Units are Cents)**

Values of time (cents)					
	<u>user class</u>	<u>Business</u>	<u>Commuting</u>	<u>Other</u>	<u>HGV</u>
a	VoT per person 2002	2220	680	610	2220
b	occupancy	1.33	1.34	1.83	1.13
c	VoT per veh 2002 (= a x b)	2953	911	1116	2509
d	VoT growth 2002-2006		1.066		
e	VoT per veh 2006 (= c x d)	3148	972	1190	2675
f	VoT growth 2006-2025		1.568		
g	VoT per veh 2006 (= e x f)	4938	1524	1867	4195



Values of distance			
		<u>2006</u>	<u>2025</u>
Business Car	Fuel cost/km	5.3	4.1
	Non-fuel cost/km	8.5	8.5
	TOTAL c/km	13.7	12.6
Commuting /Other Car	Fuel cost/km	5.3	4.1
	Non-fuel cost/km	4.9	4.9
	TOTAL c/km	10.1	9.0
HGV	Fuel cost/km	26.8	25.5
	Non-fuel cost/km	19.9	19.9
	TOTAL c/km	46.7	45.4

### 7.1.5 Additional Traffic Data

A programme of traffic survey data was commissioned and collected in May 2009. This was used to supplement the original traffic database for the model, which was focussed mainly on the National Primary Routes. In order to ensure that the model robustly represented traffic on the National Secondary routes, supplementary data was felt to be required.

The principal aim of collecting new traffic count data was to supplement the existing ATC data stored within the model, so as to ensure a satisfactory level of coverage over the whole of the NSR network. Automatic traffic counters were laid down for a period of two weeks at thirty sites on the network.

Flows on the NSRs are generally light in comparison with the major inter-urban routes. For these rural routes, hourly flows are typically around one-fifteenth of daily flows, so each 100 vehicles per hour one-way equates to around 3000 AADT two-way.

A factor of 0.965 was subsequently applied to convert the counts from 2009 levels to 2006 levels, for use in the base year model. This factor was derived as the average over figures taken from a set of NRA permanent traffic counters on NSRs.

### 7.1.6 Journey Time Survey Data

Journey Time Surveys were undertaken for 20 route sections, chosen to give good coverage of a range of road and traffic conditions over all parts of the country. Each route section was a stretch of approximately 20km of National Secondary route, usually starting and ending at junctions with Regional or National roads.

Surveys used the “moving observer” method – one person would drive along the route in an ordinary car, attempting to keep to the same speed as other traffic and not exceed the speed limit, with a GPS unit automatically recording time and position at frequent intervals.

Each route was driven in both directions 3 times in succession in the morning peak, and then repeating for another 3 times at the inter-peak (12:00 to 14:00) time period.

Average speeds over NSR sections that are represented in the model as urban links was 48kph.

Average speeds over NSR sections that are represented in the model as rural links varied considerably, between 51kph and 94kph.

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### 7.1.7 Speed-Flow Curves

This variation in speeds was represented in the model by linking the modelled speed to the Route Quality Index derived as part of the Baseline Assessment and outlined in Chapter 2. A family of speed-flow curves was derived, as shown in Figure 7.2.

Each curve is linear up to a nominal capacity value. Although flows greater than the capacity value may not arise in practice, the model needs to be able to estimate a speed for any given demand level, as part of the assignment process. The form of curve used here – a hyperbolic tail as in the standard UK Advice Note 1A curves reflects an assumption that queuing behaviour applies beyond capacity, so that incremental delay is linear in flow.

Theory suggests that better quality roads not only have a higher freeflow speed, but also a higher capacity and a flatter slope, as the incremental impact of each additional vehicle is lower.

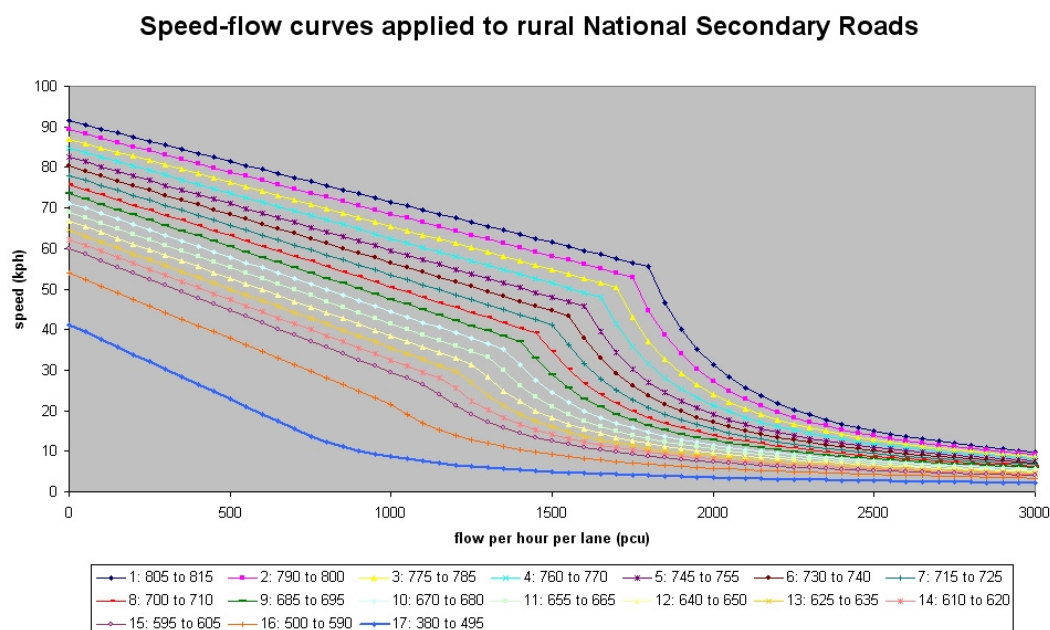
Within this structure, there are then six parameters to be estimated:

- Free-flow speed for a reference curve
- Variation of free-flow speed with Route Quality Index
- Slope for a reference curve
- Variation of slope with Route Quality Index
- Capacity of a reference curve
- Variation of capacity with Route Quality Index

A consistent set of parameters were derived from three sources of evidence:

- Historic journey time information on NSRs held by NRA in the form of a set of GPS data.
- Recorded speeds from Journey Time Surveys
- Spot speeds from the Automatic Traffic Counters

Details of the estimation are presented in the Traffic Model Development Report.



**Figure 7.2: Speed-Flow Curves for Rural NSR Sections**

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7.1.8 Model Revalidation

The base year (2006) trip matrices from the original National Highway Model were adopted without adjustment.

Having made changes to the network speeds on NSRs within the model, a check was undertaken to ensure that the modelled flows adequately reproduced the existing and supplementary traffic count data.

Two adjustments were required in order to attain a good fit to count data:

- reducing the modelled speeds on rural regional roads in order to balance the relative attractiveness of routes using these roads compared with alternative routes using NSRs
- reducing speeds within Dublin to compensate for the introduction of tolls on the M50.

With these corrections, the model validated well.

7.2 TRAFFIC MODEL APPLICATION

7.2.1 Do-Min scenario

All scheme options were tested for a future year of 2025. A Do-Minimum scenario was constructed, in which only completed and committed improvements to the national road network were assumed to be in place. Road layouts for these improvements were taken from an existing future year network from the National Highway Model. This formed an appropriate reference case against which the introduction of improvements to the NSR network was assessed.

7.2.2 Future year traffic levels

The future year matrices used for the National Highway Model were originally derived from population and employment growth factors which now appear somewhat optimistic in the light of the economic downturn. These matrices were used in this study only as a high growth sensitivity test.

For the appraisal of schemes, a set of Medium growth 2025 matrices was calculated as a linear interpolation between the Base year 2006 matrices and the 2025 High growth matrices. The factor used was 46% - a little less than half-way between Base and High growth demand levels. This was derived from a draft Note on Population Projections prepared for NRA by Goodbody Economic Consultants, which indicated that of the various national population scenarios prepared by CSO, scenario F1M0 now appears the most likely outcome. This scenario depicts a national population of 4.859m in 2025.

7.2.3 Convergence

Rather than using the full national traffic model for assessment of scheme options, a set of cordon models was created. This was to reduce the problem of “noise” in the model - a well-known issue when modelling the impact of small changes to a large modelled network.

Like most traffic models, the national traffic model uses an equilibrium approach – running for a number of iterations, each iteration coming closer to a fully-equilibrated state of the system where the traffic flows and costs are perfectly balanced and no driver can reduce their journey

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costs by taking a different route. The process stops when the model is sufficiently close to reducing this theoretical equilibrium state, but it never quite gets there. If the modelled area is large relative to the degree of improvement offered by the scheme, the uncertainty in the model results arising from imperfect convergence of the process can be of the same order of magnitude as the benefits of the scheme, so that the results have a high level of statistical uncertainty attached.

7.3 OPTIONS APPRAISED

Having scored each scheme option against each appraisal subcriterion as set out in Chapter 4, the option is presented on a scheme sheet as a red line on the location plan with some summary data with respect to length, traffic model links and scheme cost under the various headings. In addition the 'Notes' section of the scheme sheet provides a brief description of the route and identifies route constraints.

The appraisal results are presented as a one-page tabular summary for each option, based on the Project Appraisal Balance Sheet (PABS) from the NRA PAG. Each row of the PABS table corresponds to one of the appraisal subcriteria. Where an estimate of the monetised value of the impact is available, this is presented, with such qualitative or quantitative supporting information as can reasonably be fitted into a small space. The right-hand columns give the score for that scheme option against each subcriterion.

Summary statistics include the total length of the scheme, the estimated total cost of the scheme, the Benefit-to-Cost Ratio (BCR) of the monetised elements only, and the overall score from the multi-criteria analysis.

The scheme sheet and PABS for each of the route options appraised for the North Region is presented in Pages 106 to 265.

Figures 7.3 to 7.8 indicate in graphical format the various types of options appraised:-

- Figure 7.3 indicates the Type 1 single carriageway options included in the appraisals;
- Figure 7.4 indicates the Type 2 single carriageway options included in the appraisals;
- Figure 7.5 indicates the Type 3 single carriageway options included in the appraisals;
- Figure 7.6 indicates the Type 1 dual carriageway options included in the appraisals;
- Figure 7.7 indicates the Type 2 dual carriageway options included in the appraisals;
- Figure 7.8 indicates the Type 3 dual carriageway options included in the appraisals.

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Figure 7.3 - S2 Type 1 Options	National Secondary Road Needs Study	Drawn by: S. Khan		Project No. MDT0436		
		Checked by: A. Grady		File Ref.		
	Approved by: xxx		MDT0436Mi0075D02			
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			Date: 11/11/2010		Mi0075	D02
		<b>Notes</b> <div>1. This drawing is the property of RPS Group Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent.</div> <div>2. All levels are referred to Ordnance Datum, Malin Head.</div> <div>3. Ordnance Survey Ireland Licence EN 0005010</div> <div>©Copyright Government of Ireland.</div>				

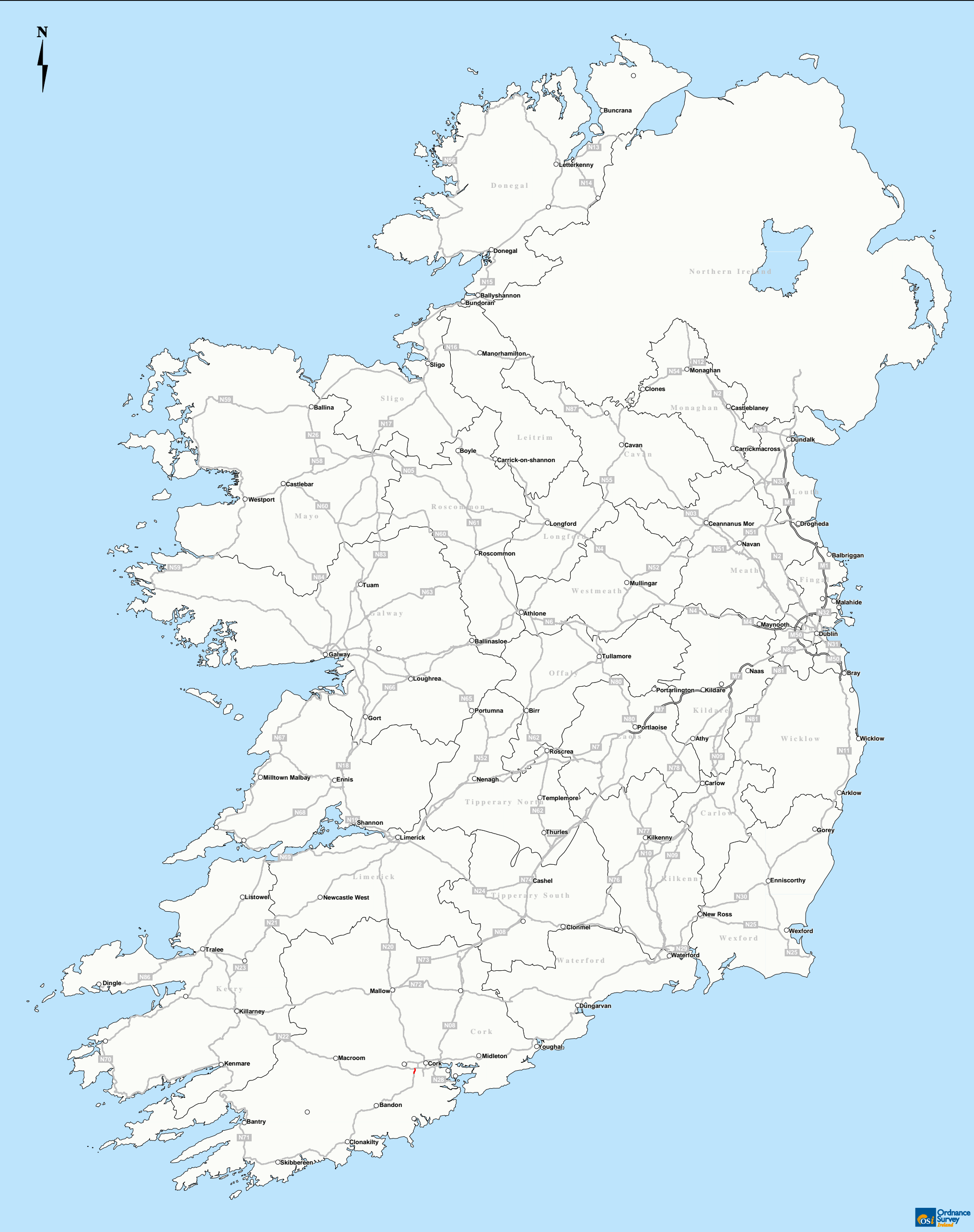



Title	Project	Issue Details				
Figure 7.4 - S2 Type 2 Options	National Secondary Road Needs Study	Drawn by: S. Khan		Project No. MDT0436		
		Checked by: A. Grady		File Ref.		
	Approved by: xxx		MDT0436Mi0076D02			
	<div><div><div><div><div></div><div>NRA</div><div>National Roads Authority</div><div>An Údarás um Boithre Náisiúnta</div></div></div><div><div>RPS</div></div><div><div>West Pier Business Campus, Dun Laoghaire, Co. Dublin Ireland</div><div><div>T +353 (0)1 2884499 F +353 (0)1 2835676 E ireland@rpsgroup.com W rpsgroup.com/ireland</div></div></div></div></div>		Scale: 1: 650,000 @ A1		Drawing No.	Rev.
			Date: 11/11/2010		Mi0076	D02
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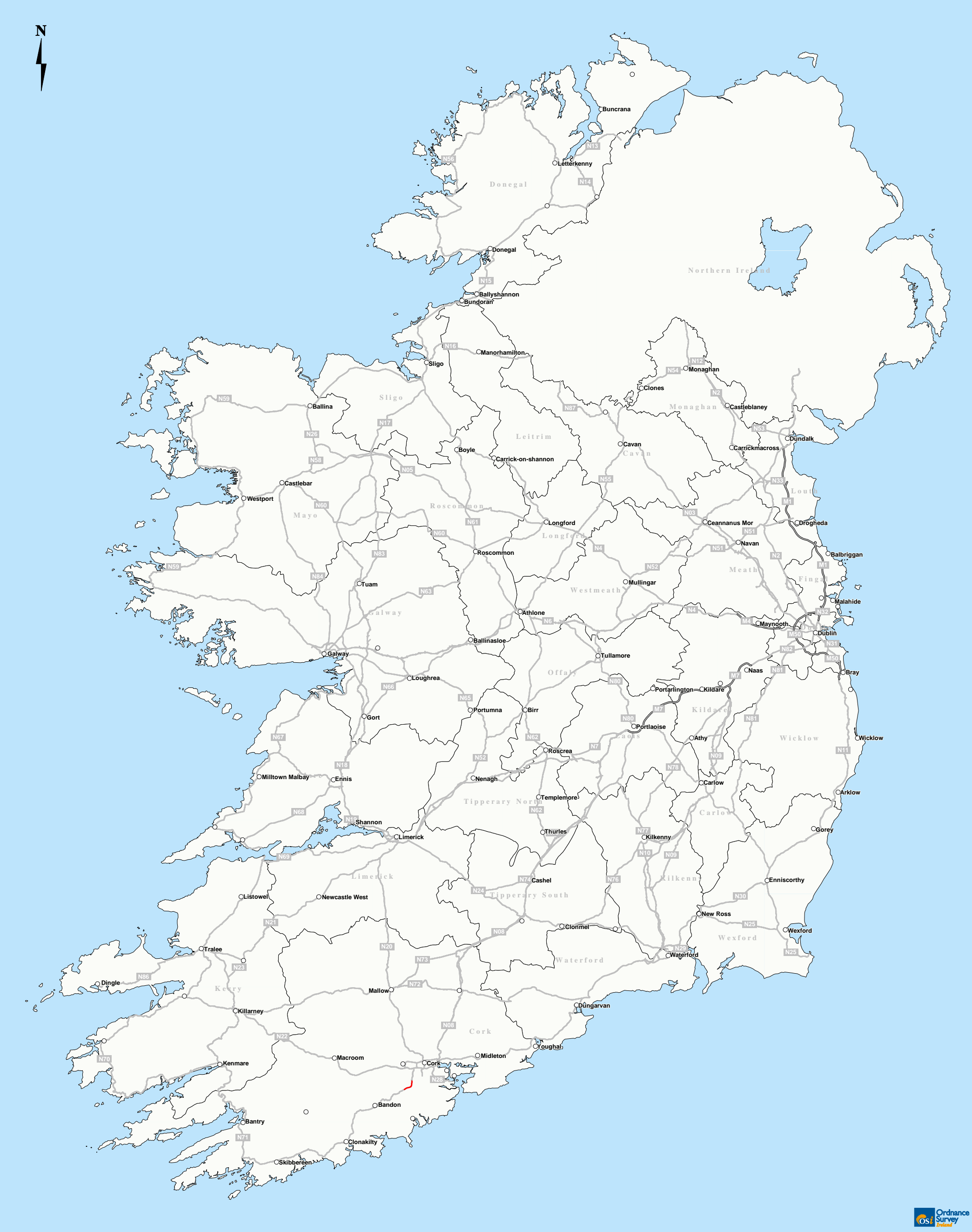




Title	Project	Issue Details				
Figure 7.5 - S2 Type 3 Options	National Secondary Road Needs Study	Drawn by: S. Khan		Project No. MDT0436		
		Checked by: A. Grady		File Ref.		
	Approved by: xxx		MDT0436MI0077D02			
	<div><div><div><div><div></div><div>NRA</div><div>National Roads Authority</div><div>An tUdarás um Bóithre Náisiúnta</div></div></div><div><div>RPS</div></div><div><div>West Pier Business Campus, Dun Laoghaire, Co. Dublin Ireland</div><div><div>T +353 (0)1 2884499 F +353 (0)1 2835676 E ireland@rpsgroup.com W rpsgroup.com/ireland</div></div></div></div></div>		Scale: 1: 650,000 @ A1		Drawing No.	Rev.
			Date: 11/11/2010		MI0077	D02
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Title	Project	Issue Details			
Figure 7.6 - Type 1 Dual	National Secondary Road Needs Study	Drawn by: S. Khan		Project No. MDT0436	
		Checked by: A. Grady		File Ref.	
	Approved by: xxx		MDT0436Mi0078D02		
	Scale: 1: 650,000 @ A1		Drawing No.	Rev.	
	Date: 11/11/2010		Mi0078	D02	
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Title	Project	Issue Details		
Figure 7.7 - Type 2 Dual	National Secondary Road Needs Study	Drawn by:	S. Khan	
		Checked by:	A. Grady	
		Approved by:	xxx	
	Project No.		MDT0436	
	File Ref.		MDT0436Mi0079D02	
	Scale:	1: 650,000 @ A1		Drawing No.
Date:	11/11/2010		Mi0079	D02
<div><div><div><div>NRA National Roads Authority <i>An Údarás um Bóithre Náisiúnta</i></div></div><div><div>RPS</div></div><div>West Pier Business Campus, Dun Laoghaire, Co. Dublin Ireland</div><div>T +353 (0)1 2884499 F +353 (0)1 2835676 E ireland@rpsgroup.com W rpsgroup.com/ireland</div></div></div>		<b>Notes</b> <div>1. This drawing is the property of RPS Group Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent. 2. All levels are referred to Ordnance Datum, Malin Head. 3. Ordnance Survey Ireland Licence EN 0005010 ©Copyright Government of Ireland.</div>		



Title	Project	Issue Details				
Figure 7.8 - Type 3 Dual	National Secondary Road Needs Study	Drawn by: S. Khan		Project No. MDT0436		
		Checked by: A. Grady		File Ref.		
	Approved by: xxx		MDT0436M0080D02			
	<div><div><div><div><div></div><div>NRA</div><div>National Roads Authority</div><div>An Údarás um Bóithre Náisiúnta</div></div></div><div><div>RPS</div></div><div><div>West Pier Business Campus, Dun Laoghaire, Co. Dublin Ireland</div><div><div>T +353 (0)1 2884499 F +353 (0)1 2835676 E ireland@rpsgroup.com W rpsgroup.com/ireland</div></div></div></div></div>		Scale: 1: 650,000 @ A1		Drawing No.	Rev.
			Date: 11/11/2010		M0080	D02
		<b>Notes</b> 1. This drawing is the property of RPS Group Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent. 2. All levels are referred to Ordnance Datum, Malin Head. 3. Ordnance Survey Ireland Licence EN 0005010 ©Copyright Government of Ireland.				



N51.d.1.T2			Name: Athboy to Delvin (N52)					Type: S2 Type 2		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118357	5.666	67.5	6.8	4.1	3304	5.434	10.988	2.847	0.560	1.700
118362	5.031	70	5.3	2.6	3304	4.900	9.153	2.184	0.437	1.509
Athboy to Delvin (N52)	Total 10.697					Total 10.334				
<p>Notes:</p> <p>The horizontal and vertical alignment is extremely poor over this section and most of the corridor operates under a speed limit of 80kph. The route is extremely bendy and is very narrow in places. There are a number of very bad bends and chicanes. The route is also hilly in places and is sometimes hilly on bad bends. There is no overtaking opportunity of note along this section. There is a speed limit restriction north of Stonestown but it is proposed to continue this upgrade through this speed restricted area. There is an accident black spot east of Clonmaskill.</p> <p>This route crosses the Stoneyford River to the east of Delvin. This river is environmentally designated as a Special Area of Conservation. The existing bridge is wide enough to accommodate this upgrade.</p> <p>3 No. stream crossings.</p> <p>Add premium of 10 to construction and land costs to take some account of extremely bendy nature if this section.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p>						TOTAL:	20.141	5.031	0.997	3.209
						Any special costs	2.014	5.031	0.000	0.000
						Grand Total	36.423			

PABS Appraisal Summary Table - N51d.1.T2						
Scheme Option: N51 Athboy to Delvin (N52)		Description: 10.334km upgrade to S2 Type 2 standard	Problems Identified:		Budget Cost (million) €6.42	
			<ul style="list-style-type: none"> <li>Lane width &lt; 3m for majority of the corridor</li> <li>Sight distances are poor throughout corridor for both 85kph and 100kph design standards.</li> </ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		65 households affected in 2025 -8 tonnes of carbon saved in 2025	-€0.133 €0.000	No	3.4
	Noise and vibration Landscape and visual quality	Not assessed	65 households affected in 2025	-€0.228	No	2.9
	Biodiversity	The proposed realignment will impact directly on the River Boyne and River Black Water SAC (002299).			Not assessed	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including three Earthworks, a Castle – Tower House, a Mill, a Ringfort and five NIAH Structures.			Yes	2.5
	Landuse Water resources	The proposed realignments will primarily be within Agricultural Areas. The proposed realignments in this section of the N51 will cross the Stonyford River which is designated under the River Boyne and River Black Water SAC (002299).			No	3.0
Safety	Accident reduction Security		-1.6 accidents saved in 2025	-€4.337	Yes	4.0
Economy	Transport Efficiency and Effectiveness	No additional facility for walkers and cyclists is to be provided.				2.6
			231 vehicle-hours per day in travel time saved in 2025	Non-work Work €14.549 €13.010 €0.000		4.0
				PVC Residual value €24.593 €2.487		5.7
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	€1.301		6.1
	Funding	Not assessed				4.0
	Vulnerable groups	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		0 CLAR zones experience improved access to Hub/Gateway			4.0
	Transport integration					5.0
Integration	Land-use integration					4.3
	Geographical integration					4.3
	Integration with other government policies					4.2
						4.0
				NPV	€2.057	Total
				BCR	1.08	Red Flagged
						4.5
						Yes

N51.d.1.T3			Name: Athboy to Delvin (N52)				Type: S2 Type 3			
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118357	5.666	67.5	3.1	0.9	3308	5.615	6.703	0.993	0.284	1.700
118362	5.031	70	2.2	0.4	3307	5.011	6.808	1.399	0.373	1.509
Athboy to Delvin (N52)	Total 10.697					Total 10.626				
<b>Notes:</b> The horizontal and vertical alignment is extremely poor over this section and most of the corridor operates under a speed limit of 80kph. The route is extremely bendy and is very narrow in places. There are a number of very bad bends and chicanes. The route is also hilly in places and is sometimes hilly on bad bends. There is no overtaking opportunity of note along this section. There is a speed limit restriction north of Stonestown but it is proposed to continue this upgrade through this speed restricted area. There is an accident black spot east of Clonmash. This route crosses the Stoneyford River to the east of Delvin. This river is environmentally designated as a Special Area of Conservation. The existing bridge is wide enough to accommodate this upgrade. 3 No. stream crossings. Add premium of 10 to construction and land costs to take some account of extremely bendy nature if this section. Low Traffic Good Subgrade – Maintenance Category 1 IRI 0 to 2.5 – Maintenance Bracket 1						TOTAL:	13.511	2.392	0.656	3.209
						Any special costs	1.351	0.239	0.000	0.000
						Grand Total	21.358			



PABS Appraisal Summary Table - N51d.1.T3						
Scheme Option: N51 Athboy to Delvin (N52)		Description: 10.626km upgrade to S2 Type 3 standard	Problems Identified:		Budget Cost (million) €1.36	
			<ul style="list-style-type: none"> <li>Lane width &lt; 3m for majority of the corridor</li> <li>Sight distances are poor throughout corridor for both 85kph and 100kph design standards.</li> </ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		65 households affected in 2025	-€0.071	No	3.4
	Noise and vibration		-5 tonnes of carbon saved in 2025	€0.000		
	Landscape and visual quality	Not assessed	65 households affected in 2025	-€0.078	No	3.3
	Biodiversity	The proposed realignment will impact directly on the River Boyne and River Black Water SAC (002299).			Not assessed	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including three Earthworks, a Castle – Tower House, a Mill, a Ringfort and five NIAH Structures.			Yes	2.5
Landuse					No	3.0
	Water resources	The proposed realignments will primarily be within Agricultural Areas. The proposed realignments in this section of the N51 will cross the Stonyford River which is designated under the River Boyne and River Black Water SAC (002299).			No	4.0
					Yes	2.5
Safety	Accident reduction		-0.9 accidents saved in 2025	-€10.351		1.0
	Security	No additional facility for walkers and cyclists is to be provided.				4.0
Economy	Transport Efficiency and Effectiveness		56 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €3.526 €3.153 €0.000		4.7
				PVC Residual value €13.967 €1.012		
	Other economic impacts	Imperfect competition effects		€0.315		4.9
Accessibility and Social Inclusion	Funding	Not assessed				4.0
	Vulnerable groups	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
Integration	Deprived geographic areas		0 CLAR zones experience improved access to Hub/Gateway			4.0
	Transport integration					5.0
	Land-use integration					4.3
	Geographical integration					4.2
	Integration with other government policies					4.0
				NPV	-€16.461	Total
				BCR	-0.18	Red Flagged
						4.0
						Yes

N52.d.1.T2			Name: Kells (N3) to Delvin (N51)					Type: S2 Type 2		
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118380	3.797	70	4.4	2.6	3305	3.698	6.908	1.648	0.330	1.139
118379	1.877	75	2.3	0.4	3304	1.869	2.824	0.470	0.100	0.563
118385	3.191	75	2.3	0.4	3304	3.178	4.802	0.799	0.169	0.957
Break at Clonmellon						0.000				
118388	0.256	75	2.3	0.4	3304	0.255	0.385	0.064	0.014	0.077
118387	6.917	70.5	4.9	2.2	3304	6.765	12.398	2.895	0.582	2.075
Kells (N3) to Delvin (N51)	Total 16.038					Total 15.765				
<p>Notes:</p> <p>This Route is tree lined for the majority of its length and generally to Type 3 width or better however it is very bendy and hilly in places. While there are several overtaking sections, south of Kilrush Lower and either side of Johnsbrough Cross Roads, they would be greatly improved by improving the vertical alignment.</p> <p>The existing stone bridge south of Clonmellon is narrow but should be adequate for this upgrade.</p> <p>There is one NHA south of this Route at Drewstown Great and another north of this Route at Newtown.</p> <p>This route crosses the Stonyford and Athboy Rivers to the east of Delvin. These rivers are environmentally designated as a Special Area of Conservation. The existing bridges are wide enough to accommodate this upgrade.</p> <p>The existing stone Bridge over the stream to the south of Clonmellon is narrow and will need to be widened / replaced (add cost).</p> <p>The existing Stonyford Bridge over the Stonyford River appears to be wide enough for this upgrade.</p> <p>The existing stone Burkes Bridge over the Tributary to the Stonyford River is narrow and will need to be widened / replaced (add cost).</p> <p>5 No stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 2.6 to 3.5 – Maintenance Bracket 2</p>						TOTAL:	27.318	5.877	1.194	4.811
						Any special costs	0.800	0.000	0.000	0.000
						Grand Total	40.000			



PABS Appraisal Summary Table - N52d.1.12						
Scheme Option: N52 Kells (N3) to Delvin (N51)	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Score	
					Red Flag	Score
<b>Description:</b> 15.765km upgrade to S2 Type 2 standard  <b>Problems Identified:</b> <ul style="list-style-type: none"> <li>• Lane width &lt; 3m for 31% of the corridor and less than 3.5m for 68% of the corridor. These deficiencies occur west of Kells and from the R154 junction to Delvin.</li> <li>• Intermittent sightline problems along the route for 85kph design standard, particularly west of Kells and from the junction of the R154 to Delvin.</li> <li>• Generally the corridor would not satisfy the sightline requirements for the 100kph design standard.</li> </ul>	Air Quality		79 households affected in 2025 -7 tonnes of carbon saved in 2025	-€0.137 €0.000	No	3.4
	Noise and vibration Landscape and visual quality		79 households affected in 2025	-€0.146	No	3.3
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will impact directly on the River Boyne and River Blackwater SAC (002299) when crossing the Ayrbog River and again when crossing the Stonyford River. Potential exists for indirect impacts to Girley Bog NHA (001580) and Lough Sheek pNHA (000556). No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Souterrian, five NIAH Structures, Architectural Fragments and two Earthworks.			Yes	2.5
	Landuse Water resources	The proposed realignments will primarily be within Agricultural Areas. The proposed realignment will impact directly on the River Boyne and River Blackwater SAC (002299) when crossing the Ayrbog River and again when crossing the Stonyford River. Potential exists for indirect impacts to Lough Sheek pNHA (000556).			No	3.0
	Accident reduction Security	No additional facility for walkers and cyclists is to be provided.	1.3 accidents saved in 2025	€9.177	No	4.0
	Transport Efficiency and Effectiveness		225 vehicle-hours per day in travel time saved in 2025	€5.719 €18.659 €0.000	Yes	2.5
	Other economic impacts Funding	Not assessed	Imperfect competition effects	€26.290 €2.057 €1.866		6.8
	Vulnerable groups Deprived geographic areas	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Transport integration Land-use integration Geographical integration Integration with other government policies		1 CLAR zones experience improved access to Hub/Gateway			4.0
<b>Accessibility and Social Inclusion</b>						5.0
						7.0
<b>Integration</b>						4.4
						4.5
				NPV	€10.904	<b>Total</b>
				BCR	1.41	<b>Red Flagged</b>
						<b>5.5</b>
						Yes

N52.d.1.T3			Name: Kells (N3) to Delvin (N51)					Type: S2 Type 3		
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118380	3.797	70	1.8	0.4	3307	3.782	5.138	1.056	0.281	1.139
118379	1.877	75	0.6	0.0	3305	1.877	2.540	0.522	0.139	0.563
118385	3.191	75	0.6	0.0	3305	3.191	4.318	0.887	0.236	0.957
Break at Clonmellon						0.000				
118388	0.256	75	0.6	0.0	3305	0.256	0.346	0.071	0.019	0.077
118387	6.917	70.5	1.9	0.3	3307	6.896	9.361	1.923	0.512	2.075
Kells (N3) to Delvin (N51)	Total 16.038					Total 16.002				
<p>Notes:</p> <p>This Route is tree lined for the majority of its length and generally to Type 3 width or better however it is very bendy and hilly in places. While there are several overtaking sections, south of Kilrush Lower and either side of Johnsbrook Cross Roads, they would be greatly improved by improving the vertical alignment.</p> <p>The existing stone bridge south of Clonmellon is narrow but should be adequate for this upgrade.</p> <p>There is one NHA south of this Route at Drewstown Great and another north of this Route at Newtown.</p> <p>This route crosses the Stonyford and Athboy Rivers to the east of Delvin. These rivers are environmentally designated as a Special Area of Conservation. The existing bridges are wide enough to accommodate this upgrade.</p> <p>The existing Stonyford Bridge over the Stonyford River appears to be wide enough for this upgrade.</p> <p>The existing stone Burkes Bridge over the Tributary to the Stonyford River is narrow and will need to be widened / replaced (add cost).</p> <p>5 No stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 2.6 to 3.5 – Maintenance Bracket 2</p>						TOTAL:	21.704	4.459	1.188	4.811
						Any special costs	0.300	0.000	0.000	0.000
						Grand Total	32.462			

PABS Appraisal Summary Table - N52d.1.T3						
Scheme Option: N52 Kells (N3) to Delvin (N51)	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Score	
					Red Flag	Score
<b>Description:</b> 16.002km upgrade to S2 Type 3 standard  <b>Problems Identified:</b> <ul style="list-style-type: none"> <li>• Lane width &lt; 3m for 31% of the corridor and less than 3.5m for 68% of the corridor. These deficiencies occur west of Kells and from the R154 junction to Delvin.</li> <li>• Intermittent sightline problems along the route for 85kph design standard, particularly west of Kells and from the junction of the R154 to Delvin.</li> <li>• Generally the corridor would not satisfy the sightline requirements for the 100kph design standard.</li> </ul>	Air Quality		79 households affected in 2025 -5 tonnes of carbon saved in 2025	-€0.080 €0.000	No	3.5
	Noise and vibration Landscape and visual quality		79 households affected in 2025	-€0.012	No	3.9
	Biodiversity		Not assessed		Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will impact directly on the River Boyne and River Blackwater SAC (002299) when crossing the Ayrbay River and again when crossing the Stonyford River. Potential exists for indirect impacts to Girley Bog NHA (001580) and Lough Shek pNHA (000556). No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Souterrian, five NIAH Structures, Architectural Fragments and two Earthworks.			Yes	2.5
	Landuse Water resources	The proposed realignments will primarily be within Agricultural Areas. The proposed realignment will impact directly on the River Boyne and River Blackwater SAC (002299) when crossing the Ayrbay River and again when crossing the Stonyford River. Potential exists for indirect impacts to Lough Shek pNHA (000556).			No	4.0
	Accident reduction Security	No additional facility for walkers and cyclists is to be provided.	0.5 accidents saved in 2025	€0.328		4.1
	Transport Efficiency and Effectiveness		97 vehicle-hours per day in travel time saved in 2025	Non-work €3.553 Active travel €9.148 €0.000		4.9
	Other economic impacts Funding		Imperfect competition effects	PVC €20.682 Residual €1.588 value €0.915		5.8
	Vulnerable groups Deprived geographic areas	Not assessed Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Transport integration Land-use integration Geographical integration Integration with other government policies		1 CLAR zones experience improved access to Hub/Gateway			4.0
<b>Accessibility and Social Inclusion</b>						5.0
						7.0
<b>Integration</b>						4.4
						4.5
				NPV	-€5.243	<b>Total</b>
				BCR	0.75	<b>Red Flagged</b>
						<b>5.1</b>
						Yes

N52.e.1.T1			Name: Delvin (N51) to Mullingar (N4)						Type: S2 Type 1		
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
118390	2.507	75	N/A	0.0	3301	2.507	7.772	2.256	0.326	0.752	
118389	3.712	63	N/A	0.0	3301	3.712	11.507	3.341	0.483	1.114	
113372	6.980	63	N/A	0.0	3301	6.980	21.638	6.282	0.907	2.094	
107943	4.030	63 (5100: NS Urban)	N/A	0.0	3301	4.030	12.493	3.627	0.524	1.209	
Delvin to Mullingar	Total 17.229					Total 17.229					
<p>Notes:</p> <p>This route is to varying standards. Through Gartenstown there is a 3.145km section to Type 1 standard. This section is not proposed to be upgraded here Northeast of Macetown there is a 2.140km section to between Type 2 and Type 1 standard. This section may require simply a widening to Type 1 (reduce cost). Elsewhere the Route is very bendy, hilly and narrow in places with little of no overtaking opportunity. There are also a number of bad bends between the Ballynacor Cross Roads and Cloghan, and an Accident Black Spot at Reynella.</p> <p>This route crosses the Deel River to the west of Delvin. This river is environmentally designated as a Special Area of Conservation. The existing Ballynacor Bridge over the Deel River appears to be wide enough for this upgrade.</p> <p>8 No stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p>						TOTAL:	53.410	15.506	2.240	5.169	
						Any special costs	-1.658 -9.750	-0.481 -2.830	-0.409	-0.944	
						Grand Total	60.253				

PABS Appraisal Summary Table - N52e.1.11						
Scheme Option: N52 Delvin (N51) to Mullingar (N4)		Description: 17.229km upgrade to S2 Type 1 standard		Problems Identified:		Budget Cost (million)  €60.25
				<ul style="list-style-type: none"><li>• Lane width &lt; 3m for 63% of the corridor and less than 3.5m for 87% of the corridor. These deficiencies occur west of Kells and from the R154 junction to Delvin.</li><li>• Intermittent sightline problems along the route for 85kph design standard, particularly west of Mullingar.</li><li>• Generally the corridor would not satisfy the sightline requirements for the 100kph design standard.</li></ul>		
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		88 households affected in 2025 -46 tonnes of carbon saved in 2025	-€0.781 -€0.002	No	2.0
	Noise and vibration Landscape and visual quality		88 households affected in 2025	-€1.115	No	1.1
	Biodiversity	Not assessed			Not assessed	4.0
		The proposed realignment will impact directly on the River Deal which is designated under the River Boyne and River Blackwater SAC (002299). May impact indirectly on Lough Sheever Fen/Slevin's Lough Complex pNHA (000690) and Wooddown Bog NHA (000694).			Yes	2.5
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Bridge, two Castles, four Ringforts, Souterrain, three NIAH Structures, Earthworks and a Castle – Motte & Bailey.			No	3.0
	Landuse	The proposed realignments will primarily be within Agricultural Areas.				
Safety	Water resources	The proposed realignment will impact directly on the River Deal which is designated under the River Boyne and River Blackwater SAC (002299).			No	4.0
	Accident reduction		11.4 accidents saved in 2025		Yes	2.5
	Security	No additional facility for walkers and cyclists is to be provided.		€49.593		7.0
Economy	Transport Efficiency and Effectiveness		1680 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel PVC Residual value €95.937 €104.044 €0.000 €46.305 €3.618		7.0
	Other economic impacts		Imperfect competition effects	€10.404		7.0
Accessibility and Social Inclusion	Funding	Not assessed				4.0
	Vulnerable groups Deprived geographic areas	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
Integration			5 CLAR zones experience improved access to Hub/Gateway			4.9
	Transport integration					6.0
	Land-use integration					7.0
	Geographical integration					4.3
	Integration with other government policies					4.5
				NPV	€215.395	Total
				BCR	5.65	Red Flagged
						6.0
						Yes

**Problems Identified:**

- Lane width < 3m for 63% of the corridor and less than 3.5m for 87% of the corridor. These deficiencies occur west of Kells and from the R154 junction to Delvin.
- Intermittent sightline problems along the route for 85kph design standard, particularly west of Mullingar.
- Generally the corridor would not satisfy the sightline requirements for the 100kph design standard.



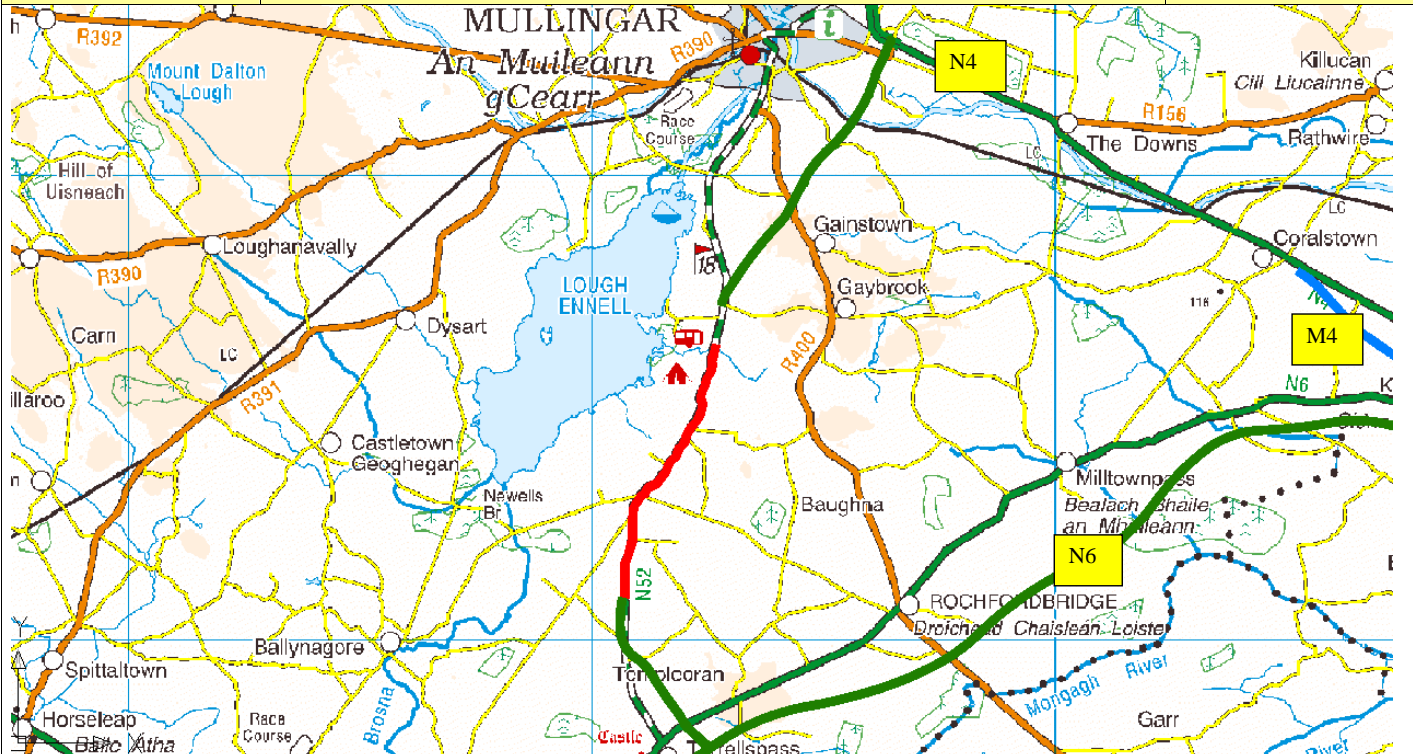
N52.e.1.T2			Name: Delvin (N51) to Mullingar (N4)					Type: S2 Type 2			
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
118390	2.507	75	2.7	0.5	3303	2.494	3.772	0.628	0.133	0.752	
118389	3.712	63	8.3	7.5	3306	3.434	7.766	2.174	0.415	1.114	
113372	6.980	63	8.3	7.5	3306	6.457	14.604	4.089	0.781	2.094	
120391 (Former link no. 107943)	3.480 (Former link length 4.030)	63 (5100: NS Urban)	8.3	7.5	3306	3.219	7.281	2.038	0.389	1.044	
Delvin to Mullingar	Total 17.229					Total 15.604					
<p>Notes:</p> <p>This route is to varying standards. Through Gartenstown there is a 3.145km section to Type 1 standard. This section is not proposed to be upgraded here. Northeast of Macetown there is another 2.140km section to between Type 2 and Type 1 standard. This section is not proposed to be upgraded here. Elsewhere the Route is very bendy, hilly and narrow in places with little of no overtaking opportunity. There are also a number of bad bends between the Ballynacor Cross Roads and Cloghan, and an Accident Black Spot at Reynella.</p> <p>This route crosses the Deel River to the west of Delvin. This river is environmentally designated as a Special Area of Conservation. The existing Ballynacor Bridge over the Deel River appears to be wide enough for this upgrade.</p> <p>8 No stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p> <p>Link 107943 split @ approx (246225, 254582)</p>						TOTAL:	33.424	8.929	1.718	5.004	
						Any special costs	-6.302 -4.288	-1.684 -1.146	-0.324 -0.220	-0.944 -0.642	
						Grand Total	33.525				

PABS Appraisal Summary Table - N52e.1.T2						
Scheme Option: N52 Delvin (N51) to Mullingar (N4)	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Score	
					Red Flag	Score
<b>Description:</b> 15.604km upgrade to S2 Type 2 standard	Environment	Air Quality	88 households affected in 2025 -32 tonnes of carbon saved in 2025	-€0.461 -€0.001	No	1.9
		Noise and vibration Landscape and visual quality	88 households affected in 2025	-€0.357	No	2.4
		Biodiversity	Not assessed		Not assessed	4.0
		Cultural Heritage / archaeology	The proposed realignment will impact directly on the River Deal which is designated under the River Boyne and River Blackwater SAC (002299). May impact indirectly on Lough Sheever Fen/Slevin's Lough Complex pNHA (000690) and Wooddown Bog NHA (000694).		Yes	2.5
	Safety	Landuse	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Bridge, two Castles, four Ringforts, Souterrain, three NIAH Structures, Earthworks and a Castle – Motte & Bailey.		No	3.0
		Water resources	The proposed realignments will primarily be within Agricultural Areas.		No	4.0
	Economy	Accident reduction	The proposed realignment will impact directly on the River Deal which is designated under the River Boyne and River Blackwater SAC (002299).		Yes	2.5
		Security	No additional facility for walkers and cyclists is to be provided.	€0.448		4.1
	Accessibility and Social Inclusion	Transport Efficiency and Effectiveness	1169 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel PVC Residual value		7.0
		Other economic impacts	Imperfect competition effects			7.0
		Funding	Not assessed			4.0
		Vulnerable groups Deprived geographic areas	Some of the route corridor is within 4km of a settlement of 1,500 people or more.			4.0
Integration	Transport integration	Land-use integration	4 CLAR zones experience improved access to Hub/Gateway			5.0
		Geographical integration				6.0
		Integration with other government policies				7.0
						4.3
						4.5
				NPV	€130.947	
				BCR	5.90	
				Total		5.8
				Red Flagged		Yes

**Budget Cost (million) €33.53**

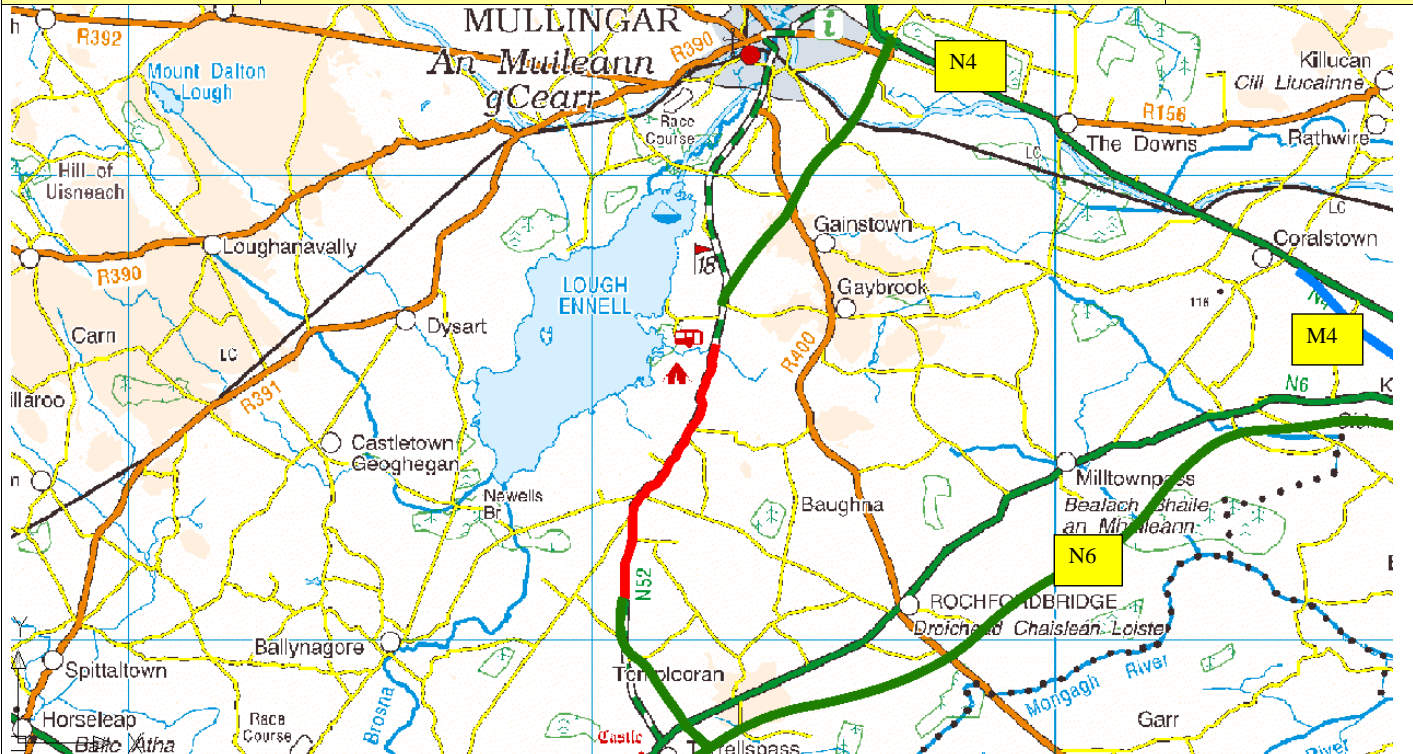
**Problems Identified:**

- Lane width < 3m for 63% of the corridor and less than 3.5m for 87% of the corridor. These deficiencies occur west of Kells and from the R154 junction to Delvin.
- Intermittent sightline problems along the route for 85kph design standard, particularly west of Mullingar.
- Generally the corridor would not satisfy the sightline requirements for the 100kph design standard.

N52.f.1.T1			Name: Mullingar(N4) Tyrrellspass (N6)					Type: S2 Type 1			
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
120392 (Former link no. 119568)	0.380 (Former link length 1.425)	74	N/A	0.0	3301	0.380	1.178	0.342	0.049	0.114	
118399	4.190	65	N/A	0.0	3301	4.190	12.989	3.771	0.545	1.257	
120394 (Former link no. 62042)	1.302 (Former link length 3.730)	73.5	N/A	0.0	3301	1.302	4.036	1.172	0.169	0.391	
Mullingar (N4) to Tyrrellspass (N6)	Total 5.872					Total 5.872					
<p>Notes:</p> <p>Much of the section from Mullingar to Tyrrellspass has been recently upgraded. From Mullingar to Prebaun has been upgraded as part of the N52 Mullingar Bypass and N52 Mullingar to Belvedere schemes. To the south the route has been upgraded as far as Templeoran North as part of the N6 Kinnegad to Athlone scheme. The remainder of this route is very bendy, hilly and narrow with no overtaking opportunities. It also has lots of bad bends.</p> <p>An "N52 Carrick Bridge to Clonfad" scheme similar to that proposed here is currently at preliminary design stage.</p> <p>It is noted that the N52 does not have right of way at Dalystown and also that there is a 60kph speed limit at Dalystown. It is therefore proposed that this option bypass Dalystown. The stoneford bridge may need to be widened / replaced by this scheme or it may also be bypassed.</p> <p>Lough Ennell to the west of this route is both an SPA and an NHA.</p> <p>4 No stream crossings.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p> <p>Split Link 119568 @ approx (242664, 246392) shortened from 1.425km</p> <p>Split Link 62042 @ approx (240702, 240933) shortened from 3.730km</p>							TOTAL:	18.203	5.285	0.763	1.762
							Any special costs	0.000	0.000	0.000	0.000
							Grand Total	26.013			



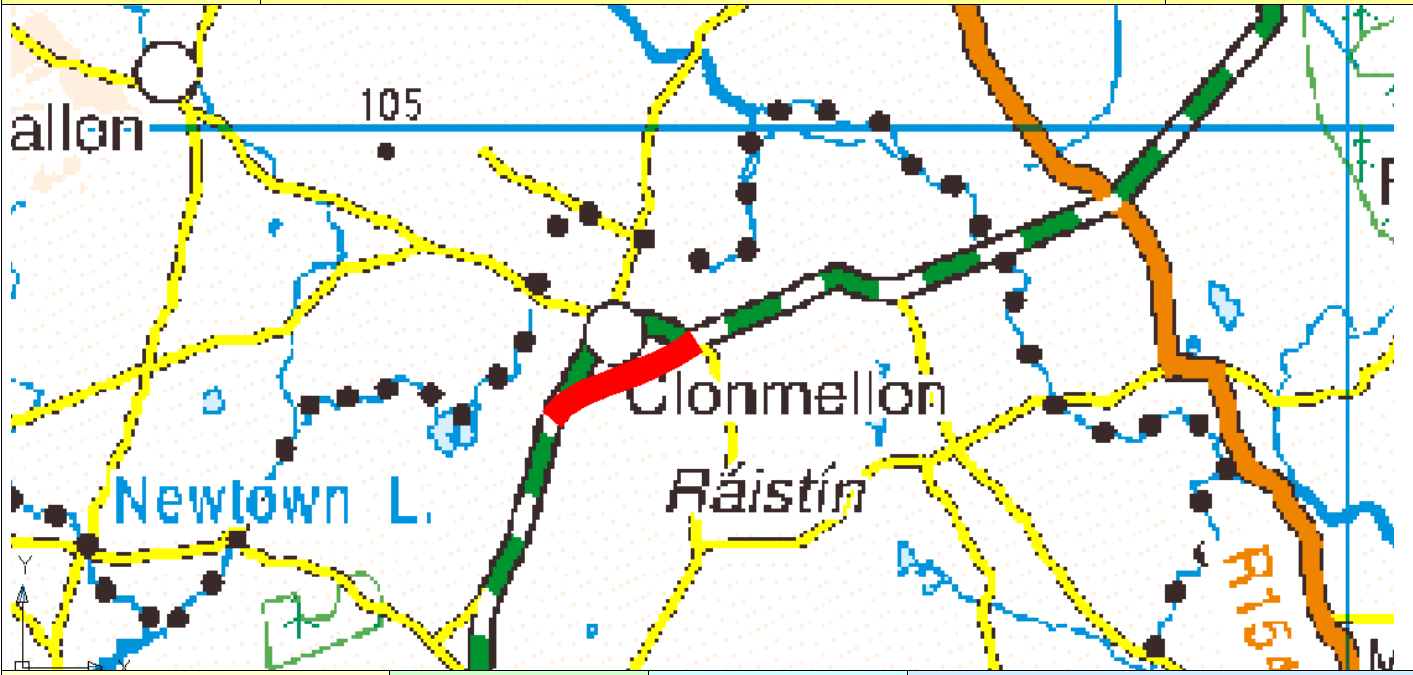
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N52.f.1.T2			Name: Mullingar(N4) Tyrrellspass (N6)					Type: S2 Type 2			
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
120392 (Former link no. 119568)	0.380 (Former link length1.425)	74	2.9	0.6	3304	0.378	0.599	0.111	0.023	0.114	
118399	4.190	65	7.7	5.1	3305	3.976	8.523	2.325	0.450	1.257	
120394 (Former link no. 62042)	1.302 (Former link length3.730)	73.5	3.7	0.9	3303	1.290	2.096	0.406	0.084	0.391	
Mullingar (N4) to Tyrrellspass (N6)	Total 5.872					Total 5.644					
<p>Notes:</p> <p>Much of the section from Mullingar to Tyrrellspass has been recently upgraded. From Mullingar to Prebaun has been upgraded as part of the N52 Mullingar Bypass and N52 Mullingar to Belvedere schemes. To the south the route has been upgraded as far as Templeoran North as part of the N6 Kinnegad to Athlone scheme. The remainder of this route is very bendy, hilly and narrow with no overtaking opportunities. It also has lots of bad bends. The upgrades north and south of this proposed upgrade are to Type 1 standard. This proposal to upgrade to Type 2 standard would need to be carefully considered in this context at design stage.</p> <p>An "N52 Carrick Bridge to Clonfad" scheme similar to that proposed here is currently at preliminary design stage.</p> <p>It is noted that the N52 does not have right of way at Dalystown and also that there is a 60kph speed limit at Dalystown. It is therefore proposed that this option bypass Dalystown. The stoneford bridge may need to be widened / replaced by this scheme or it may also be bypassed.</p> <p>Lough Ennell to the west of this route is both an SPA and an NHA.</p> <p>4 No stream crossings.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p> <p>Split Link 119568 @ approx (242664, 246392) shortened from 1.425km</p> <p>Split Link 62042 @ approx (240702, 240933) shortened from 3.730km</p>						TOTAL:	11.218	2.843	0.557	1.762	
						Any special costs	0.200 1.931	0.496	0.000	0.000	
						Grand Total	19.007				

PABS Appraisal Summary Table - N52L1.T2							
Scheme Option: N52 Mullingar(N4) Tyrrellspass (N6)		Description: 5.644km upgrade to S2 Type 2 standard	Problems Identified: • Lane width < 3m for 63% of the corridor and less than 3.5m for 80% of the corridor. These deficiencies occur generally along the corridor. • Intermittent sightline problems along the route for 85kph design standard • Generally the corridor would not satisfy the sightline requirements for the 100kph design standard.			Budget Cost (million) €19.01	
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score	
Environment	Air Quality		50 households affected in 2025	-€0.002	No	4.0	
	Noise and vibration		-1 tonnes of carbon saved in 2025	€0.000	No	3.7	
	Landscape and visual quality	Not assessed	50 households affected in 2025	-€0.031	Not assessed	4.0	
	Biodiversity	The proposed realignment may impact indirectly on Lough Ennell SAC and pNHA (000685).			Yes	2.5	
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Ringfort, a Church, three Earthworks and four NIAH Structures.			No	3.0	
	Landuse	The proposed realignments will primarily be within Agricultural Areas with one section are through existing Artificial Surfaces and one section is through a Forest Semi Natura Area.			No	4.0	
Safety	Water resources	The proposed realignment may impact indirectly on Lough Ennell SAC and pNHA (000685).			Yes	2.5	
	Accident reduction		2.0 accidents saved in 2025	€2.211		5.4	
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0	
	Transport Efficiency and Effectiveness		432 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €18.177 €30.838 €0.000		7.0	
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	PVC Residual value €12.700 €1.064			
	Funding	Not assessed		€3.084		7.0	
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0	
	Deprived geographic areas		2 CLAR zones experience improved access to Hub/Gateway			4.3	
	Transport integration					5.0	
	Land-use integration					7.0	
Integration	Geographical integration					4.2	
	Integration with other government policies					4.6	
				NPV	€42.642	Total	5.9
				BCR	1.36	Red Flagged	Yes


N52.g.1.T1			Name: Kilbeggan (N6) to Tullamore Bypass					Type: S2 Type 1		
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118830 (Improvement to part of link)	1.465 used (Full length of link2.499)	80 assumed	N/A	0.0	3301	1.465	4.542	1.318	0.190	0.439
118831	0.253	80 assumed	N/A	0.0	3301	0.253	0.784	0.228	0.033	0.076
118833	1.788	80	N/A	0.0	3301	1.788	5.543	1.609	0.232	0.536
120296 (Former link no. 118832)	1.787 (Former link length2.790)	75	N/A	0.0	3301	1.787	5.540	1.608	0.232	0.536
Kilbeggan (N6) to Tullamore Bypass	Total 5.293					Total 5.293				
<b>Notes:</b> There is currently an NRA scheme 'Tullamore Kilbeggan Link' at preliminary design stage. It is anticipated that given the traffic volumes along this section an S2 Type 1 cross section is being examined as part of the Tullamore Kilbeggan Link scheme and therefore for completeness a Type 1 upgrade is examined here. The existing route is to quite a good standard and is to Type 2 standard for the majority. The vertical alignment is quite good and there are some straight sections with decent overtaking opportunities. Much of this upgrade to Type 1 may occur as a widening (reduce cost) There are no environmentally designated areas in the vicinity of this route. 2 No. stream crossings. upgrade situation the total cost comes out at 8.677million) High Traffic Good Subgrade – Maintenance Category 2 IRI 0 to 2.5 – Maintenance Bracket 1						TOTAL:	16.408	4.764	0.688	1.588
						Any special costs	-4.102	-1.191	-0.172	-0.397
						Grand Total	17.586			

PABS Appraisal Summary Table - N52g.1.T1							
Scheme Option: N52 Kilbeggan (N6) to Tullamore Bypass		Description: 5.293km upgrade to S2 Type 1 standard	Problems Identified: • Lane widths are less than the benchmark future year standard of dual carriageway. • High incidence of fatal accidents.		Budget Cost (million) €17.59		
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score	
Environment	Air Quality		22 households affected in 2025	€0.046	No	4.5	
	Noise and vibration		4 tonnes of carbon saved in 2025	€0.000	No	3.0	
	Landscape and visual quality	Not assessed	22 households affected in 2025	-€0.095	Not assessed	4.0	
	Biodiversity	The proposed realignment may impact indirectly on Derrygolan Esker pNHA (000896).			No	3.0	
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including four NIAH Structures.			No	3.0	
	Landuse	The proposed realignments will primarily be within Agricultural Areas with one section through a Forest Semi Natural Area.			No	4.0	
	Water resources	The proposed realignments in this section of the N52 will cross the Silver River.			No	3.0	
Safety	Accident reduction		1.2 accidents saved in 2025	€14.688		7.0	
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0	
	Transport Efficiency and Effectiveness		310 vehicle-hours per day in travel time saved in 2025	Non-work Work €15.739 €16.495		7.0	
				Active travel €0.000			
				PVC Residual €11.404 €1.060			
			Imperfect competition effects	€1.650		7.0	
Accessibility and Social Inclusion	Funding	Not assessed				4.0	
	Vulnerable groups	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0	
Integration	Deprived geographic areas		4 CLAR zones experience improved access to Hub/Gateway			4.2	
	Transport integration					6.0	
	Land-use integration					7.0	
	Geographical integration					4.7	
	Integration with other government policies					5.5	
				NPV	€38.179	Total	6.2
				BCR	4.35	Red Flagged	No

N52.r.3.T2			Name: Clonmellon Relief Road				Type: S2 Type 2			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120426 (joins nodes 52944 and 59243)	1.146	N/A	N/A	0.0	3303	1.146	2.636	0.802	0.149	0.344
Clonmellon Relief Road						Total 1.146				
<p>Notes:</p> <p>This relief road passes to the south of Clonmellon through mainly agricultural land and bypasses a number of bends and junctions within the town.</p> <p>There are no environmentally designated areas adjacent to this section.</p> <p>1 No. stream crossing</p> <p>Possible acquisition of a garage / out-building where the route ties back in to the N52 to the east of Clonmellon. (add cost)</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p>						TOTAL:	2.636	0.802	0.149	0.344
						Any special costs	0.050	0.000	0.000	0.000
						Grand Total	3.981			




PABS Appraisal Summary Table - N52r.3.T2						
Scheme Option: N52 Clonmellon Relief Road		Description: 1.146km upgrade to S2 Type 2 standard	Problems Identified:			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		0 households affected in 2025 0 tonnes of carbon saved in 2025	€0.000 €0.000	No	4.0
	Noise and vibration		0 households affected in 2025	€0.000	No	4.0
	Landscape and visual quality	Not assessed			Not assessed	4.0
	Biodiversity	The proposed realignment may impact indirectly on Lough Shesk pNHA (000556) and the River Boyne and River Blackwater SAC (002299).			Yes	3.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including three NIAH Structures.			No	3.0
	Landuse	The proposed realignments will primarily be within Agricultural Areas.			No	4.0
	Water resources	The proposed realignments in this section of the N52 may impact indirectly on Lough Shesk pNHA (000556) and the River Boyne and River Blackwater SAC (002299).			No	3.0
Safety	Accident reduction		0.6 accidents saved in 2025	€2.009		7.0
	Security	No additional facility for walkers and cyclists is to be provided.				4.0
Economy	Transport Efficiency and Effectiveness		101 vehicle-hours per day in travel time saved in 2025	Non-work Work €10.631 €0.000		7.0
				PVC Residual value €2.697 €0.235		
	Other economic impacts		Imperfect competition effects	€1.063		7.0
	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
Accessibility and Social Inclusion	Deprived geographic areas		1 CLAR zones experience improved access to Hub/Gateway			4.3
	Transport integration					4.0
	Land-use integration					7.0
	Geographical integration					4.4
	Integration with other government policies					4.5
				NPV €14.022	Total	6.0
				BCR 6.20	Red Flagged	Yes
						Budget Cost (million) €3.98


N52.r.4.T2			Name: Delvin Relief Road					Type: S2 Type 2		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120429	1.112	N/A	N/A	0.0	3303	1.112	2.558	0.779	0.145	0.334
120430	1.323	N/A	N/A	0.0	3303	1.323	3.043	0.926	0.172	0.397
Delvin Relief Road						Total 2.435				
<p>Notes:</p> <p>This relief road passes to the east of Delvin through mainly agricultural land and bypasses a number of bends and junctions within the town. It is proposed that this upgrade be connected to the existing N52 at either end and to the existing N51 by the construction of new roundabouts.</p> <p>There are no environmentally designated areas adjacent to this section.</p> <p>3 No. stream crossings</p> <p>1 No. junction with the N51.</p> <p>1 No junction with a local road</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p>						TOTAL:	5.601	1.705	0.317	0.731
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	8.354			



PABS Appraisal Summary Table - N52r.4.T2						
Scheme Option: N52 Delvin Relief Road		Description: 2.435km upgrade to S2 Type 2 standard	Problems Identified:			
						Budget Cost (million) €3.35
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		0 households affected in 2025 0 tonnes of carbon saved in 2025	€0.000	No	4.0
	Noise and vibration Landscape and visual quality		0 households affected in 2025	€0.000	No	4.0
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment may impact indirectly on the River Boyne and River Blackwater SAC (002299).			Yes	3.0
	Landuse	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including Earthworks, a Ringfort and three NIAH Structures.			No	3.0
	Water resources	The proposed realignments will primarily be within Agricultural Areas but with sections through existing Artificial Surfaces.			No	4.0
Safety	Accident reduction	The proposed realignment may impact indirectly on the River Boyne and River Blackwater SAC (002299).			Yes	3.0
	Security		1.6 accidents saved in 2025	€5.441		7.0
Economy	Transport Efficiency and Effectiveness	No additional facility for walkers and cyclists is to be provided.				4.0
			240 vehicle-hours per day in travel time saved in 2025	Non-work Work €9.871 €16.445		7.0
	Other economic impacts			Active travel €0.000		
	Funding			PVC €6.911 Residual value €0.495		
Accessibility and Social Inclusion	Vulnerable groups	Not assessed	Imperfect competition effects	€1.645		7.0
	Deprived geographic areas	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
Integration	Transport Integration		1 CLAR zones experience improved access to Hub/Gateway			4.3
	Land-use integration					4.0
	Geographical integration					7.0
	Integration with other government policies					4.4
						4.5
				NPV	Total	6.0
				BCR	Red Flagged	Yes
				4.90		


N54.a.1.T1			Name: Monaghan Town to Smithborough				Type: S2 Type 1			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120220 (Former link no. 100956)	2.620 (Former link length3.220)	72	N/A	0.0	3301	2.620	8.122	2.358	0.341	0.786
100776	0.200	72	N/A	0.0	3301	0.200	0.620	0.180	0.026	0.060
118405	0.581	72	N/A	0.0	3301	0.581	1.801	0.523	0.076	0.174
120221 (Former link no. 118409)	2.771 (Former link length3.049)	75	N/A	0.0	3301	2.771	8.590	2.494	0.360	0.831
Monaghan Town to Smithborough	Total 6.127					Total 6.127				
<p>Notes:</p> <p>The first approx 600m of this route out of Monaghan Town (400m past the speed limit restriction into Monaghan Town) is to Type 1 standard. It is therefore not proposed to upgrade this section. In general this route is very bandy and hilly and there are only a few brief overtaking opportunities. The last 300m before the speed limit restriction is thought to be to at least Type 2 standard and has a footway. It is therefore not included in this upgrade.</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>2 No. very bad bends at Ballyleck</p> <p>The route parallels the Ulster Canal for approximately 4.5km.</p> <p>Bad bend at Annagola.</p> <p>Very hilly for approx 1km at Thornhill.</p> <p>6 No stream crossings.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p> <p>Split Link 100956 @ approx (264562, 332984)</p> <p>Split Link 118409 @ approx (259367, 331032)</p>						TOTAL:	19.133	5.555	0.802	1.852
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	27.342			

PABS Appraisal Summary Table - N54a.1.11						
Scheme Option: N54 Monaghan Town to Smithborough		Description: 6.127km upgrade to S2 Type 1 standard		Problems Identified: · Lane width > 3m for nearly all of this section of the route but there is a significant section where the lane widths are less than 3.5m, particularly west of Monaghan town and east of Clones. · Between Brandrum and Smithborough and again at the approach to Clones the lane widths dip intermittently into the 2.75 to 3.0m range. · Intermittent poor visibilities to V=85kph and V=100kph design standards · Sight problems are identified in and around the junction with the R187 west of Brandrum where the sight distances dip intermittently into the 20 to 120m range. · This section has an accident rate above the national average for fatal accidents but just below the national average for serious accidents. · Accident cluster located at the speed limit restriction south of Monaghan. · Accident cluster located at the junction with the R187 west of Brandrum. · Accident cluster located west of Smithborough at what appears to be a bad bend. · Accident cluster located between two local roads approximately 2.5km north of Clones. · Pavement condition is predominantly good with the majority of the route with IRI < 4.		Budget Cost (million) €7.34
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		30 households affected in 2025	-€0.027	No	3.8
	Noise and vibration		0 tonnes of carbon saved in 2025	€0.000	No	4.4
	Landscape and visual quality	Not assessed	30 households affected in 2025	€0.061	Not assessed	4.0
	Biodiversity				No	2.5
	Cultural Heritage / archaeology	The proposed realignment will impact directly on the Ulster Canal pNHA (001611) and may impact indirectly on Corcreagh Lake and Woodland pNHA (001783) and Rosefield Lake and Woodland pNHA (001784).				No
Safety	Landuse				No	4.0
	Water resources				No	3.0
	Accident reduction		0.8 accidents saved in 2025	€13.434		7.0
Economy	Security					4.0
	Transport Efficiency and Effectiveness	No additional facility for walkers and cyclists is to be provided.				5.2
Accessibility and Social Inclusion			149 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €9.138 €5.454 €0.000		
	Other economic impacts			PVC Residual value €18.958 €1.648		
Integration	Funding	Not assessed	Imperfect competition effects	€0.545		5.2
	Vulnerable groups					4.0
	Deprived geographic areas	Some of the route corridor is within 4km of a settlement of 1,500 people or more.	2 CLAR zones experience improved access to Hub/Gateway			4.0
						4.3
	Transport integration					5.0
	Land-use integration					4.6
	Geographical integration					6.1
	Integration with other government policies					4.1
			NPV	€11.295	Total	4.9
			BCR	1.60	Red Flagged	No

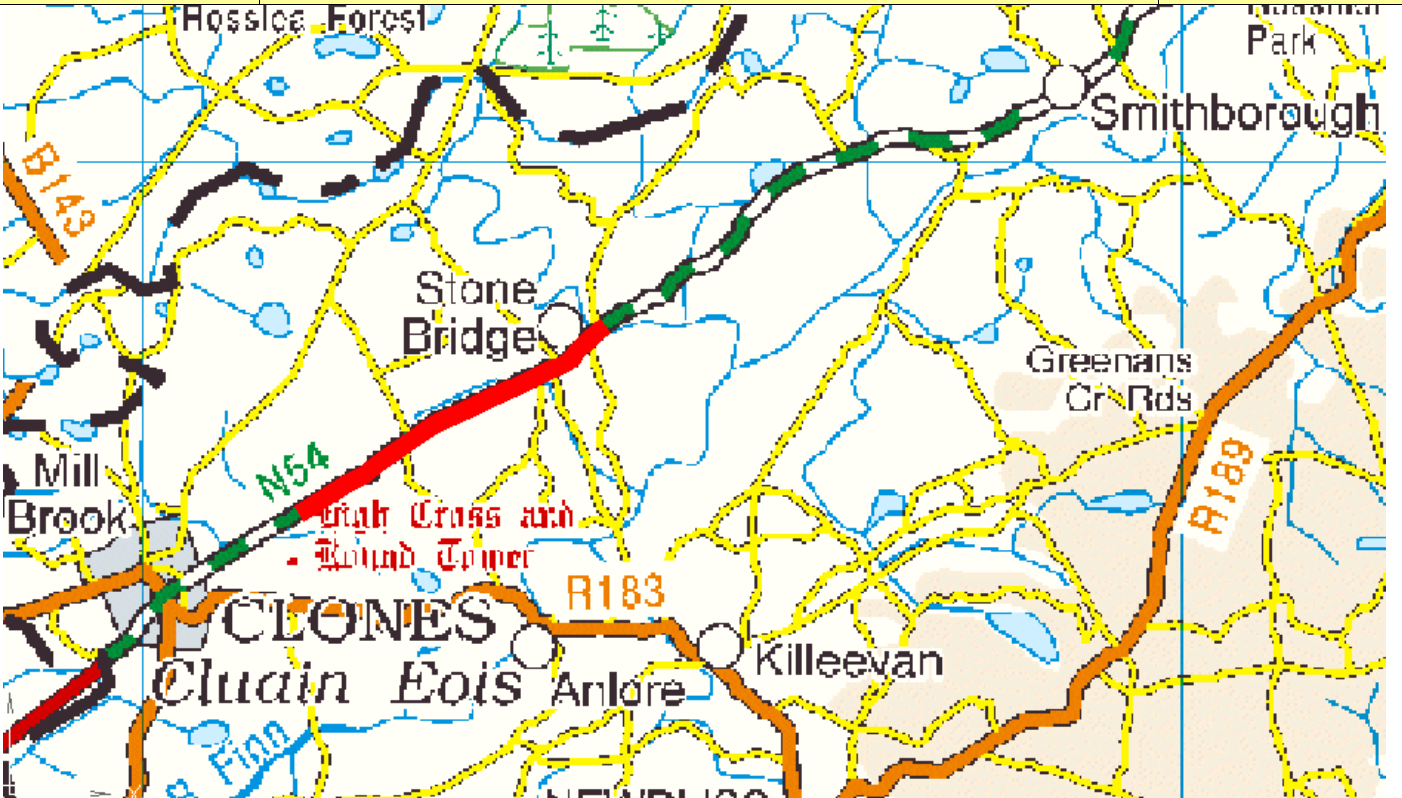
N54.a.1.T2			Name: Monaghan Town to Smithborough				Type: S2 Type 2			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120220 (Former link no. 100956)	2.620 (Former link length3.220)	72	4.7	2.5	3303	2.555	4.468	0.965	0.196	0.786
100776	0.200	72	4.7	2.5	3303	0.195	0.341	0.074	0.015	0.060
118405	0.581	72	4.7	2.5	3303	0.566	0.991	0.214	0.044	0.174
120221 (Former link no. 118409)	2.771 (Former link length3.049)	75	2.1	0.6	3304	2.754	4.170	0.694	0.147	0.831
Monaghan Town to Smithborough	Total 6.127					Total 6.070				
<p>Notes:</p> <p>The first approx 600m of this route out of Monaghan Town (400m past the speed limit restriction into Monaghan Town) is to Type 1 standard. It is therefore not proposed to upgrade this section. In general this route is very bandy and hilly and there are only a few brief overtaking opportunities. The last 300m before the speed limit restriction is though to be to at least Type 2 standard and has a footway. It is therefore not included in this upgrade.</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>2 No. very bad bends at Ballyleck</p> <p>The route parallels the Ulster Canal for approximately 4.5km.</p> <p>Bad bend at Annagola.</p> <p>Very hilly for approx 1km at Thornhill.</p> <p>6 No stream crossings.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p> <p>Split Link 100956 @ approx (264562, 332984)</p> <p>Split Link 118409 @ approx (259367, 331032)</p>						TOTAL:	9.970	1.946	0.402	1.852
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	14.170			

PABS Appraisal Summary Table - N54a.1.T2						
Scheme Option: N54 Monaghan Town to Smithborough		Description: 6.07km upgrade to S2 Type 2 standard	Problems Identified: · Lane width > 3m for nearly all of this section of the route but there is a significant section where the lane widths are less than 3.5m, particularly west of Monaghan town and east of Clones. · Between Brandrum and Smithborough and again at the approach to Clones the lane widths dip intermittently into the 2.75 to 3.0m range. · Intermittent poor visibilities to V=85kph and V=100kph design standards · Sight problems are identified in and around the junction with the R187 west of Brandrum where the sight distances dip intermittently into the 20 to 120m range. · This section has an accident rate above the national average for fatal accidents but just below the national average for serious accidents. · Accident cluster located at the speed limit restriction south of Monaghan. · Accident cluster located at the junction with the R187 west of Brandrum. · Accident cluster located west of Smithborough at what appears to be a bad bend. · Accident cluster located between two local roads approximately 2.5km north of Clones. · Pavement condition is predominantly good with the majority of the route with IRI < 4.			Budget Cost (million) €4.17
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		30 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.022 €0.000	No	3.7
	Noise and vibration		30 households affected in 2025	€0.088	No	5.1
	Landscape and visual quality	Not assessed			Not assessed	4.0
	Biodiversity	The proposed realignment will impact directly on the Ulster Canal pNHA (001611) and may impact indirectly on Correeghy Lake and Woodland pNHA (001783) and Rosefield Lake and Woodland pNHA (001784).			No	2.5
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including Earthwork.			No	3.0
Safety	Landuse	The proposed realignments will primarily be within Agricultural Areas.			No	4.0
	Water resources	The proposed realignments in this section of the N54 will cross the River Magheramey.			No	3.0
	Accident reduction		0.5 accidents saved in 2025	€7.838		7.0
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0
	Transport Efficiency and Effectiveness		112 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €7.061 €4.161 €0.000		5.7
	Other economic impacts		Imperfect competition effects	PVC Residual value €9.732 €0.708		5.7
Accessibility and Social inclusion	Funding	Not assessed		€0.416		4.0
	Vulnerable groups	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		2 CLAR zones experience improved access to Hub/Gateway			4.4
Integration	Transport integration					5.0
	Land-use integration					4.6
	Geographical integration					6.1
Integration	Integration with other government policies					4.1
			NPV	€10.518	Total	5.1
			BCR	2.08	Red Flagged	No



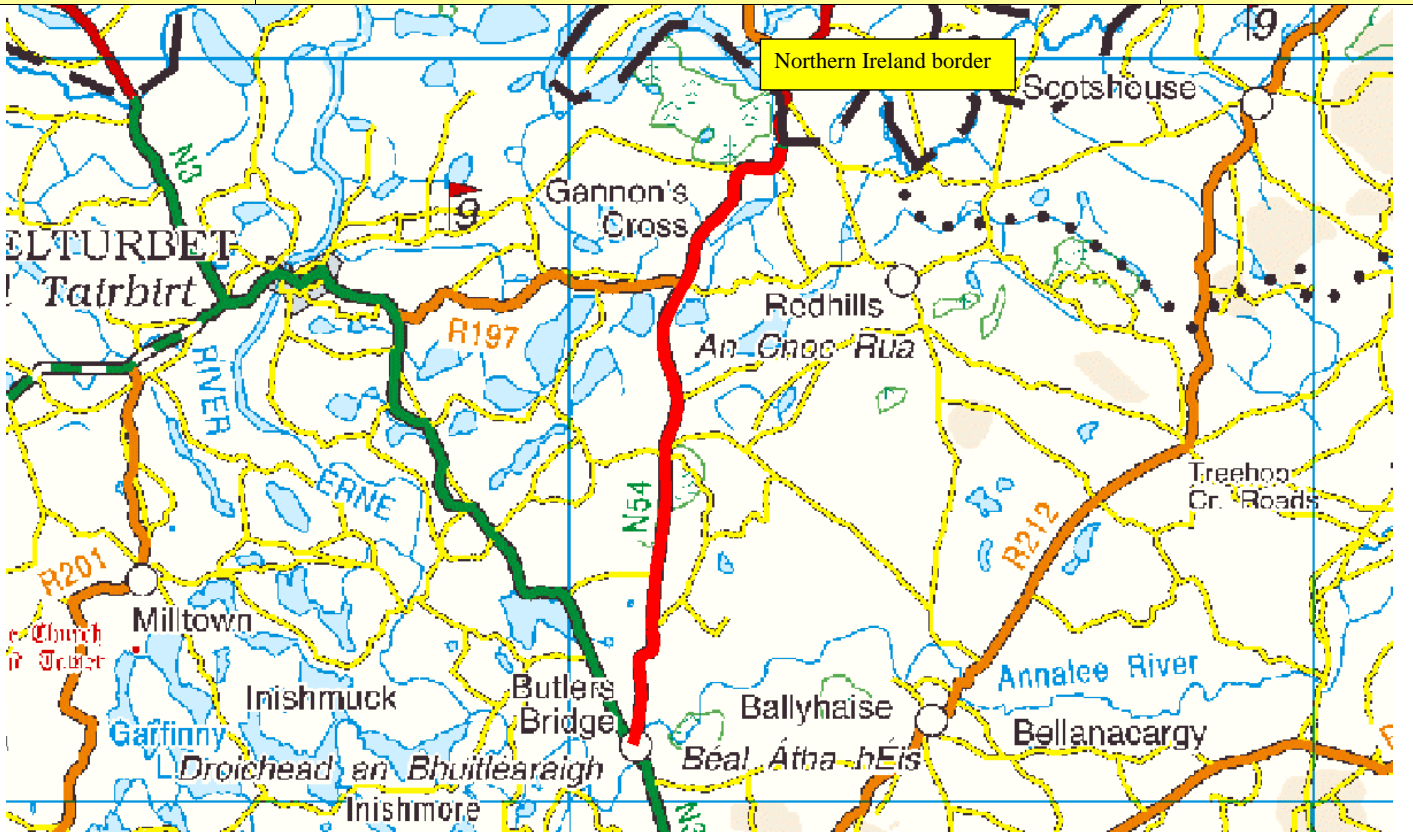
N54.a.2.T1			Name: Smithborough to Clones					Type: S2 Type 1		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120224 (Former link no. 118414)	3.121 (Former link length4.421)	78	N/A	0.0	3301	3.121	9.675	2.809	0.406	0.936
120226 (Former link no. 118413)	2.211 (Former link length3.027)	76	N/A	0.0	3301	2.211	6.854	1.990	0.287	0.663
Smithborough to Clones	Total 5.332					Total 5.332				
<p>Notes:</p> <p>The first approx 2.715km out of Smithborough is to Type 1 standard and so is not recommended for upgrade here. The next approx. 2.020km is to approximately Type 2 standard. The remainder of this route is narrow and bendy and has a poor vertical alignment in places. The last approx 340m before the speed limit at Clones is to approx Type 3/2 standard and has a footpath on the northern side. It is not proposed to upgrade this section either. There are limited overtaking opportunities along this route. There is a good overtaking opportunity coming out of Smithborough and also at the approach to Clones.</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>1 No Bridge over the Finn River (medium structure)</p> <p>2 No. stream crossings</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p> <p>Split link 118414 @ approx (255908, 329547)</p> <p>Split link 118413 @ approx (251496, 326654)</p>						TOTAL:	16.529	4.799	0.693	1.600
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	23.621			

PABS Appraisal Summary Table - N54a.2.T1						
Scheme Option: N54 Smithborough to Clones		Description: 5.332km upgrade to S2 Type 1 standard	Problems Identified: <ul style="list-style-type: none"><li>· Lane width &gt; 3m for nearly all of this section of the route but there is a significant section where the lane widths are less than 3.5m, particularly west of Monaghan town and east of Clones.</li><li>· Between Brandrum and Smithborough and again at the approach to Clones the lane widths dip intermittently into the 2.75 to 3.0m range.</li><li>· Intermittent poor visibilities to V=85kph and V=100kph design standards</li><li>· Sight problems are identified in and around the junction with the R187 west of Brandrum where the sight distances dip intermittently into the 20 to 120m range.</li><li>· This section has an accident rate above the national average for fatal accidents but just below the national average for serious accidents.</li><li>· Accident cluster located at the speed limit restriction south of Monaghan.</li><li>· Accident cluster located at the junction with the R187 west of Brandrum.</li><li>· Accident cluster located west of Smithborough at what appears to be a bad bend.</li><li>· Accident cluster located between two local roads approximately 2.5km north of Clones.</li><li>· Pavement condition is predominantly good with the majority of the route with IRI &lt; 4.</li></ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		21 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.016 €0.000	No	3.9
	Noise and vibration Landscape and visual quality		21 households affected In 2025	-€0.041	No	3.7
	Biodiversity		Not assessed		Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No	4.0
	Landuse	No sites will be directly impacted by the proposed realignments and no sites are within 100m of the realignment.			No	4.0
Safety	Water resources	The proposed realignments will primarily be within Agricultural Areas.			No	4.0
	Accident reduction	The proposed realignments in this section of the N54 will cross the River Finn.			No	3.0
	Security	No additional facility for walkers and cyclists is to be provided.	0.3 accidents saved in 2025	€5.561		6.7
Economy	Transport Efficiency and Effectiveness		43 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel PVC Residual value		4.4
	Other economic impacts			€2.713 €1.656 €0.000 €16.229 €1.424		4.0
	Funding	Not assessed	Imperfect competition effects	€0.166		4.0
Accessibility and Social Inclusion	Vulnerable groups	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.1
	Deprived geographic areas		1 CLAR zones experience improved access to Hub/Gateway			4.1
Integration	Transport integration					5.0
	Land-use integration					4.6
	Geographical integration					6.1
	Integration with other government policies					4.1
				NPV	Total	4.6
				BCR	Red Flagged	No
					0.71	

N54.a.2.T2			Name: Smithborough to Clones				Type: S2 Type 2				
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
120228 (Former link no. 118414)	1.274 (Former link length4.421)	78	1.2	0.2	3303	1.271	1.616	0.140	0.034	0.382	
120226 (Former link no. 118413)	2.211 (Former link length3.027)	76	2.0	0.3	3303	2.204	3.161	0.456	0.099	0.663	
Smithborough to Clones	Total 3.485					Total 3.475					
<p>Notes:</p> <p>The first approx 2.715km out of Smithborough is to Type 1 standard and so is not recommended for upgrade here. The next approx. 2.020km is to approximately Type 2 standard and is also not recommended for upgrade here. The remainder of this route is narrow and bendy and has a poor vertical alignment in places. The last approx 340m before the speed limit at Clones is to approx Type 3/2 standard and has a footpath on the northern side. It is not proposed to upgrade this section either. There are limited overtaking opportunities along this route. There is a good overtaking opportunity coming out of Smithborough and also at the approach to Clones.</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>1 No Bridge over the Finn River (medium structure)</p> <p>2 No. stream crossings</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p> <p>Split link 118414 @ approx (254446, 328463)</p> <p>Split link 118413 @ approx (251496, 326654)</p>						TOTAL:	4.777	0.596	0.132	1.046	
						Any special costs	0.500	0.000	0.000	0.000	
						Grand Total					7.051



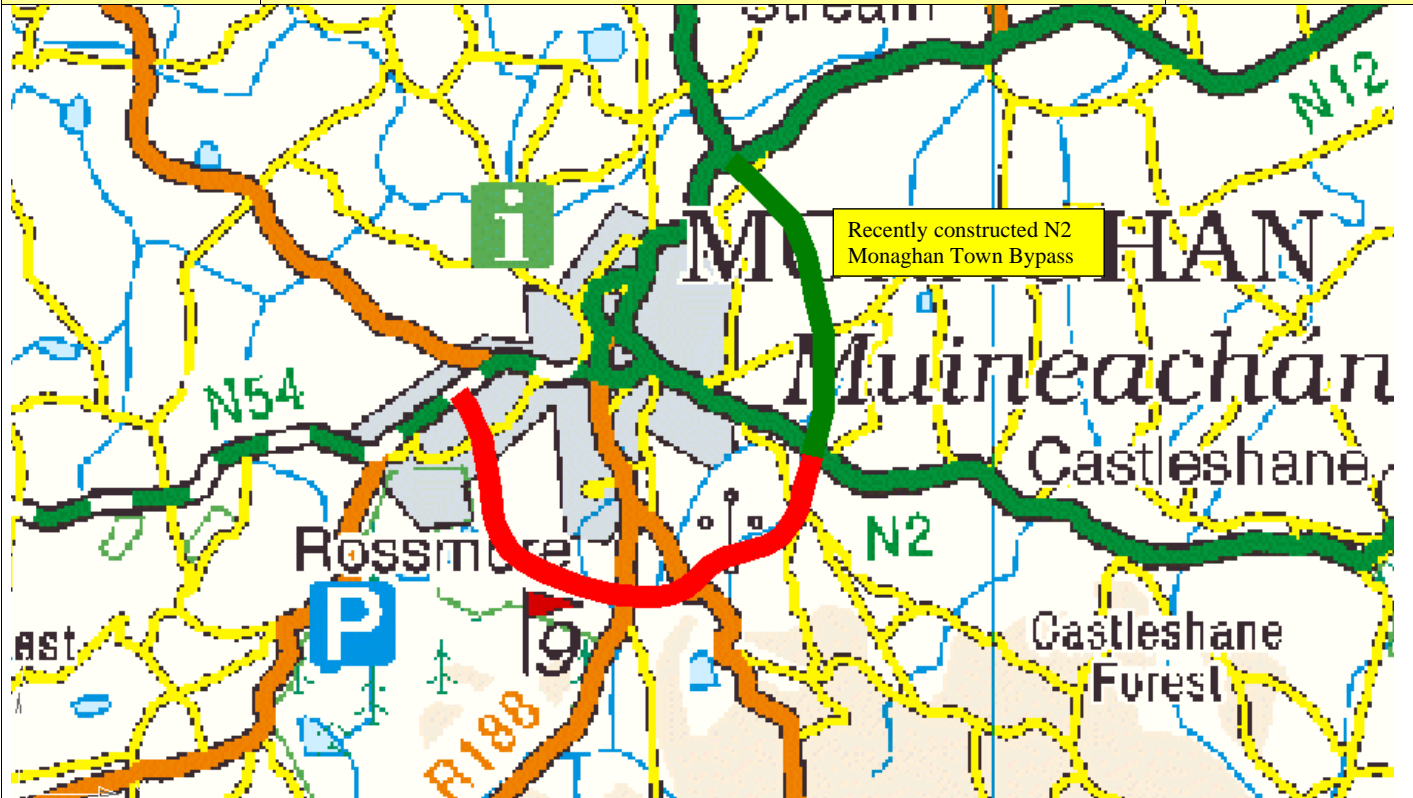
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N54.b.1.T2			Name: Northern Ireland border to Butlers Bridge						Type: S2 Type 2	
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
62210	2.520	71	4.4	1.9	3305	2.472	4.446	1.014	0.205	0.756
118417	0.672	71	4.4	1.9	3305	0.659	1.186	0.270	0.055	0.202
118418	4.081	73.5	3.3	1.2	3304	4.032	6.569	1.274	0.264	1.224
64753	1.660	73.5	3.3	1.2	3304	1.640	2.672	0.518	0.107	0.498
Northern Ireland border to Butlers Bridge	Total 8.933					Total 8.803				
<p>Notes:</p> <p>This route is generally bendy and is narrow in places. There are a number of intermittent short overtaking opportunities but these are hampered by the vertical alignment and the bendiness.</p> <p>There are a number of environmentally designated areas in the vicinity of this route, including Drumlany Lough, Drumgorry Lough, Corrarod Lough, Cloverhill Lough. Kilnaleck Lough and also a forrest area. These are designated as NHA's and SAC's and sometimes both.</p> <p>The route is bendy and hilly from the Northern Ireland Border to the junction with the R197.</p> <p>There are no speed limit restrictions through Cloverhill.</p> <p>The route passes through a forest area for approx 0.75km south of Cloverhill.</p> <p>Very bad bends at Kilnaglare Lower.</p> <p>3 No. stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p>						TOTAL:	14.873	3.077	0.630	2.680
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	21.260			

PABS Appraisal Summary Table - N54b.1.12						
Scheme Option: N54 Northern Ireland border to Butlers Bridge	Description: 8.803km upgrade to S2 Type 2 standard	Problems Identified:	Budget Cost (million) €1.26			
				<ul style="list-style-type: none"> <li>ne width &lt; 3m for significant sections of this section of the route and are mostly less than 3.5m wide.</li> <li>For the isolated 4km section that passes between the looping Northern Ireland Border and also the approximately 4km section between Cloverhill and Butlers Bridge the lane widths dip to the 2.75 to 3.0m range.</li> <li>Intermittent poor visibilities to V=85kph and V=100kph design standards</li> <li>Sight problems are identified for the approximately 3km immediately south of the NI Border north of Cloverhill where the sight distances are predominantly in the 20 to 120m range.</li> <li>Sight problems identified from the junction with the local road to Ballyhalse to Butlers Bridge where the sightlines also dip into the 20 to 120m range.</li> <li>Minor accident cluster located at the junction with the R187.</li> <li>Minor accident cluster located approximately 2km north of Butlers Bridge.</li> <li>Pavement condition is predominantly good with the majority of the route with IRI &lt; 4.</li> </ul>		
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		70 households affected in 2025 -2 tonnes of carbon saved in 2025	-€0.062 €0.000	No	3.5
	Noise and vibration Landscape and visual quality	Not assessed	70 households affected in 2025	-€0.192	No	2.4
	Biodiversity	The proposed realignment will impact directly on the Lough Oughter and Associated Loughs SAC & pNHA (000007) at numerous locations. Potential to indirectly impact on Lough Garrow and Lough Gubdoo pNHA (000984).			Not assessed	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Ringfort - Rath.			Yes	1.0
	Landuse	The proposed realignments will primarily be within Agricultural Areas but two sections are through Wetlands and a number of sections are through a Forest Semi Natural Areas.			No	3.0
	Water resources	The proposed realignment will impact directly on the Lough Oughter and Associated Loughs SAC & pNHA (000007) at numerous locations. Potential to indirectly impact on the River Annalee and the Lough Garrow and Lough Gubdoo pNHA (000984).			No	4.0
Safety	Accident reduction Security	No additional facility for walkers and cyclists is to be provided.	0.6 accidents saved in 2025	€4.522		6.6
Economy	Transport Efficiency and Effectiveness		52 vehicle-hours per day in travel time saved in 2025	€2.894		4.0
				Non-work Work Active travel €2.950 €0.000		4.6
	Other economic impacts Funding	Not assessed	Imperfect competition effects	€14.108 €1.083		
	Vulnerable groups Deprived geographic areas	Some of the route corridor is within 4km of a settlement of 1,500 people or more.		€0.295		4.8
Accessibility and Social Inclusion	Transport integration					4.0
	Land-use integration		0 CLAR zones experience improved access to Hub/Gateway			4.0
	Geographical integration					5.0
	Integration with other government policies					4.6
						4.1
				NPV	-€2.617	Total
				BCR	0.81	Red Flagged
						4.6
						Yes

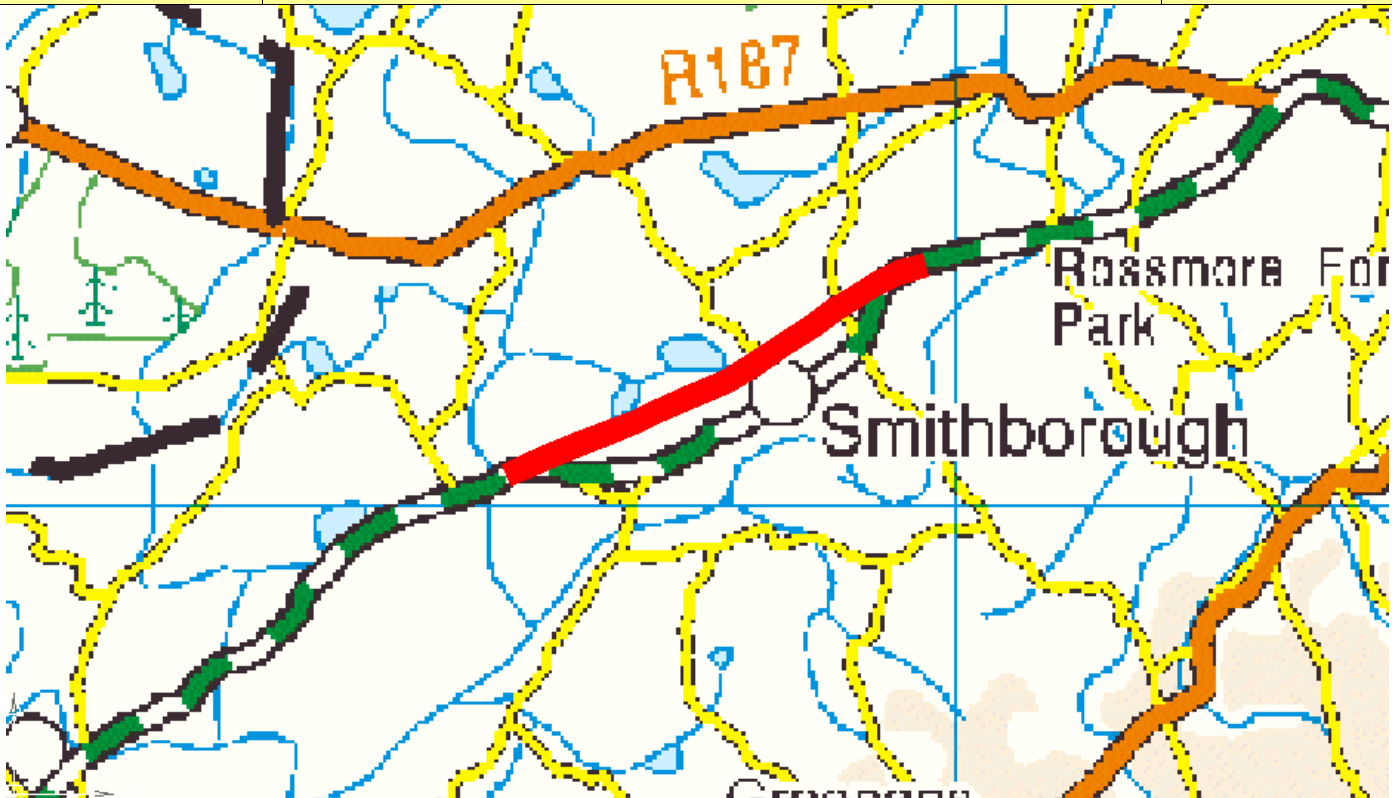
N54.b.1.T3			Name: Northern Ireland border to Butlers Bridge					Type: S2 Type 3		
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
62210	2.520	71	1.6	0.2	3307	2.515	2.729	0.308	0.091	0.756
118417	0.672	71	1.6	0.2	3307	0.671	0.728	0.082	0.024	0.202
118418	4.081	73.5	1.0	0.0	3306	4.081	4.070	0.319	0.098	1.224
64753	1.660	73.5	1.0	0.0	3306	1.660	1.656	0.130	0.040	0.498
Northern Ireland border to Butlers Bridge	Total 8.933					Total 8.927				
<p>Notes:</p> <p>This route is generally bendy and is narrow in places. There are a number of intermittent short overtaking opportunities but these are hampered by the vertical alignment and the bendiness.</p> <p>After circa 4km from Butlersbridge the road widths are circa Type 3 standard with reasonable geometry for approx 2.5km towards the NI Border, though some improvements to bendiness and the R197 junction would be beneficial (costs adjusted).</p> <p>There are a number of environmentally designated areas in the vicinity of this route, including Drumlany Lough, Drumgorry Lough, Corrarod Lough, Cloverhill Lough. Kilnaleck Lough and also a forrest area. These are designated as NHA's and SAC's and sometimes both.</p> <p>The route is bendy and hilly from the Northern Ireland Border to the junction with the R197.</p> <p>There are no speed limit restrictions through Cloverhill.</p> <p>The route passes through a forest area for approx 0.75km south of Cloverhill.</p> <p>Very bad bends at Kilnaglare Lower.</p> <p>3 No. stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p>						TOTAL:	9.183	0.839	0.252	2.680
						Any special costs	-2.500	0.000	0.000	0.000

PABS Appraisal Summary Table - N54b.1.T3						
Scheme Option: N54 Northern Ireland border to Butlers Bridge		Description: 8.927km upgrade to S2 Type 3 standard		Problems Identified:		Budget Cost (million) €0.45
				ne width < 3m for significant sections of this section of the route and are mostly less than 3.5m wide. · For the isolated 4km section that passes between the looping Northern Ireland Border and also the approximately 4km section between Cloverhill and Butlers Bridge the lane widths dip to the 2.75 to 3.0m range. · Intermittent poor visibilities to V=85kph and V=100kph design standards · Sight problems are identified for the approximately 3km immediately south of the NI Border north of Cloverhill where the sight distances are predominantly in the 20 to 120m range. · Sight problems identified from the junction with the local road to Ballyhaise to Butlers Bridge where the sightlines also dip into the 20 to 120m range. · Minor accident cluster located at the junction with the R187. · Minor accident cluster located approximately 2km north of Butlers Bridge. · Pavement condition is predominantly good with the majority of the route with IRI < 4.		
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		70 households affected in 2025 -1 tonnes of carbon saved in 2025	-€0.025 €0.000	No	3.6
	Noise and vibration Landscape and visual quality	Not assessed	70 households affected in 2025	-€0.053	No	3.0
	Biodiversity				Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will impact directly on the Lough Oughter and Associated Loughs SAC & pNHA (000007) at numerous locations. Potential to indirectly impact on Lough Garrow and Lough Gubdoo pNHA (000984).			Yes	1.0
	Landuse	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Ringfort - Rath.			No	3.0
	Water resources	The proposed realignments will primarily be within Agricultural Areas but two sections are through Wetlands and a number of sections are through a Forest Semi Natural Areas.			No	4.0
Safety	Accident reduction		0.3 accidents saved in 2025	€0.710		4.8
	Security	No additional facility for walkers and cyclists is to be provided.				4.0
Economy	Transport Efficiency and Effectiveness		18 vehicle-hours per day in travel time saved in 2025	Non-work Work €1.265 €0.000		4.4
				PVC Residual value €6.682 €0.400		
	Other economic impacts		Imperfect competition effects	€0.127		4.8
	Funding	Not assessed				4.0
Accessibility and Social Inclusion	Vulnerable groups	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		0 CLAR zones experience improved access to Hub/Gateway			3.9
Integration	Transport integration					5.0
	Land-use integration					4.6
	Geographical integration					6.1
	Integration with other government policies					4.1
				NPV	-€3.573	Total
				BCR	0.47	Red Flagged
						4.4
						Yes

N54.r.1.T1			Name: Monaghan Town Relief Road (south)				Type: S2 Type 1			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120241	2.161	N/A	N/A	0.0	3301	2.161	6.699	1.945	0.281	0.649
120244	0.416	N/A	N/A	0.0	3301	0.416	1.290	0.374	0.054	0.125
120256	1.465	N/A	N/A	0.0	3301	1.465	4.541	1.319	0.190	0.440
Monaghan Town Relief Road (south)						Total 4.042				
<p>Notes:</p> <p>This route passes to the south of Monaghan Town from the recently constructed roundabout of the N2 Monaghan Town Bypass, connecting to the R162 and R188 before joining up with the N54 west of Monaghan. The route passes over an existing residential / industrial road for approx 500m at Kilcoghigan.</p> <p>There are no environmentally designated areas in the vicinity of this route. Connects with N2 and recently constructed N2 Monaghan Town Bypass.</p> <p>Junction with the R162 and R188.</p> <p>Junctions with 2 No local roads.</p> <p>Junctions with 5 No access tracks.</p> <p>Route passes through Rossmore Park.</p> <p>Premium on some of land costs as this is a peri urban area.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>Start N54 @ node 51088 and 1<sup>st</sup> link ties in with node 50981 (R188). Next link ties in with link 100966 (split @ approx (267717, 331950), R162)), final link joins previously split link to link 45510 (split @ approx (268674, 332919), N2)</p>						TOTAL:	12.530	3.638	0.525	1.213
						Any special costs	0.500	0.000	0.000	0.000
						Grand Total	18.406			

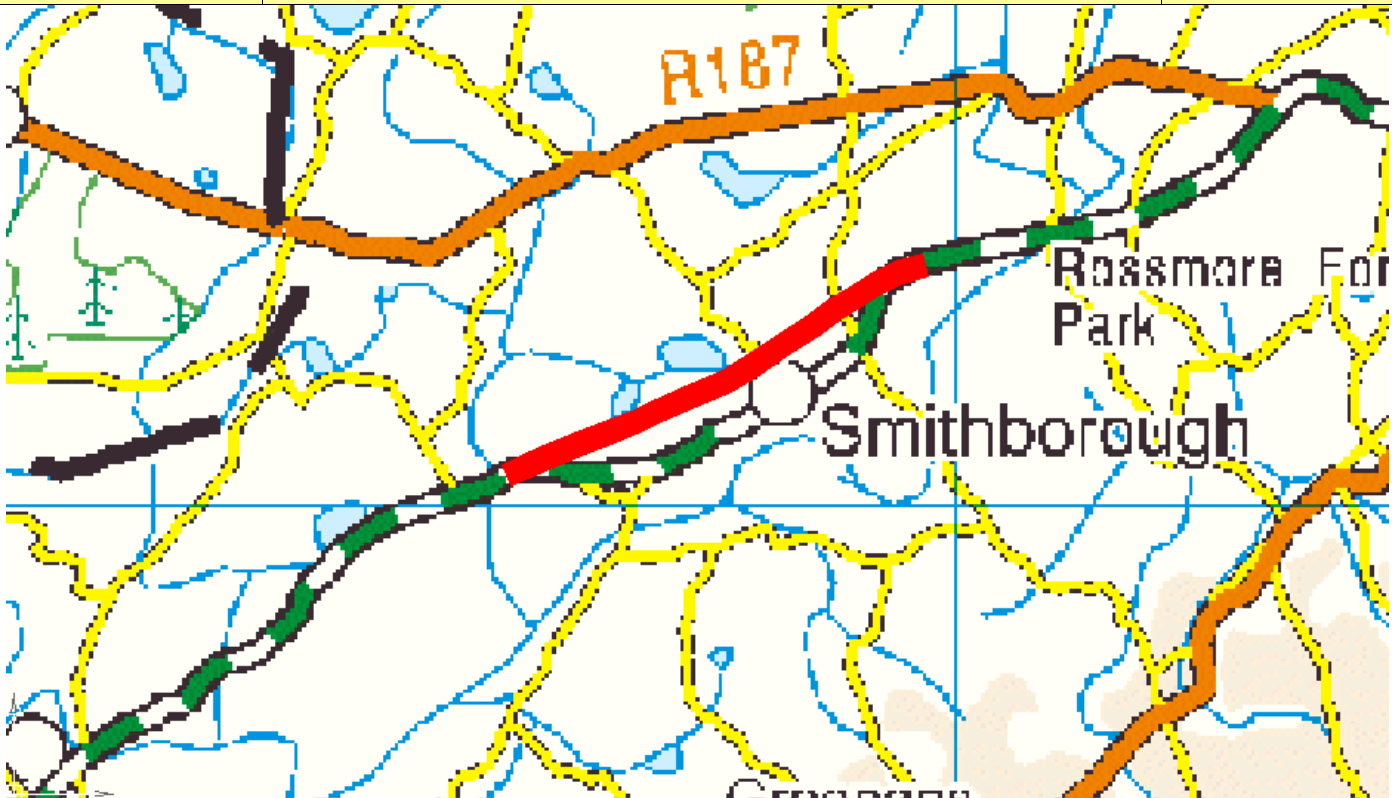


PABS Appraisal Summary Table - N54r.1.T1						
Scheme Option: N54 Monaghan Town Relief Road (south)		Description: 4.042km upgrade to S2 Type 1 standard		Problems Identified:		Budget Cost (million) €18.41
Objective	Sub-objective	Qualitative impacts		Quantitative assessment	Monetised (million 30 yrs)	
Environment	Air Quality			0 households affected in 2025	€0.000	No
	Noise and vibration			0 tonnes of carbon saved in 2025	€0.000	No
	Landscape and visual quality		Not assessed	0 households affected in 2025		Not assessed
	Biodiversity		The proposed realignment has potential to indirectly impact on Wright's Wood pNHA (001612).			No
	Cultural Heritage / archaeology		No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including two Fulacht Fias.			No
	Landuse		The majority of the proposed realignments will be within Agricultural Areas, with a number of portions through existing Artificial Surfaces, and one small section through a Forest and Semi Natural Area.			No
	Water resources		The proposed realignments in this section of the N54 will not cross any watercourses.			No
Safety	Accident reduction			0.6 accidents saved in 2025	€1.942	5.2
	Security		No additional facility for walkers and cyclists is to be provided.			4.0
Economy	Transport Efficiency and Effectiveness			101 vehicle-hours per day in travel time saved in 2025	Non-work Work €1.931 Active travel €0.000	4.9
					PVC Residual value €13.164 €1.098	
Accessibility and Social Inclusion	Other economic impacts			Imperfect competition effects	€0.193	4.6
	Funding		Not assessed			4.0
	Vulnerable groups		Some of the route corridor is within 4km of a settlement of 1,500 people or more.			4.0
	Deprived geographic areas			0 CLAR zones experience improved access to Hub/Gateway		4.1
	Transport integration					5.0
	Land-use integration					4.6
	Geographical integration					6.1
Integration with other government policies					4.1	

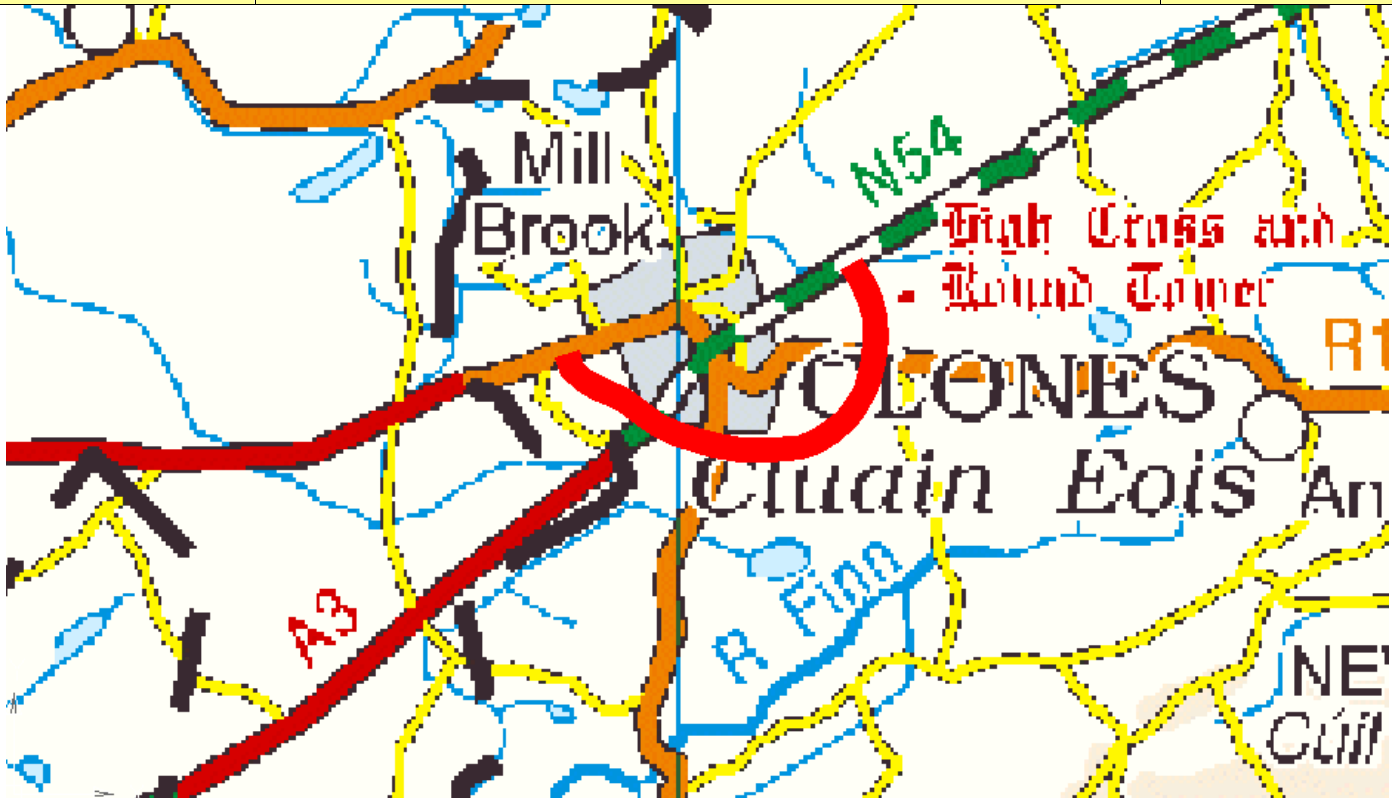
N54.r.2.T1			Name: Smithborough Relief Road				Type: S2 Type 1			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120270	3.050	N/A	N/A	0.0	3301	3.050	9.455	2.745	0.397	0.915
Smithborough Relief Road						Total 3.050				
<p>Notes:</p> <p>This route passes to the north of Smithborough and bypasses a number of bends and junctions at Smithborough. This route passes through agricultural land.</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>2 No. junctions with local roads.</p> <p>1 No stream crossings.</p> <p>Passes close to Billary Lough and Magherany Lough. There could be poor subgrade in the vicinity of these loughs.</p> <p>High Traffic Poor Subgrade – Maintenance Category 4</p> <p>South side of relief road – Split link 118412 @ approx (257249, 330236)</p> <p>North side of relief road – Split link 120090 @ approx (259645, 331519)</p>						TOTAL:	9.455	2.745	0.397	0.915
						Any special costs	0.500	0.000	0.000	0.000
						Grand Total	14.012			



PABS Appraisal Summary Table - N54r.2.T1						
Scheme Option: N54 Smithborough Relief Road		Description: 3.05km upgrade to S2 Type 1 standard	Problems Identified:			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		0 households affected in 2025 0 tonnes of carbon saved in 2025	€0.000	No	4.0
	Noise and vibration		0 households affected in 2025	€0.000	No	4.0
	Landscape and visual quality	Not assessed			Not assessed	4.0
	Biodiversity	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including a Ringfort - Rath.			No	3.0
	Landuse	The proposed realignments will primarily be within Agricultural Areas.			No	4.0
Safety	Water resources	The proposed realignments in this section of the N54 will not cross any rivers.			No	4.0
	Accident reduction		0.5 accidents saved in 2025	€4.919		7.0
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0
	Transport Efficiency and Effectiveness		70 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €4.344 €2.693 €0.000		5.1
	Other economic impacts			PVC Residual value €10.045 €0.834		
	Funding		Imperfect competition effects	€0.269		5.1
Accessibility and Social Inclusion	Vulnerable groups	Not assessed				4.0
	Deprived geographic areas	None of the route corridor is within 4km of a settlement of 1,500 people or more.	1 CLAR zones experience improved access to Hub/Gateway			4.3
Integration	Transport integration					
	Land-use integration					5.0
	Geographical integration					4.6
	Integration with other government policies					6.1
				NPV	€3.015	Total
				BCR	1.30	Red Flagged
						4.9
						No

N54.r.2.T2			Name: Smithborough Relief Road					Type: S2 Type 2		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120270	3.050	N/A	N/A	0.0	3301	3.050	7.015	2.135	0.397	0.915
Smithborough Relief Road						Total 3.050				
<p>Notes:</p> <p>This route passes to the north of Smithborough and bypasses a number of bends and junctions at Smithborough. This route passes through agricultural land.</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>2 No. junctions with local roads.</p> <p>1 No stream crossings.</p> <p>Passes close to Billary Lough and Magherany Lough. There could be poor subgrade in the vicinity of these loughs.</p> <p>High Traffic Poor Subgrade – Maintenance Category 4</p> <p>South side of relief road – Split link 118412 @ approx (257249, 330236)</p> <p>North side of relief road – Split link 120090 @ approx (259645, 331519)</p>						TOTAL:	7.015	2.135	0.397	0.915
						Any special costs	0.300	0.000	0.000	0.000
						Grand Total	10.762			

PABS Appraisal Summary Table - N54r.2.T2						
Scheme Option: N54 Smithborough Relief Road		Description: 3.05km upgrade to S2 Type 2 standard	Problems Identified:			
						Budget Cost (million) €0.76
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		0 households affected in 2025 0 tonnes of carbon saved in 2025	€0.000	No	4.0
	Noise and vibration		0 households affected in 2025	€0.000	No	4.0
	Landscape and visual quality	Not assessed			Not assessed	4.0
	Biodiversity	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including a Ringfort - Rath.			No	3.0
Safety	Landuse	The proposed realignments will primarily be within Agricultural Areas.			No	4.0
	Water resources	The proposed realignments in this section of the N54 will not cross any rivers.			No	4.0
	Accident reduction		0.4 accidents saved in 2025	€3.168		7.0
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0
	Transport Efficiency and Effectiveness		57 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €3.490 €2.169 €0.000		5.1
				PVC Residual value €7.482 €0.632		
	Other economic impacts		Imperfect competition effects	€0.217		5.2
Accessibility and Social Inclusion	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.3
Integration	Deprived geographic areas		1 CLAR zones experience improved access to Hub/Gateway			
	Transport integration					5.0
	Land-use integration					4.6
	Geographical integration					6.1
	Integration with other government policies					4.1
				NPV	€2.193	Total
				BCR	1.29	Red Flagged
						4.9
						No

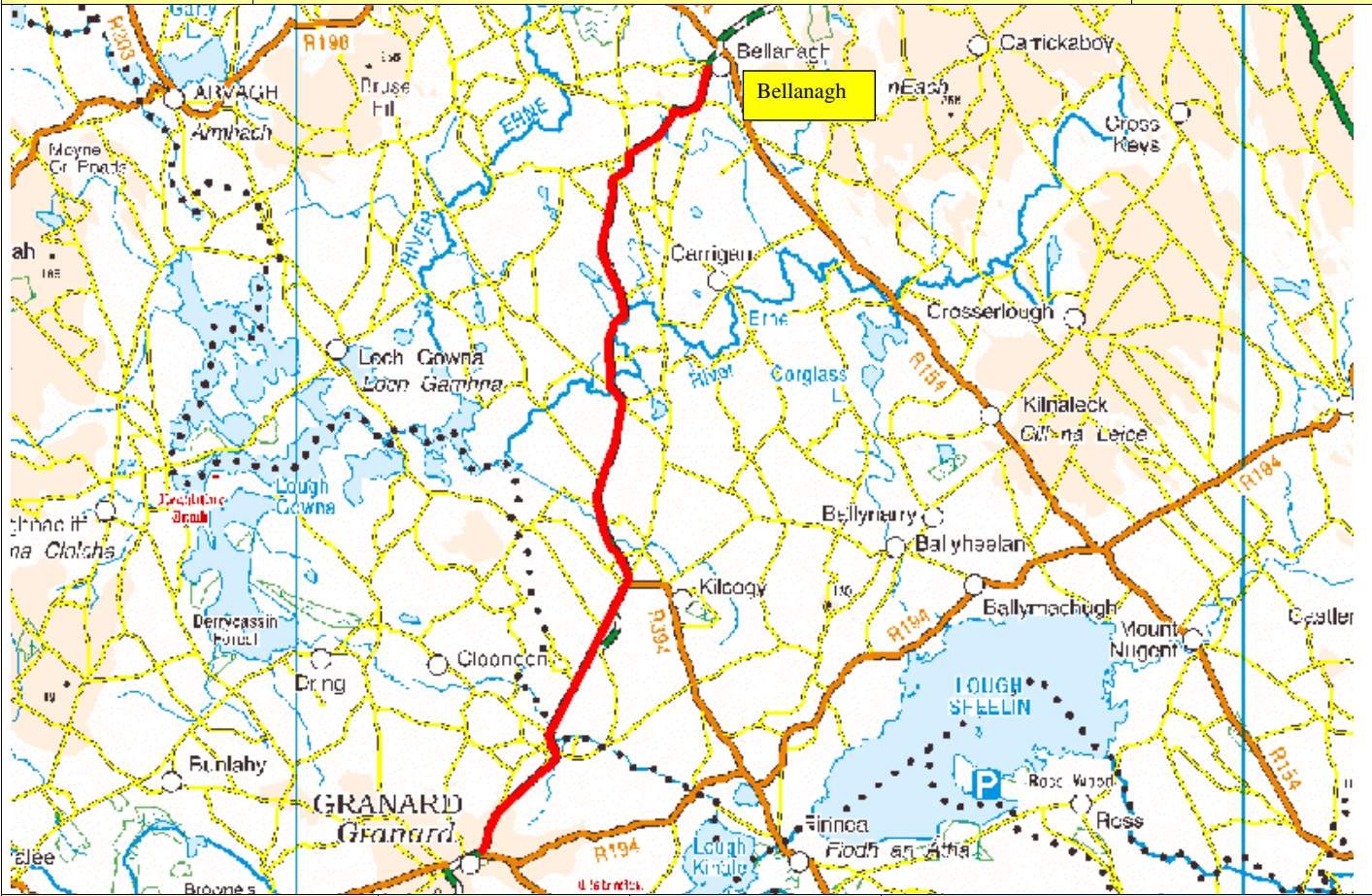
N54.r.3.T2			Name: Clones Relief Road					Type: S2 Type 2		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120275	0.705	N/A	N/A	0.0	3303	0.705	1.622	0.494	0.092	0.212
120285	1.110	N/A	N/A	0.0	3303	1.110	2.553	0.777	0.144	0.333
120289	0.515	N/A	N/A	0.0	3303	0.515	1.185	0.361	0.067	0.155
120288	0.740	N/A	N/A	0.0	3303	0.740	1.702	0.518	0.096	0.222
Clones Relief Road						Total 3.070				
<p>Notes:</p> <p>This route passes to the south of Clones diverging from the N54 at Altartate Glebe and connecting with the R183 (east), the R212, connecting with the N54 (west) and extending past the N54 to connect up with the R183 (west).</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>Junctions with R183 (east), R212 and R183 (west).</p> <p>Junctions with 1 No. local road.</p> <p>Junction with 1 No. access track.</p> <p>2 No stream crossings.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>Start East -&gt; Split Link 118413 @ approx (251181, 326452) -&gt; Split link 100767 @ (251219, 325789) -&gt; Split link 101112 @ (250154, 324879) -&gt; Split link 62194 @ (249653, 325278) -&gt; tie into node 50871</p>						TOTAL:	7.061	2.149	0.399	0.921
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	10.530			

PABS Appraisal Summary Table - N54r.3.T2						
Scheme Option: N54 Clones Relief Road		Description: 3.07km upgrade to S2 Type 2 standard		Problems identified:		Budget Cost (million) €10.53
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		0 households affected in 2025	€0.000	No	4.0
	Noise and vibration		0 tonnes of carbon saved in 2025	€0.000	No	4.0
	Landscape and visual quality		0 households affected in 2025	€0.000	Not assessed	4.0
	Biodiversity				Yes	2.5
	Cultural Heritage / archaeology	The proposed realignment has potential for indirect impacts on Killoosky Lough Cluster SAC and pNHA (001786).			No	4.0
	Landuse	No sites will be directly impacted by the proposed realignments and no sites are within 100m of the realignment.			No	4.0
	Water resources	The proposed realignments will primarily be within Agricultural Areas, with a small portion through existing Artificial Surfaces.			Yes	2.5
Safety	Accident reduction		0.5 accidents saved in 2025	€1.676		5.8
Economy	Security		No additional facility for walkers and cyclists is to be provided.			4.0
	Transport Efficiency and Effectiveness			Non-work Work		5.6
			71 vehicle-hours per day in travel time saved in 2025	€4.336 €3.381		
				Active travel PVC Residual value	€0.000 €7.426 €0.624	
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	€0.338		5.8
	Funding					4.0
	Vulnerable groups		Some of the route corridor is within 4km of a settlement of 1,500 people or more.			4.0
	Deprived geographic areas		0 CLAR zones experience improved access to Hub/Gateway			4.0
	Transport integration					5.0
	Land-use integration					4.6
	Geographical integration					6.1
Integration	Integration with other government policies					4.1
				NPV	Total	4.9
				BCR	1.39	Red Flagged

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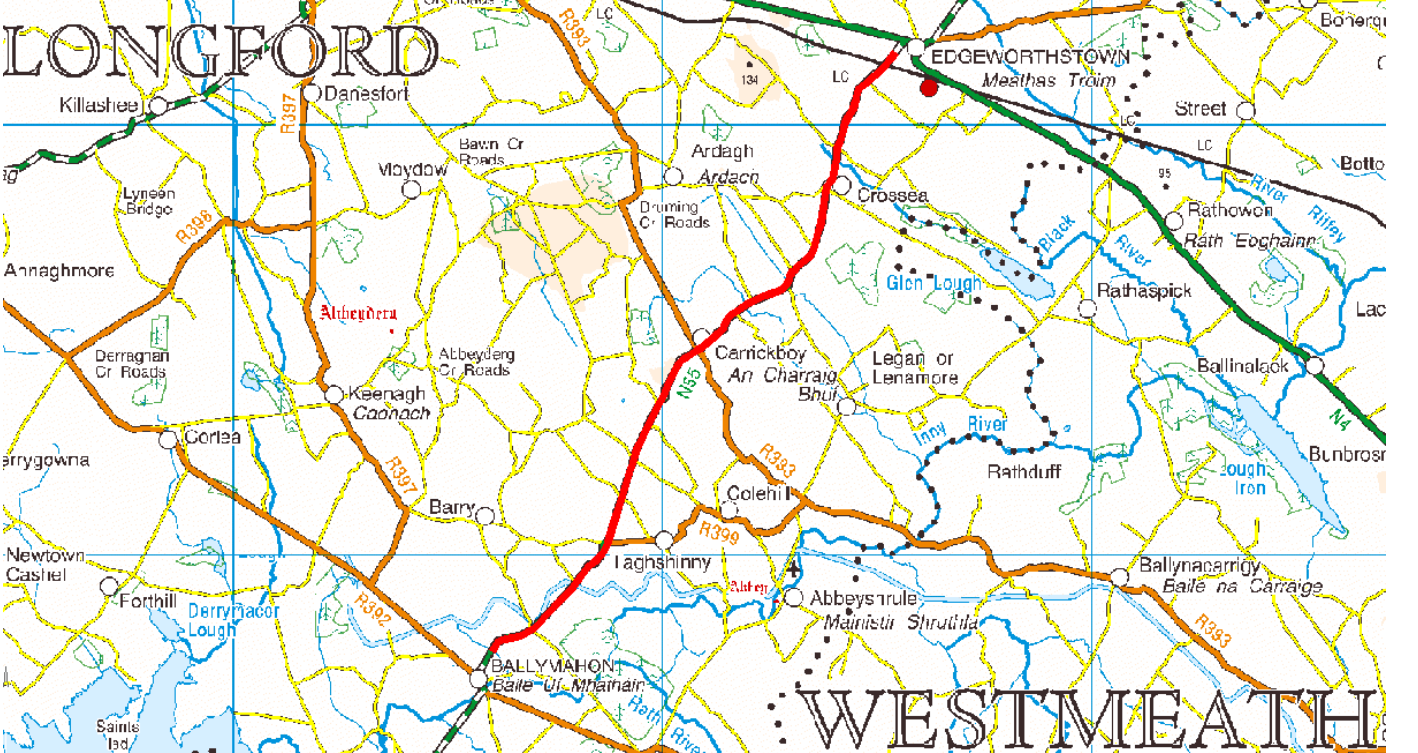
PABS Appraisal Summary Table - N55a.1.T2							
Scheme Option: N55 Bellanagh to Granard		Description: 18.988km upgrade to S2 Type 2 standard	Problems Identified: · Lane width <3.0m for approximately all of the section. Lane width < 2.75m intermittently. · Intermittent poor visibilities to V=85kph and V=100kph design standards, particularly south of Bellanagh and east of Loughduff. · Very high incidence of accidents. Accident cluster northwest of Carrigan. Accident cluster southeast of Loughduff. Accident cluster east of Cloonagh. Accident cluster east of Dring.				Budget Cost (million) €4.78
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score	
Environment	Air Quality		132 households affected in 2025	-€0.040	No	3.8	
	Noise and vibration		0 tonnes of carbon saved in 2025	€0.000	No	3.6	
	Landscape and visual quality	Not assessed	132 households affected in 2025	-€0.070	Not assessed	4.0	
	Biodiversity	The proposed realignment will cross the River Erne which flows through Lough Gowna Prnha (000992).			No	3.0	
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including three Ringforts and an Enclosure.			No	3.0	
	Landuse	The proposed realignments will primarily be within Agricultural Areas, with two sections through Wetlands and a further two sections on existing Artificial Surfaces.			No	4.0	
	Water resources	The proposed realignment will cross the River Erne which flows through Lough Gowna Prnha (000992).			No	3.0	
Safety	Accident reduction		1.1 accidents saved in 2025	€7.498		6.6	
	Security	No additional facility for walkers and cyclists is to be provided.				4.0	
Economy	Transport Efficiency and Effectiveness		207 vehicle-hours per day in travel time saved in 2025	Non-work Work €10.841 €16.796 €0.000		5.8	
				PVC Residual value €22.897 €1.775			
	Other economic impacts		Imperfect competition effects	€1.680		6.9	
	Funding	Not assessed				4.0	
Accessibility and Social Inclusion	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0	
	Deprived geographic areas		14 CLAR zones experience improved access to Hub/Gateway			7.0	
Integration	Transport integration					5.0	
	Land-use integration					4.6	
	Geographical integration					5.9	
	Integration with other government policies					4.8	
				NPV €15.582	Total	5.3	
				BCR 1.68	Red Flagged	No	



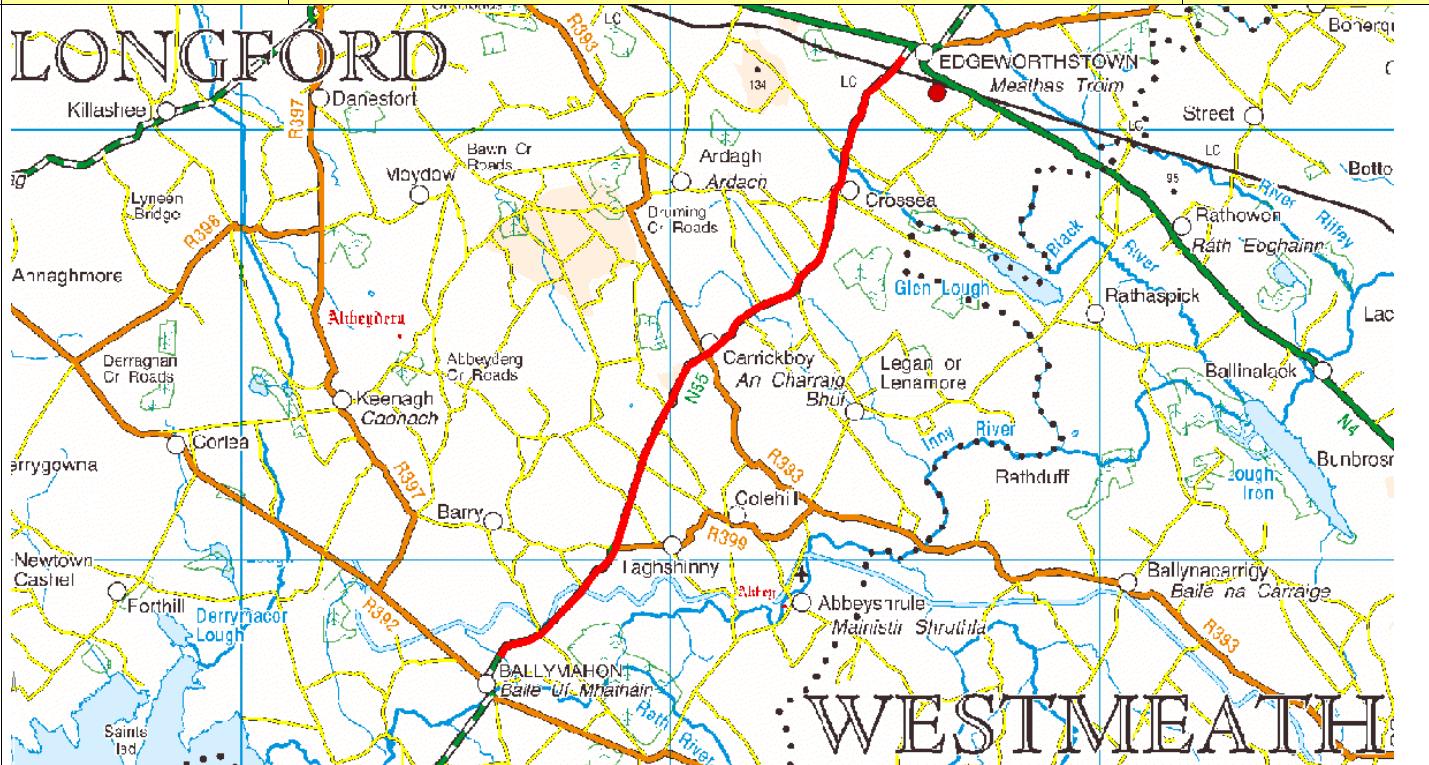
N55.a.1.T3			Name: Bellanagh to Granard					Type: S2 Type 3		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
64528	0.610	66.5	N/A	0.0	N/A	0.610	0.737	0.115	0.033	0.183
118420	3.438	66.5	2.8	0.6	3309	3.417	4.151	0.648	0.184	1.031
118448	3.255	72	1.4	0.0	3307	3.255	3.418	0.343	0.102	0.977
118447	5.332	70	1.9	0.2	3307	5.321	5.939	0.739	0.215	1.600
64674	0.320	70	1.9	0.2	3307	0.319	1.406	0.044	0.013	0.096
112586	4.750	77	0.5	0.0	3304	4.750	4.075	0.033	0.021	1.425
96313	1.550	77	0.5	0.0	3304	1.550	1.330	0.011	0.007	0.465
Bellanagh to Granard	Total 19.255					Total 19.222				
<p>Notes:</p> <p>This route is generally narrow and bendy and hilly but also has some good straight sections with overtaking opportunities. The standard varies over the length of this route. South of Bellanagh there is a very bendy and narrow section with a number of very bad bends. Within this section there is an upgraded section to Type 2 standard for approx 0.815km. There is a straight section at Corduff but it is narrow and overtaking is hampered by the poor vertical alignment. There is a speed limit restriction at Killydoon but it is proposed to carry this upgrade through this speed limit restriction. South of Killydoon N56 Upgrade Works have taken place to approximately Type 2 standard for 2.0km, there is a good overtaking section at this upgraded section. This is followed by a very bendy section through until the junction with the R394.</p> <p>1 No. very narrow stone bridge over River Erne at Killidoon (to be widened / replaced). An approx 3.0km section has been upgraded to Type 1 standard as part of the N55 Overlay – Cartronfree to Cloncovet scheme. This upgraded section has good overtaking opportunities. The remainder of this scheme is bendy and narrow however this is a good overtaking opportunity just before the speed limit restriction at Granard. The upgrades mentioned above have been deducted from the costs of this scheme.</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>Possible marshy area between Carnagh Upper and south of junction with R394.</p> <p>3 No. stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 2.6 to 3.5 – Maintenance Bracket 2</p>						TOTAL:	21.056	1.933	0.574	5.777
						Any special costs	0.400 -5.468	-0.502	-0.149	-1.500
						Grand Total	22.121			



PABS Appraisal Summary Table - N55a.1.T3						
Scheme Option: N55 Bellanagh to Granard	Description: 19.222km upgrade to S2 Type 3 standard	Problems Identified: <ul style="list-style-type: none"> <li>• Lane width &lt;3.0m for approximately all of the section. Lane width &lt; 2.75m intermittently.</li> <li>• Intermittent poor visibilities to V=85kph and V=100kph design standards, particularly south of Bellanagh and east of Loughduff.</li> <li>• Very high incidence of accidents. Accident cluster northwest of Carrigan. Accident cluster southeast of Loughduff. Accident cluster east of Cloonagh. Accident cluster east of Dring.</li> </ul>	Budget Cost (million) €2.12	Red Flag		
				Score		
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		132 households affected in 2025 1 tonnes of carbon saved in 2025	€0.008 €0.000	No	4.1
	Noise and vibration Landscape and visual quality	Not assessed	132 households affected in 2025	-€0.081	No	3.3
	Biodiversity				Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will cross the River Erne which flows through Lough Gowna Prnha (000992).			No	3.0
	Landuse	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including three Ringforts and an Enclosure. The proposed realignments will primarily be within Agricultural Areas, with two sections through Wetlands and a further two sections on existing Artificial Surfaces.			No	3.0
	Water resources	The proposed realignment will cross the River Erne which flows through Lough Gowna Prnha (000992).			No	3.0
Safety	Accident reduction		0.4 accidents saved in 2025	-€0.920		3.5
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0
	Transport Efficiency and Effectiveness		91 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €4.670 €7.172 €0.000		5.3
	Other economic impacts			PVC Residual value €13.689 €0.865		5.4
Accessibility and Social Inclusion	Funding	Not assessed	Imperfect competition effects	€0.717		6.1
	Vulnerable groups					4.0
	Deprived geographic areas	None of the route corridor is within 4km of a settlement of 1,500 people or more.	14 CLAR zones experience improved access to Hub/Gateway			7.0
	Transport integration					5.0
Integration	Land-use integration					4.6
	Geographical integration					5.9
	Integration with other government policies					4.8
				NPV	-€1 258	Total
				BCR	0.91	Red Flagged
						4.8
						No

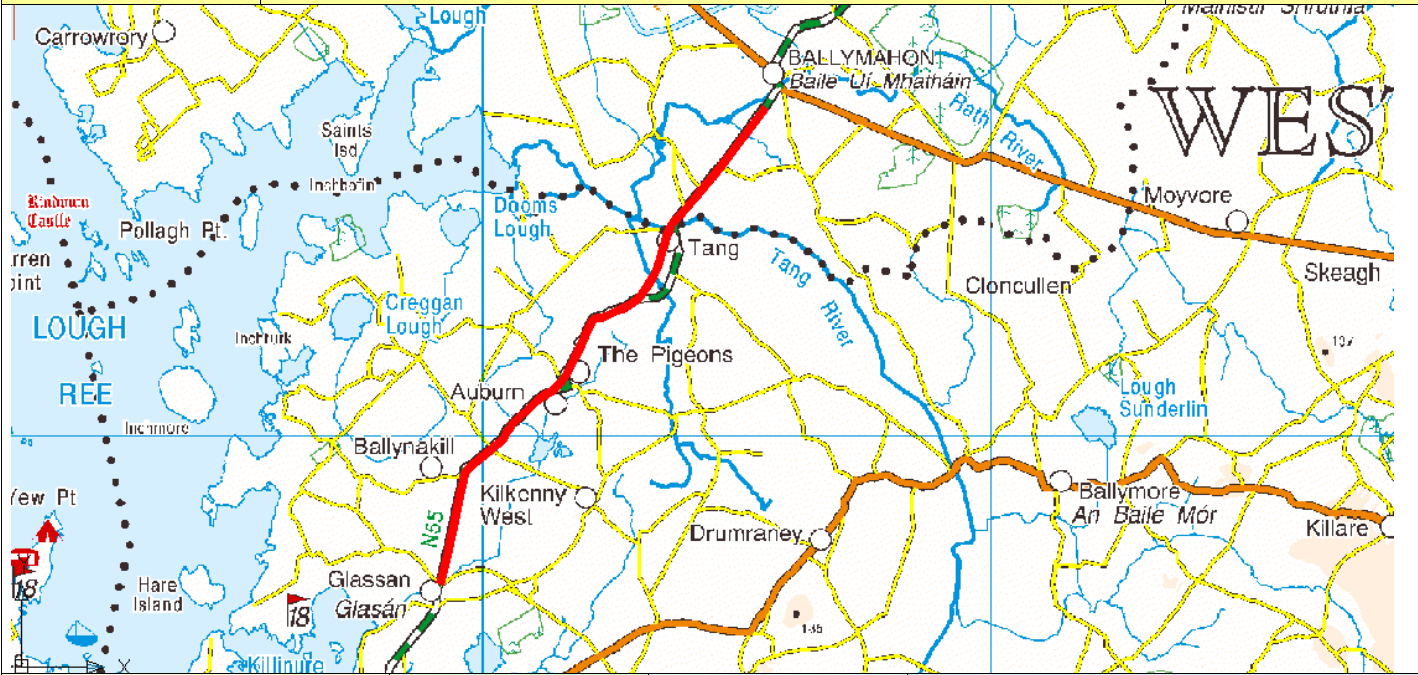
N55.c.1.T2			Name: Edgeworthstown (N4) to Ballymahon				Type: S2 Type 2					
												
Scheme Definition			Modelled as		OT Input		Scheme Cost €m					
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S		
118425	3.641	72	3.8	1.2	3304	3.597	6.210	1.341	0.273	1.092		
118426	2.188	75	2.2	0.5	3304	2.177	3.292	0.548	0.116	0.656		
95989	2.990	75	2.2	0.5	3304	2.975	4.499	0.749	0.159	0.897		
118427	0.565	75	2.2	0.5	3304	0.562	0.850	0.142	0.030	0.170		
118428	2.621	78	1.2	0.0	3303	2.621	3.324	0.289	0.069	0.786		
96145	1.940	78	1.2	0.0	3303	1.940	2.460	0.214	0.051	0.582		
118430	0.459	78	1.2	0.0	3303	0.459	0.582	0.051	0.012	0.138		
118429	3.268	75.5	2.4	0.3	3304	3.258	4.797	0.747	0.160	0.980		
Edgeworthstown (N4) to Ballymahon	Total 17.672					Total 17.589						
<p>Notes:</p> <p>This route is generally bendy and narrow though some variability in widths are noted and it is also quite hilly in places. Overtaking along this section is limited to a few short sections. The route appears to have been resurfaced and possibly widened as part of the 'N55 Edgeworthstown to Crossea Contract 2003' and while the carriageway widths may be to Type 3 standard and even Type 2 standard in places, the alignment is still very poor. The 3.6km approx into Carrickboy has a wide road reservation and therefore the land costs are not included for this section. There are speed limit restrictions through Carrickboy but it is proposed to carry out this upgrade through these speed limit restrictions. The first approx 0.575km out of Carrickboy also has a wide road reservation and so the land cost have also been reduced for this section. At Ballintober there is a good straight section but overtaking is hampered by the vertical alignment. At the junction with the R399 a local upgrade to Type 1 standard has taken place for approx 1.07km, this section is not costed for in this upgrade. The route crosses the Royal Canal at Fowlard's Bridge and the existing stone crossings should be wide enough for this upgrade. However some realignment either side of the bridge may have to take place as the existing alignment is poor at this location. From the aerial photography it can be seen that a number of local bend improvements have taken place over the years. The alignment for this route is still however very poor.</p> <p>The Royal Canal is the only environmentally designated areas of note in the vicinity of this route and it is listed as a NHA. This route crosses the Royal Canal at Fowlard's Bridge.</p> <p>10 No. stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 2.6 to 3.5 – Maintenance Bracket 2</p>							TOTAL:	26.014	4.079	0.870	5.302	
							Any special costs	-1.575	-0.964	-0.247	-0.053	-0.321
							Grand Total	33.105				

PABS Appraisal Summary Table - N55c.1.T2							
Scheme Option: N55 Edgeworthstown (N4) to Ballymahon		Description: 17.589km upgrade to S2 Type 2 standard		Problems Identified:		Budget Cost (million)  €3.11	
				<ul style="list-style-type: none"><li>· Lane widths are poor this corridor. Lane width &lt; 3.5m for 79% of this corridor. Lane width &lt; 3.0m for 58% of this corridor.</li><li>· Sight distances are poor from Edgeworthstown south to east of Ardagh, from east of Barry to Ballymahon, from Tang to The Pigeons and from Glassan to Ballykeeran.</li><li>· High incidence of accidents throughout the corridor with a major cluster of serious accidents south of Ballykeeran.</li><li>· Poor pavement condition between west of Colehill and Tang and from Ballykeeran to Athlone.</li></ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score	
Environment	Air Quality		66 households affected in 2025 -4 tonnes of carbon saved in 2025	-€0.097 €0.000	No	3.5	
	Noise and vibration Landscape and visual quality	Not assessed	66 households affected in 2025	-€0.124	No	3.3	
	Biodiversity				Not assessed	4.0	
	Cultural Heritage / archaeology	The proposed realignment will not impact directly or indirectly on any European designated sites, however, it does directly cross the Royal Canal pNHA (002103). No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including seven Ringforts, a Church, an Enclosure and a Castle – Motte and Bailey.			No	3.0	
	Landuse Water resources	The proposed realignments will primarily be within Agricultural Areas. The proposed realignments in this section of the N55 will cross the Lenamore stream and the Royal Canal pNHA (002103).			No	4.0	
Safety	Accident reduction		0.7 accidents saved in 2025	€8.655	No	3.0	
	Security	No additional facility for walkers and cyclists is to be provided.				7.0	
Economy	Transport Efficiency and Effectiveness		102 vehicle-hours per day in travel time saved in 2025	Non-work Work €4.086 €5.674 €0.000		4.7	
				PVC Residual €21.657 €1.431			
	Other economic impacts		Imperfect competition effects	€0.567		5.0	
	Funding	Not assessed				4.0	
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0	
Accessibility and Social Inclusion	Deprived geographic areas		0 CLAR zones experience improved access to Hub/Gateway			3.9	
	Transport integration						
	Land-use integration					6.0	
	Geographical integration					4.6	
	Integration with other government policies					6.4	
					4.8		
				NPV BCR	-€1.465 0.93	Total Red Flagged	4.8 No

N55.c.1.T3			Name: Edgeworthstown (N4) to Ballymahon				Type: S2 Type 3				
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
118425	3.641	72	1.3	0.0	3307	3.641	3.823	0.383	0.114	1.092	
118426	2.188	75	0.6	0.0	3305	2.188	2.058	0.107	0.035	0.656	
95989	2.99	75	0.6	0.0	3305	2.990	2.812	0.146	0.048	0.897	
118427	0.565	75	0.6	0.0	3305	0.565	0.531	0.028	0.009	0.170	
118428	2.621	78	0.3	0.0	3304	2.621	2.133	0.000	0.000	0.786	
96145	1.94	78	0.3	0.0	3304	1.940	1.579	0.000	0.000	0.582	
118430	0.459	78	0.3	0.0	3304	0.459	0.374	0.000	0.000	0.138	
118429	3.268	75.5	0.8	0.0	3305	3.268	3.008	0.127	0.043	0.980	
Edgeworthstown (N4) to Ballymahon	Total 17.672					Total 17.672					
Notes: This route is generally bendy and narrow though some variability in widths are noted, and it is also quite hilly in places. Overtaking along this section is limited to a few short sections. The route appears to have been resurfaced and possibly widened as part of the 'N55 Edgeworthstown to Crossea Contract 2003' and while the carriageway widths may be to Type 3 standard and even Type 2 standard in places, the alignment is still very poor. The 3.6km approx into Carrickboy has a wide road reservation and therefore the land costs are not included for this section. There are speed limit restrictions through Carrickboy but it is proposed to carry out this upgrade through these speed limit restrictions. The first approx 0.575km out of Carrickboy also has a wide road reservation and so the land cost have also been reduced for this section. At Ballintober there is a good straight section but overtaking is hampered by the vertical alignment. At the junction with the R399 a local upgrade to Type 1 standard has taken place for approx 1.07km, this section is not costed for in this upgrade. The route crosses the Royal Canal at Fowland's Bridge and the existing stone crossings should be wide enough for this upgrade. However some realignment either side of the bridge may have to take place as the existing alignment is poor at this location. From the aerial photography it can be seen that a number of local bend improvements have taken place over the years. The alignment for this route is still however very poor. The Royal Canal is the only environmentally designated areas of note in the vicinity of this route and it is listed as a NHA. This route crosses the Royal Canal at Fowland's Bridge. 10 No. stream crossings. Low Traffic Good Subgrade – Maintenance Category 1 IRI 2.6 to 3.5 – Maintenance Bracket 2							TOTAL:	16.319	0.791	0.249	5.302
							Any special costs	-0.988	-0.187 -0.048	-0.015	-0.321
							Grand Total	21.102			



PABS Appraisal Summary Table - N55c.1.T3						
Scheme Option: N55 Edgeworthstown (N4) to Ballymahon		Description: 17.672km upgrade to S2 Type 3 standard		Problems Identified: · Lane widths are poor this corridor. Lane width < 3.5m for 79% of this corridor. Lane width < 3.0m for 58% of this corridor. · Sight distances are poor from Edgeworthstown south to east of Ardagh, from east of Barry to Ballymahon, from Tang to The Pigeons and from Glasan to Ballykeeran. · High incidence of accidents throughout the corridor with a major cluster of serious accidents south of Ballykeeran. · Poor pavement condition between west of Colehill and Tang and from Ballykeeran to Athlone.		Budget Cost (million) €1.10
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		66 households affected in 2025 -1 tonnes of carbon saved in 2025	-€0.030 €0.000	No	3.7
	Noise and vibration Landscape and visual quality		66 households affected in 2025	€0.113	No	5.0
	Biodiversity				Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will not impact directly or indirectly on any European designated sites, however, it does directly cross the Royal Canal pNHA (002103). No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including seven Ringforts, a Church, an Enclosure and a Castle – Motte and Bailey.			No	3.0
	Landuse Water resources	The proposed realignments will primarily be within Agricultural Areas. The proposed realignments in this section of the N55 will cross the Lenamore stream and the Royal Canal pNHA (002103).			No	4.0
Safety	Accident reduction		0.2 accidents saved in 2025	€2.162	No	3.0
	Security	No additional facility for walkers and cyclists is to be provided.				5.3
Economy	Transport Efficiency and Effectiveness					4.0
			33 vehicle-hours per day in travel time saved in 2025	Non-work Work €1.845 €0.000		4.2
				PVC Residual value €13.187 €0.700		
	Other economic impacts		Imperfect competition effects	€0.184		4.6
Accessibility and Social Inclusion	Funding	Not assessed				4.0
	Vulnerable groups Deprived geographic areas	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
			0 CLAR zones experience improved access to Hub/Gateway			
	Transport integration					6.0
	Land-use integration Geographical integration Integration with other government policies					4.6 6.4 4.8
				NPV	Total	4.5
				BCR	Red Flagged	No
				-€8.085	0.39	

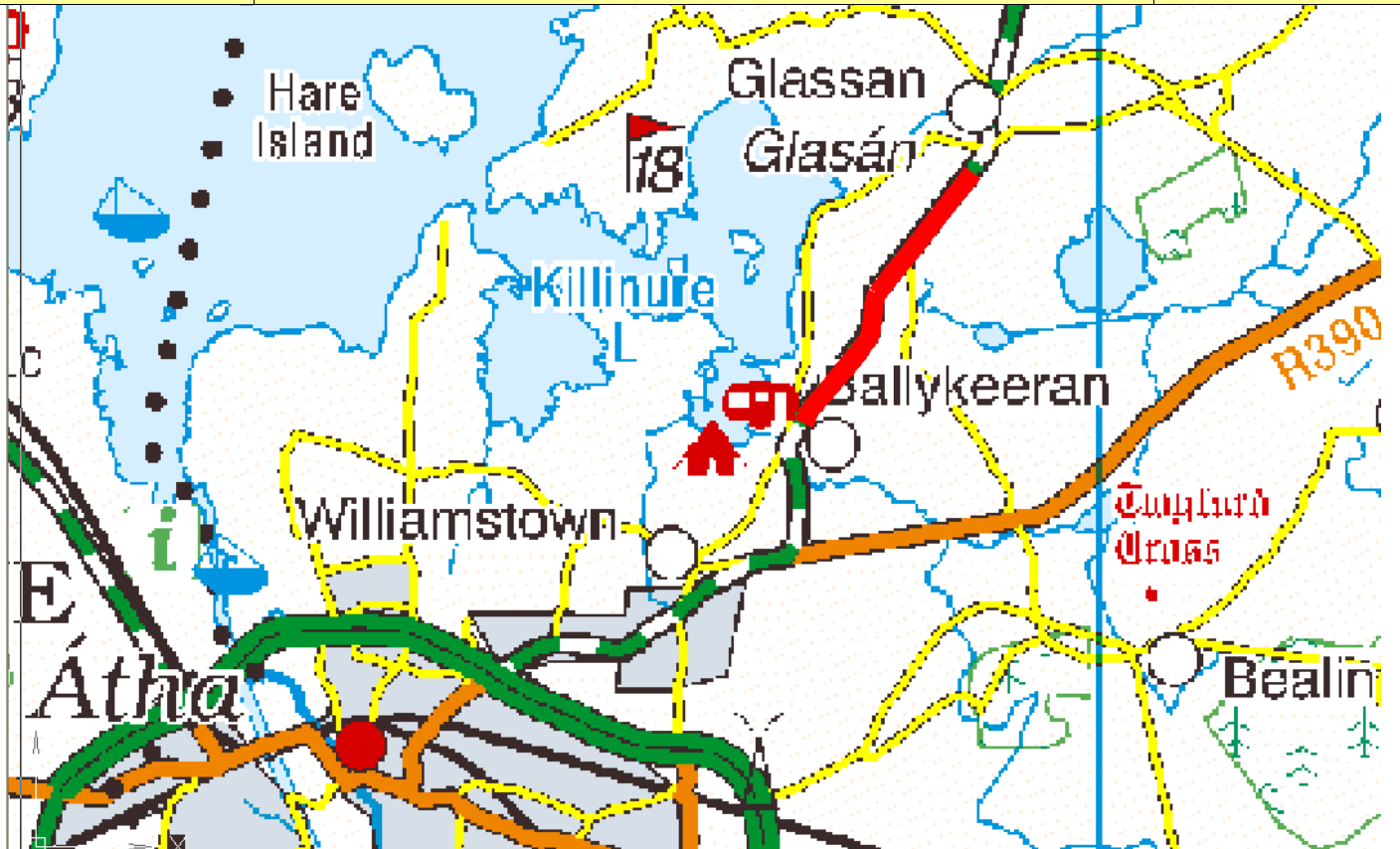
N55.c.2.T2			Name: Ballymahon to Glassan					Type: S2 Type 2				
												
Scheme Definition			Modelled as		OT Input		Scheme Cost €m					
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S		
118431	2.547	75.5	2.4	0.3	3304	2.539	3.739	0.582	0.125	0.764		
120221 (Former link no. 118434)	0.170 (Former link length3.685)	70	4.7	2.0	3304	0.167	0.309	0.074	0.015	0.051		
120230	2.000	N/A		0.0	3303	2.000	4.600	1.400	0.260	0.600		
120224 (Former link no. 118434)	1.198 (Former link length3.685)	70	4.7	2.0	3304	1.174	2.180	0.520	0.104	0.359		
118436	3.412	76	1.9	0.2	3303	3.405	4.879	0.704	0.152	1.024		
118435	0.571	77	1.5	0.1	3303	0.570	0.771	0.091	0.020	0.171		
118439	1.888	77	1.5	0.1	3303	1.886	2.551	0.301	0.068	0.566		
Ballymahon to Glassan	Total 11.786					Total 11.741						
<b>Notes:</b> This route is generally very bendy and hilly and has very little overtaking opportunity for long stretches. However there is one good overtaking opportunity at the straight section coming out of Ballymahon for 1.6km, after which there is no overtaking for 4.4km until the Type 1 or 2 standard section near The Pigeons. There is a speed limit restriction at Tang and it could be proposed to continue this upgrade through this speed limit restriction. However, realistically, local upgrades through here could be somewhat difficult. Therefore this route option includes for a short section offline at Tang. The section Type 1 or 2 standard near The Pigeons is approx 1.4km in length and is removed from the costs. There are no environmentally designated areas in the vicinity of this route. 1 No. New Tang River Crossing (medium structure) 1 No. Creggy River Crossing (existing very narrow stone bridge will have to be widened / replaced) 2 No. stream crossings. Low Traffic Good Subgrade – Maintenance Category 1 IRI 2.6 to 3.5 – Maintenance Bracket 2  Split Link @ (213850, 254334) Resulting Link -> 120221 Split Link @ (212908, 252618) Resulting Link -> 120224							TOTAL:	19.028	3.672	0.744	3.536	
							Any special costs	0.500 -2.260	-0.436	-0.088	-0.420	
							Grand Total	24.276				

PABS Appraisal Summary Table - N55c.2.T2						
Scheme Option: N55 Ballymahon to Glassan		Description: 11.741km upgrade to S2 Type 2 standard		Problems Identified: · Lane widths are poor this corridor. Lane width < 3.5m for 79% of this corridor. Lane width < 3.0m for 58% of this corridor. · Sight distances are poor from Edgeworthstown south to east of Ardagh, from east of Barry to Ballymahon, from Tang to The Pigeons and from Glassan to Ballykeeran. · High incidence of accidents throughout the corridor with a major cluster of serious accidents south of Ballykeeran. · Poor pavement condition between west of Colehill and Tang and from Ballykeeran to Athlone.		Budget Cost (million) <b>€3.28</b>
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	
Environment	Air Quality		88 households affected in 2025 2 tonnes of carbon saved in 2025	€0.018 €0.000	No	4.1
	Noise and vibration Landscape and visual quality		88 households affected in 2025	-€0.124	No	3.1
		Not assessed			Not assessed	4.0
	Biodiversity		The proposed realignments in this section of the N55 will cross the Tang River which discharges to Lough Rea SAC & pNHA (000440) and Lough Rea SPA (004046).		Yes	2.0
	Cultural Heritage / archaeology		No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including a House – Indeterminate date, two Ringforts, an Enclosure, a Windmill and two Earthworks.		No	3.0
	Landuse		The proposed realignments will primarily be within Agricultural Areas with a small proportion through existing Artificial Surfaces.		No	4.0
	Water resources		The proposed realignments in this section of the N55 will cross the Tang River which discharges to Lough Rea SAC & pNHA (000440) and Lough Rea SPA (004046).		No	3.0
	Accident reduction		1.5 accidents saved in 2025	€19.770		7.0
Safety	Security		No additional facility for walkers and cyclists is to be provided.			4.0
Economy	Transport Efficiency and Effectiveness		385 vehicle-hours per day in travel time saved in 2025	Non-work Work €22.804 €28.202 €0.000		7.0
				PVC Residual value €16.840 €1.164		
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	€2.820		7.0
	Funding		Not assessed			4.0
	Vulnerable groups		None of the route corridor is within 4km of a settlement of 1,500 people or more.			4.0
	Deprived geographic areas		1 CLAR zones experience improved access to Hub/Gateway			4.4
	Transport integration					5.0
Integration	Land-use integration					4.6
	Geographical integration					6.4
	Integration with other government policies					4.8
				NPV	€57.814	<b>Total</b>
				BCR	4.43	<b>Red Flagged</b>
						<b>5.5</b>
						<b>Yes</b>

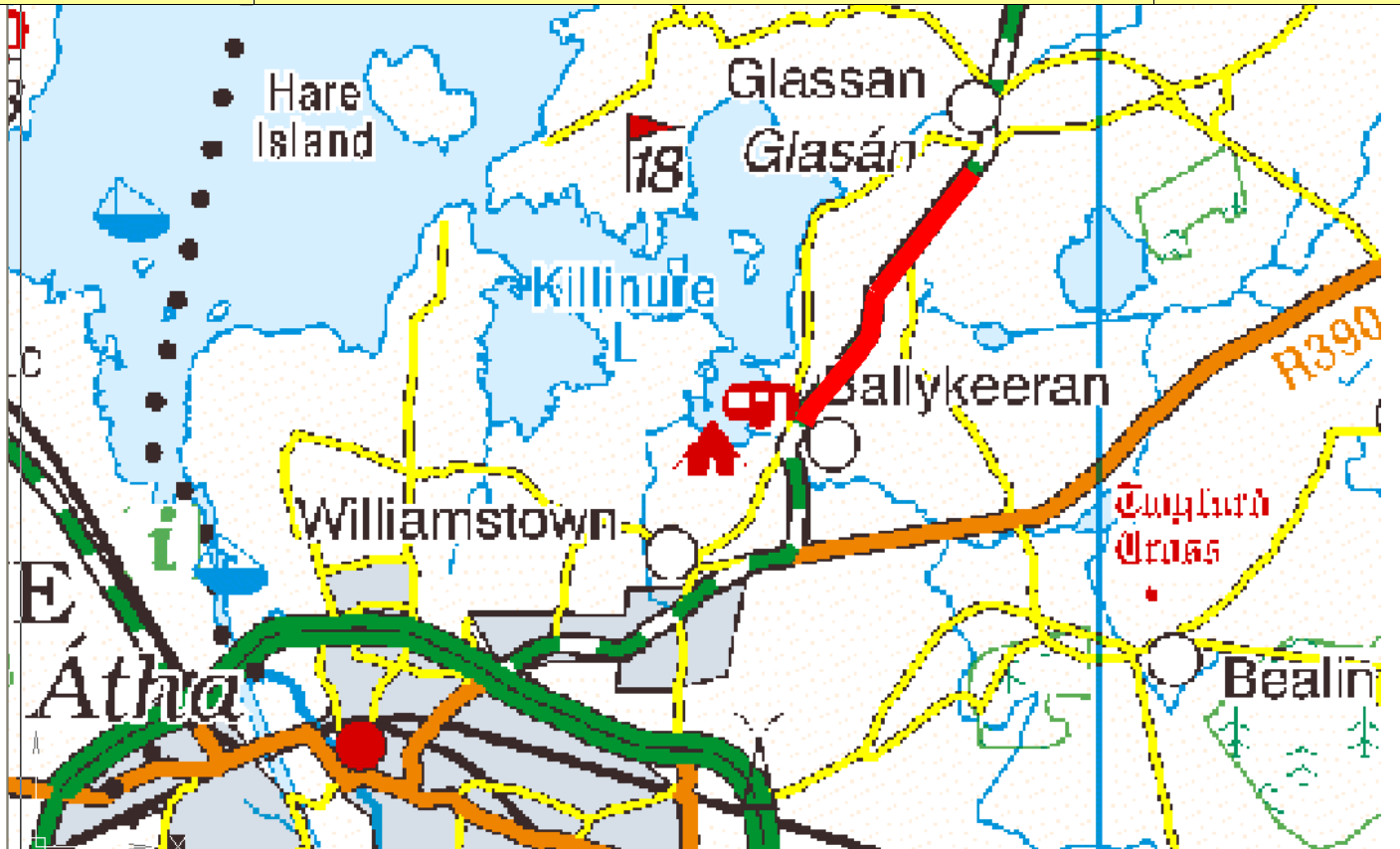
N55.c.2.T3			Name: Ballymahon to Glassan					Type: S2 Type 3		
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118431	2.547	75.5	0.8	0.0	3305	2.547	2.345	0.099	0.034	0.764
120221 (Former link no. 118434)	0.170 (Former link length 3.685)	70	1.7	0.2	3307	0.170	0.189	0.024	0.007	0.051
120230	2.000	N/A		0.0	3305	2.000	3.500	1.000	0.260	0.600
120224 (Former link no. 118434)	1.198 (Former link length 3.685)	70	1.7	0.2	3307	1.196	1.334	0.166	0.048	0.359
118436	3.412	76	0.5	0.0	3304	3.412	3.071	0.097	0.035	1.024
118435	0.571	77	0.4	0.0	3305	0.571	0.490	0.004	0.003	0.171
118439	1.888	77	0.4	0.0	3305	1.888	1.620	0.013	0.008	0.566
Ballymahon to Glassan	Total 11.786					Total 11.784				
<p>Notes:</p> <p>This route is generally very bendy and hilly and has very little overtaking opportunity for long stretches. However there is one good overtaking opportunity at the straight section coming out of Ballymahon for 1.6km, after which there is no overtaking for 4.4km until the Type 1 or 2 standard section near The Pigeons. There is a speed limit restriction at Tang and it could be proposed to continue this upgrade through this speed limit restriction. However, realistically, local upgrades through here could be somewhat difficult. Therefore this route option includes for a short section offline at Tang. The section Type 1 or 2 standard near The Pigeons is approx 1.4km in length and is removed from the costs. There are no environmentally designated areas in the vicinity of this route.</p> <p>1 No. New Tang River Crossing (medium structure)</p> <p>1 No. Creggy River Crossing (existing very narrow stone bridge will have to be widened / replaced)</p> <p>2 No. stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 2.6 to 3.5 – Maintenance Bracket 2</p> <p>Split Link @ (213850, 254334) Resulting Link -&gt; 120221</p> <p>Split Link @ (212908, 252618) Resulting Link -&gt; 120224</p>						TOTAL:	12.549	1.402	0.395	3.536
						Any special costs	0.400 -1.491	-0.167	-0.047	-0.420
						Grand Total	16.157			




PABS Appraisal Summary Table - N55c.2.T3						
Scheme Option: N55 Ballymahon to Glassan		Description: 11.784km upgrade to S2 Type 3 standard		Problems Identified: · Lane widths are poor this corridor. Lane width < 3.5m for 79% of this corridor. Lane width < 3.0m for 58% of this corridor. · Sight distances are poor from Edgeworthstown south to east of Ardagh, from east of Barry to Ballymahon, from Tang to The Pigeons and from Glassan to Ballykeeran. · High incidence of accidents throughout the corridor with a major cluster of serious accidents south of Ballykeeran. · Poor pavement condition between west of Colehill and Tang and from Ballykeeran to Athlone.		Budget Cost (million) €16.16
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		88 households affected in 2025 2 tonnes of carbon saved in 2025	€0.029 €0.000	No	4.3
	Noise and vibration Landscape and visual quality		88 households affected in 2025	€0.119	No	5.3
	Biodiversity	Not assessed			Not assessed	4.0
					Yes	2.0
	Cultural Heritage / archaeology	The proposed realignments in this section of the N55 will cross the Tang River which discharges to Lough Rea SAC & pNHA (000440) and Lough Rea SPA (004046).			No	3.0
		No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including a House – Indeterminate date, two Ringforts, an Enclosure, a Windmill and two Earthworks.				
	Landuse	The proposed realignments will primarily be within Agricultural Areas with a small proportion through existing Artificial Surfaces.			No	4.0
	Water resources	The proposed realignments in this section of the N55 will cross the Tang River which discharges to Lough Rea SAC & pNHA (000440) and Lough Rea SPA (004046).			No	3.0
Safety	Accident reduction		0.8 accidents saved in 2025	€6.327		7.0
	Security	No additional facility for walkers and cyclists is to be provided.				4.0
Economy	Transport Efficiency and Effectiveness		228 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €13.734 €17.082 €0.000		7.0
				PVC Residual value €10.788 €0.653		
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	€1.708		7.0
	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		1 CLAR zones experience improved access to Hub/Gateway			4.5
	Transport integration					5.0
	Land-use integration					4.6
Integration	Geographical integration					6.4
	Integration with other government policies					4.8
				NPV	€28,865	Total
				BCR	3.68	Red Flagged
						5.6
						Yes

N55.c.3.T2			Name: Glassan to Ballykeeran					Type: S2 Type 2		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118442	1.251	77	1.5	0.1	3303	1.250	1.690	0.199	0.045	0.375
118444	1.247	73	3.3	1.4	3304	1.230	2.048	0.413	0.085	0.374
Glassan to Ballykeeran	Total 2.498					Total 2.480				
<p>Notes:</p> <p>This route is very narrow, bendy and hilly. It has very poor vertical and horizontal alignments. There is one very short overtaking section and the vertical alignment is particularly restrictive.</p> <p>Killinure Lough and Ballaghkeeran Bay are in some proximity to this route and are both environmentally designated as NHA's, SPA's and SAC's.</p> <p>Large stone walls present coming out of Glassan.</p> <p>3 No. bad bends.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p>						TOTAL:	3.738	0.613	0.130	0.749
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	5.230			

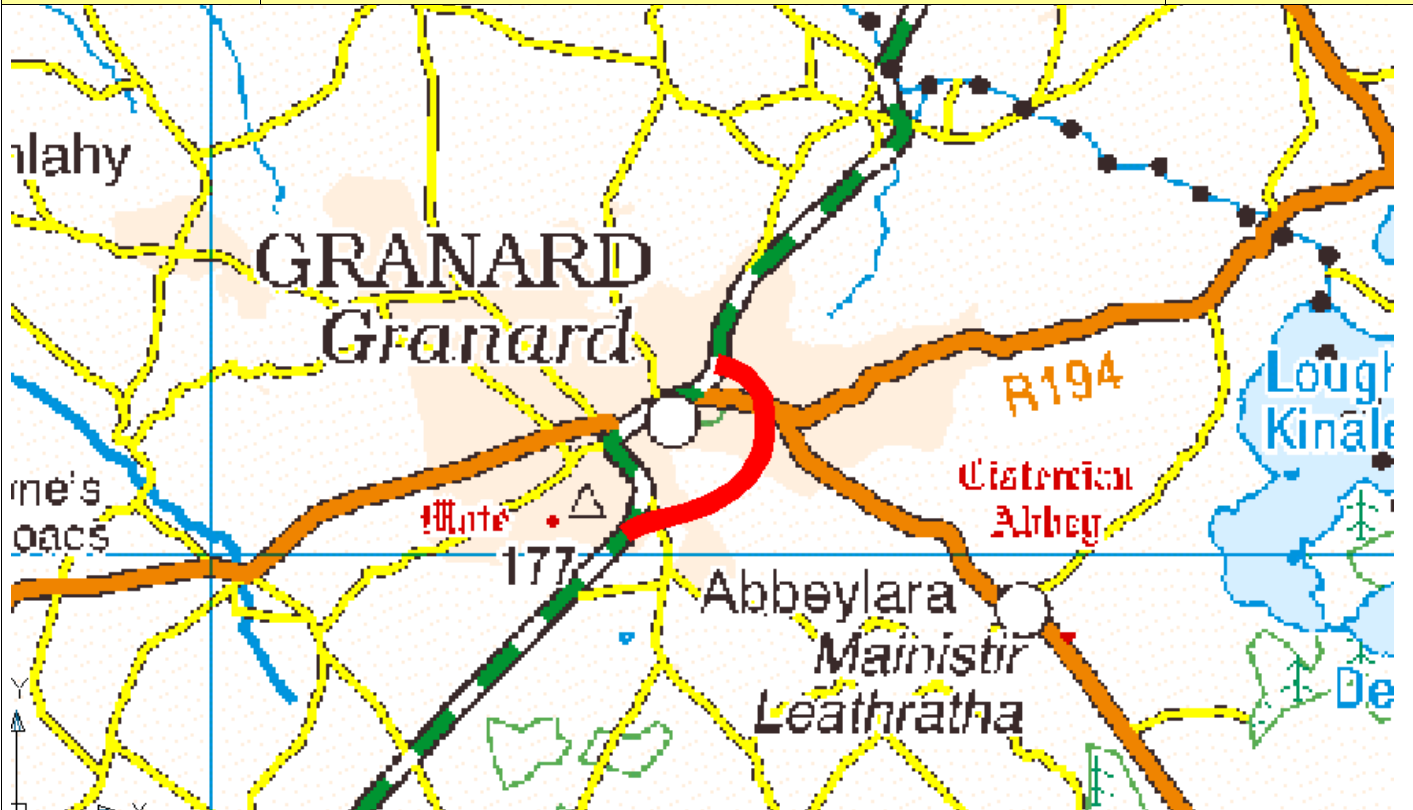
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N55.c.3.T3			Name: Glassan to Ballykeeran					Type: S2 Type 3		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118442	1.251	77	0.4	0.0	3305	1.251	1.073	0.009	0.005	0.375
118444	1.247	73	1.1	0.1	3306	1.246	1.266	0.109	0.033	0.374
Glassan to Ballykeeran	Total 2.498					Total 2.497				
<p>Notes:</p> <p>This route is very narrow, bendy and hilly. It has very poor vertical and horizontal alignments. There is one very short overtaking section and the vertical alignment is particularly restrictive.</p> <p>Killinure Lough and Ballaghkeeran Bay are in some proximity to this route and are both environmentally designated as NHA's, SPA's and SAC's.</p> <p>Large stone walls present coming out of Glasson.</p> <p>3 No. bad bends.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p>						TOTAL:	2.340	0.118	0.039	0.749
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	3.246			

PABS Appraisal Summary Table - N55c.3.T3						
Scheme Option: N55 Glissan to Ballykeeran		Description: 2.497km upgrade to S2 Type 3 standard	Problems Identified: <ul style="list-style-type: none"><li>- Lane widths are poor this corridor. Lane width &lt; 3.5m for 79% of this corridor. Lane width &lt; 3.0m for 58% of this corridor.</li><li>- Sight distances are poor from Edgeworthstown south to east of Ardagh, from east of Barry to Ballymahon, from Tang to The Pigeons and from Glissan to Ballykeeran.</li><li>- High incidence of accidents throughout the corridor with a major cluster of serious accidents south of Ballykeeran.</li><li>- Poor pavement condition between west of Colehill and Tang and from Ballykeeran to Athlone.</li></ul>			Budget Cost (million) €3.25
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		24 households affected in 2025 0 tonnes of carbon saved in 2025	€0.000	No	4.0
	Noise and vibration		24 households affected in 2025	€0.000	No	4.0
	Landscape and visual quality	Not assessed			Not assessed	4.0
	Biodiversity	The proposed realignment may impact indirectly on Lough Rea SAC & pNHA (000440) and Lough Rea SPA (004046).			Yes	2.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including two NIAH structures.			No	3.0
Safety	Landuse	The proposed realignments will primarily be within Agricultural Areas with a small proportion through existing Artificial Surfaces.			No	4.0
	Water resources	The proposed realignment may impact indirectly on Lough Rea SAC & pNHA (000440) and Lough Rea SPA (004046).			Yes	2.5
	Accident reduction		0.0 accidents saved in 2025	€0.564		6.1
	Security	No additional facility for walkers and cyclists is to be provided.				4.0
Economy	Transport Efficiency and Effectiveness		12 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €0.651 €0.828 €0.000		5.0
				PVC Residual value €2.124 €0.112		
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	€0.083		5.6
	Funding	Not assessed				4.0
	Vulnerable groups	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		0 CLAR zones experience improved access to Hub/Gateway			4.0
	Transport integration					5.0
Integration	Land-use integration					4.6
	Geographical integration					6.4
	Integration with other government policies					4.8
				NPV BCR	€0.114 1.05	Total Red Flagged

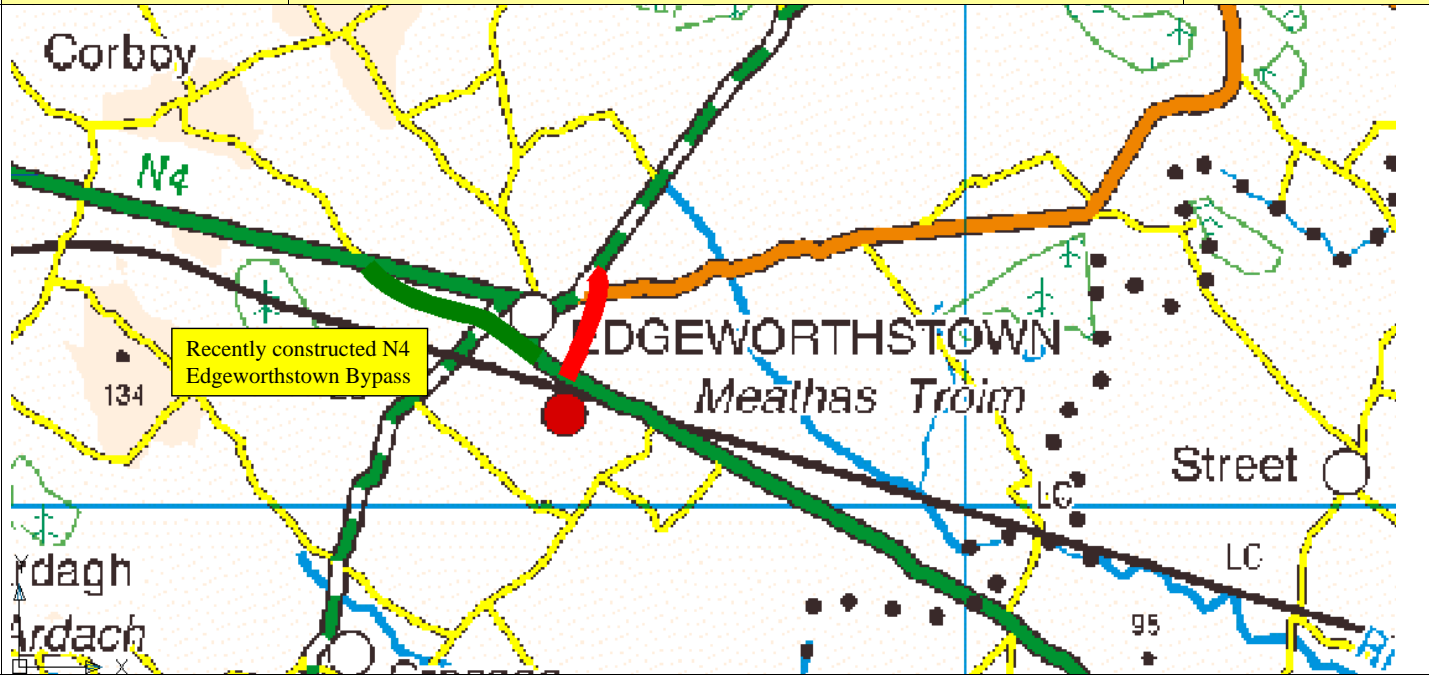
N55.r.1.T2			Name: Bellanagh Relief Road				Type: S2 Type 2			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120233	1.269	N/A	N/A	0.0	3305	1.269	2.918	0.889	0.165	0.380
120234	0.572	N/A	N/A	0.0	3305	0.572	1.316	0.400	0.074	0.172
Bellananagh Relief Road						Total 1.841				
<p>Notes:</p> <p>This route passes to the east of Bellananagh and bypasses the narrow streets and 2 No t-junctions in Bellananagh. The N55 does not have the right of way through Bellannagh. There are no environmentally designated areas in the vicinity of this route.</p> <p>1 No. junction with the R154.</p> <p>1 No. junction with a local access road.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>Link 1 – Split link 118420 @ (238452, 297029) and join resulting node to node 32657 on the R154</p> <p>Link 2 – Join Node 32567 on the R154 to node 32660 on the N55.</p>						TOTAL:	4.234	1.289	0.239	0.552
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	6.314			

PABS Appraisal Summary Table - N55r.1.T2						
Scheme Option: N55 Bellanagh Relief Road		Description: 1.841km upgrade to S2 Type 3 standard	Problems Identified:		Budget Cost (million) €3.31	
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		0 households affected in 2025 0 tonnes of carbon saved in 2025	€0.000	No	4.0
	Noise and vibration Landscape and visual quality		0 households affected in 2025	€0.000	No	4.0
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No	4.0
	Landuse	No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned sections of the route.			No	4.0
	Water resources	The proposed realignments will primarily be within Agricultural Areas.			No	4.0
Safety	Accident reduction	The proposed realignments in this section of the N55 will not cross any water courses.			No	4.0
Economy	Security		0.9 accidents saved in 2025	€1.771		7.0
	Transport Efficiency and Effectiveness	No additional facility for walkers and cyclists is to be provided.				4.0
			148 vehicle-hours per day in travel time saved in 2025	Non-work Work €8.274 €9.697		7.0
				Active travel €0.000		
				PVC Residual value €4.727 €0.374		
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	€0.970		7.0
	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				
	Deprived geographic areas		14 CLAR zones experience improved access to Hub/Gateway			7.0
	Transport integration					
Integration	Land-use integration					5.0
	Geographical integration					4.6
	Integration with other government policies					5.9
						4.8
				NPV	€16.359	Total
				BCR	4.46	Red Flagged
						5.7
						No

N55.r.2.T2			Name: Granard Relief Road					Type: S2 Type 2						
														
Scheme Definition			Modelled as		OT Input		Scheme Cost €m							
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S				
120253	1.486	N/A	N/A	0.0	3303	1.4857	3.418	1.040	0.193	0.446				
120254	0.734	N/A	N/A	0.0	3303	0.7343	1.688	0.514	0.096	0.220				
Granard Relief Road						Total 2.220								
<p>Notes:</p> <p>This route passes to the east of Granard and connects with the R194. the route bypasses a number of bad bends within the speed limit restrictions of Granard.</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>1 No junction with the R194</p> <p>2 No stream crossings.</p> <p>Possible boggy areas for approx 500m.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>Split link 118422 @ (233286, 280182) resulting node 5003</p> <p>Split link 96007 @ (234323, 281188) resulting node 5004</p> <p>Split link 96313 @ (234074, 281837) resulting node 5005.</p> <p>Link 120253 joins nodes 5003 and 5004</p> <p>Link 120254 joins nodes 5004 and 5005.</p>						TOTAL:	5.106	1.554	0.289	0.666				
						Any special costs	0.500	0.000	0.000	0.000				
						Grand Total					8.115			



PABS Appraisal Summary Table - N55r.2.T2						
Scheme Option: N55 Granard Relief Road		Description: 2.22km upgrade to S2 Type 3 standard	Problems Identified:			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		0 households affected in 2025 0 tonnes of carbon saved in 2025	€0.000	No	4.0
	Noise and vibration Landscape and visual quality		0 households affected in 2025	€0.000	No	4.0
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No	4.0
	Landuse	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including a Mound Barrow and an Enclosure.			No	3.0
	Water resources	The proposed realignments will primarily be within Agricultural Areas.			No	4.0
		The proposed realignments in this section of the N55 will not cross any water courses.			No	4.0
Safety	Accident reduction Security		0.6 accidents saved in 2025	€2.020		6.8
Economy	Transport Efficiency and Effectiveness	No additional facility for walkers and cyclists is to be provided.				4.0
			73 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €3.578 €6.565 €0.000		6.6
				PVC Residual value €5.856 €0.471		
	Other economic impacts Funding	Not assessed	Imperfect competition effects	€0.657		7.0
Accessibility and Social Inclusion	Vulnerable groups Deprived geographic areas	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
			1 CLAR zones experience improved access to Hub/Gateway			3.2
Integration	Transport integration					5.0
	Land-use integration					4.6
	Geographical integration					5.9
	Integration with other government policies					4.8
				NPV	€7 435	Total
				BCR	2.27	Red Flagged
						5.4
						No
						Budget Cost (million) €8.12


N55.r.3.T1			Name: Edgeworthstown Relief Road				Type: S2 Type 1			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120259	0.832	N/A	N/A	0.0	3301	0.832	2.579	0.749	0.108	0.250
120260	0.238	N/A	N/A	0.0	3301	0.238	0.738	0.214	0.031	0.071
Edgeworthstown Relief Road						Total 1.070				
<p>Notes:</p> <p>This route passes to the east of Edgeworthstown and connects with the R395, the N4 eastbound. This scheme would link the N55 up with the N4 Edgeworthstown Bypass and complete the bypass of Edgeworthstown for the major routes.</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>1 No. junction with the N4.</p> <p>1 No. junction with the R395.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>N4 – Split link @ (226243, 271209) – resulting node 5006</p> <p>R395 – Split link @ (226508, 271991) – resulting node 5007</p> <p>Link 120259 joins node 5006 to 5007</p> <p>Link 120260 joins node 5007 to 48512</p>						TOTAL:	3.317	0.963	0.139	0.321
						Any special costs	0.000	0.000	0.000	0.000

PABS Appraisal Summary Table - N55r.3.T1						
Scheme Option: N55 Edgeworthstown Relief Road		Description: 1.07km upgrade to S2 Type 1 standard	Problems Identified:			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		0 households affected in 2025 0 tonnes of carbon saved in 2025	€0.000 €0.000	No	4.0
	Noise and vibration Landscape and visual quality		0 households affected in 2025	€0.000	No	4.0
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No	3.0
	Landuse	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including a Monument Structure and a Ringfort - Rath.			No	4.0
	Water resources	The proposed realignments will primarily be within Agricultural Areas, with a small proportion through existing Artificial Surfaces.			No	4.0
		The proposed realignments in this section of the N55 will not cross any water courses.				
Safety	Accident reduction Security		0.3 accidents saved in 2025	€0.918		6.0
		No additional facility for walkers and cyclists is to be provided.				4.0
Economy	Transport Efficiency and Effectiveness		29 vehicle-hours per day in travel time saved in 2025	Non-work Work €0.265 €1.588 €0.000		4.8
				PVC Residual value €3.600 €0.286		
	Other economic impacts Funding		Imperfect competition effects	€0.159		5.8
	Vulnerable groups Deprived geographic areas		5 CLAR zones experience improved access to Hub/Gateway			4.0
Accessibility and Social Inclusion	Transport integration					6.6
	Land-use integration					
	Geographical integration					6.0
	Integration with other government policies					4.6
						5.9
						4.8
				NPV BCR	-€0.385 0.89	Total Red Flagged
						4.9 No
						Budget Cost (million) €4.74

N55.r.4.T3			Name: Ballymahon Relief Road					Type: S2 Type 3			
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
120278	2.019	N/A	N/A	0.0	3305	2.019	3.533	1.010	0.262	0.606	
Ballymahon Relief Road						Total 2.019					
<p>Notes:</p> <p>This route passes to the east of Ballymahon. The N55 does not have right of way through Ballymahon. This route bypasses 2 No junctions within Ballymahon between the N55 and the R392.</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>1 No. skewed Inny River crossing (medium structure)</p> <p>1 No stream crossing.</p> <p>1 No. junction with a local road.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>Split link 118429 @ (216922, 258246) – resulting node 5008.</p> <p>Link 120278 joins nodes 5008 and 48614.</p>						TOTAL:	3.533	1.010	0.262	0.606	
						Any special costs	0.400	0.000	0.000	0.000	
						Grand Total					5.811

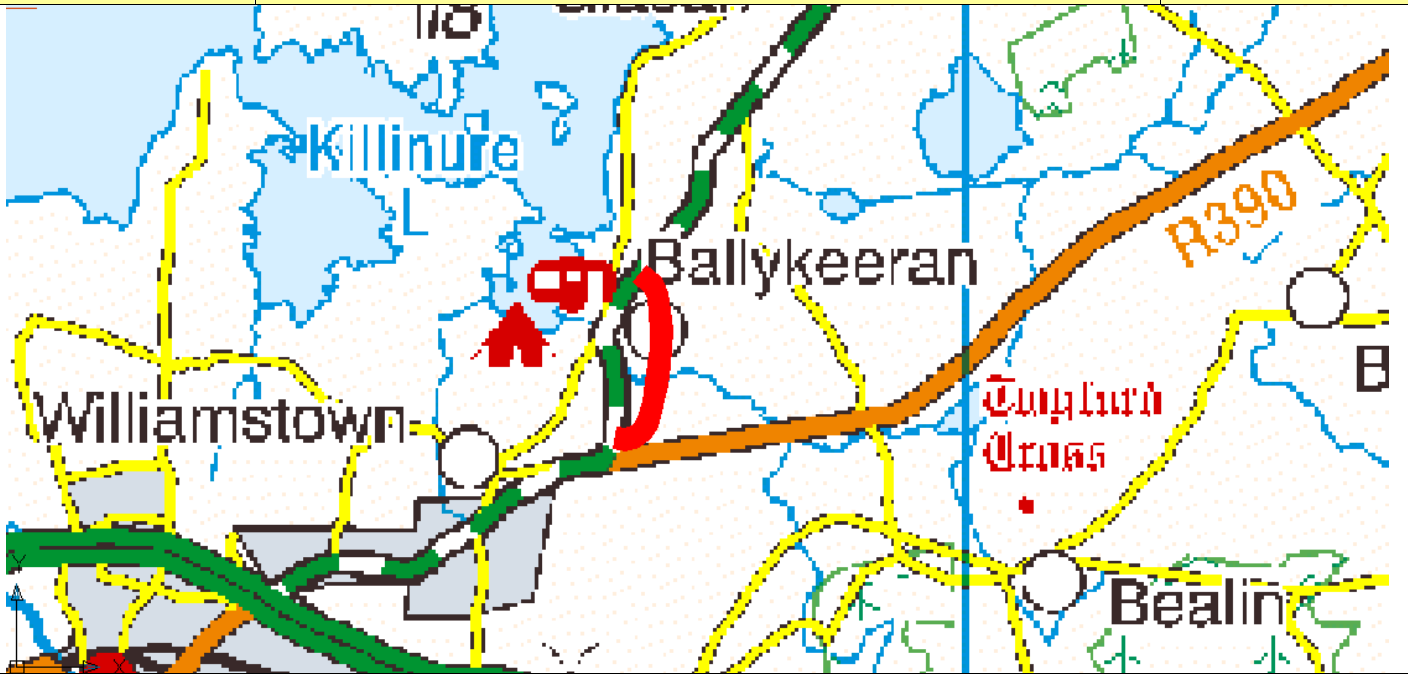
PABS Appraisal Summary Table - N55r.4.T3						
Scheme Option: N55 Ballymahon Relief Road		Description: 2.019km upgrade to S2 Type 3 standard		Problems Identified:		Budget Cost (million) €5.81
Objective	Sub-objective	Qualitative impacts		Quantitative assessment	Monetised (million 30 yrs)	Red Flag
Environment	Air Quality			0 households affected in 2025 0 tonnes of carbon saved in 2025 0 households affected in 2025	€0.000 €0.000 €0.000	No No Not assessed
	Noise and vibration					4.0
	Landscape and visual quality	Not assessed				4.0
	Biodiversity	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.				4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including a Graveyard and a Church.				3.0
	Landuse	The proposed realignments will primarily be within Agricultural Areas, with a small proportion through existing Artificial Surfaces.				4.0
Safety	Water resources	The proposed realignments in this section of the N55 will cross the River Inny.				No
	Accident reduction			0.8 accidents saved in 2025	€1.241	6.2
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0
	Transport Efficiency and Effectiveness			138 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel PVC Residual value	7.0
					€5.885 €9.838 €0.000	
					€4.457 €0.318	
Accessibility and Social Inclusion	Other economic impacts			Imperfect competition effects	€0.984	7.0
	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas			0 CLAR zones experience improved access to Hub/Gateway		1.0
	Transport integration					5.0
	Land-use integration					4.6
Integration	Geographical integration					6.4
	Integration with other government policies					4.8
				NPV	€13.808	Total
				BCR	4.10	Red Flagged
						5.3
						No

Budget  
Cost  
(million)  
€5.81

N55.r.5.T1			Name: Glassan Relief Road				Type: S2 Type 1			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120295	1.694	N/A	N/A	0.0	3301	1.694	5.251	1.525	0.220	0.508
Glassan Relief Road						Total 1.694				
<p>Notes:</p> <p>This route passes to the east of Glassan, connects with 2 No. local roads and bypasses the centre of Glassan. It is proposed that this route be connected to the existing N55 with roundabouts at either end.</p> <p>There is a small environmentally designated NHA to the south of this route.</p> <p>2 No. junctions with local roads.</p> <p>2 No. junctions with local access roads.</p> <p>1 No. stream crossing.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>Split link 118439 @ (209284, 247693)</p> <p>Split link 118442 @ (208879, 246343)</p>						TOTAL:	5.251	1.525	0.220	0.508
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	7.504			

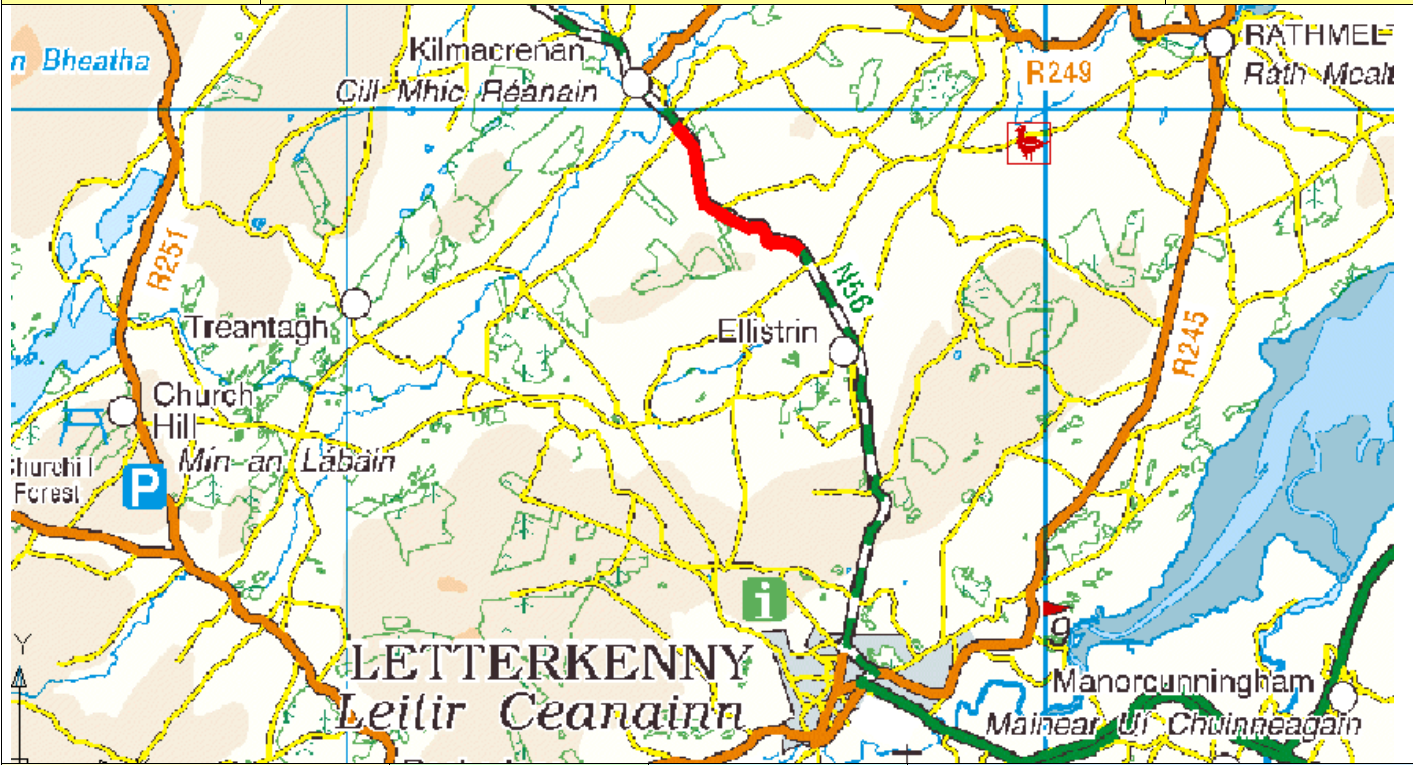
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N55.r.6.T1			Name: Ballykeeran Relief Road				Type: S2 Type 1			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120306	1.383	N/A	N/A	0.0	3301	1.383	4.287	1.245	0.180	0.415
Ballykeeran Relief Road						Total 1.383				
<p>Notes:</p> <p>This route passes to the east of Ballykeeran, connects with 1 No. local road and bypasses the centre of Ballykeeran as well as the bad bends either side of Ballykeeran. It is proposed that this route be connected to the existing N55 with roundabouts at either end. (There may be a possibility of connecting this route in at the existing junction with the R390 using a roundabout as from the aerial photography there does not appear to be a dwelling at this junction however it may be a site that is under construction or constructed since the aerial photography was taken as the aerial photography shows the plot as being site cleared – This potential option will have to be investigated further at a later date).</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>1 No. junction with local access roads.</p> <p>1 No. Breensford River crossing (minor structure).</p> <p>1 No. stream crossing.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>Split link 118444 @ (207810, 244732)</p> <p>Split link 118445 @ (207526, 243527)</p>						TOTAL:	4.287	1.245	0.180	0.415
						Any special costs	0.200	0.000	0.000	0.000
						Grand Total	6.327			



PABS Appraisal Summary Table - N55r.6.11						
Scheme Option: N55 Ballykeeran Relief Road		Description: 1.383km upgrade to S2 Type 1 standard	Problems Identified:			
						Budget Cost (million) €6.33
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		0 households affected in 2025 0 tonnes of carbon saved in 2025	€0.000	No	4.0
	Noise and vibration Landscape and visual quality		0 households affected in 2025	€0.000	No	4.0
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment may impact indirectly on Lough Rea SAC & pNHA (000440) and Lough Rea SPA (004046).			Yes	2.0
	Landuse	No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned sections of the route. The proposed realignments will primarily be within Agricultural Areas with a small proportion through a Forest / Semi-Natural Area.			No	4.0
	Water resources	The proposed realignment will directly cross the Breenford River which discharges to Lough Rea SAC & pNHA (000440) and Lough Rea SPA (004046).			No	4.0
Safety	Accident reduction Security	No additional facility for walkers and cyclists is to be provided.	0.7 accidents saved in 2025	€5.537	Yes	3.0
Economy	Transport Efficiency and Effectiveness					7.0
			133 vehicle-hours per day in travel time saved in 2025	€6.961		7.0
				Non-work Work		
				Active travel		
				€9.174 €0.000		
Accessibility and Social Inclusion	Other economic impacts			PVC Residual value		
	Funding	Not assessed	Imperfect competition effects	€0.377		
	Vulnerable groups					7.0
	Deprived geographic areas	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
			0 CLAR zones experience improved access to Hub/Gateway			4.5
Integration	Transport integration					5.0
	Land-use integration					4.6
	Geographical integration					6.4
	Integration with other government policies					4.8
				NPV	€18.174	Total
				BCR	4.79	Red Flagged
						5.6
						Yes

N56.a.1.T2			Name: Coolboy to Kilmacrenan				Type: S2 Type 2			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118450	1.639	64.5	6.2	3.8	3307	1.577	3.360	0.924	0.178	0.492
85564	1.290	64.5	6.2	3.8	3307	1.241	2.645	0.727	0.140	0.387
Coolboy to Kilmacrenan	Total 2.929					Total 2.818				
<p>Notes:</p> <p>This route begins north of Coolboy and at the end of the recently constructed N56 Mountain Top to Illistrin scheme which passes from Knocknamona on the outskirts of Letterkenny to Coolboy. The existing route is quite bendy and is also hilly in places. The cross section of this route is to Type 3 standard roughly, however the alignment is not to Type 3 standard. There is very limited overtaking opportunity along this corridor. There are no environmentally designated areas in the vicinity of this route. The Leannan River is listed as a SAC but this route crosses the Leannan River within the speed limit restriction of Kilmacrenan.</p> <p>1 No stream crossing.</p> <p>3 No. very bad bends.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 2.6 to 3.5 – Maintenance Bracket 2</p>						TOTAL:	6.005	1.651	0.318	0.879
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	8.853			

PABS Appraisal Summary Table - N56a.1.T2						
Scheme Option: N56 Coolboy to Kilmacrenan		Description: 2.818km upgrade to S2 Type 2 standard	Problems Identified: <ul style="list-style-type: none"> <li>• Lane width &lt; 3m wide for 43% of the route corridor and &lt;3.5m for 71% of the corridor</li> <li>• Intermittent poor visibilities to V=85kph and V=100kph design standards, particularly from south of Creeslough to Portnablahy</li> <li>• Relatively high incidence of accidents</li> <li>• 25% of the corridor has a pavement condition index, IRI &gt;4.</li> </ul>			
Objective		Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Score
Environment						Red Flag
						Score
Environment	Air Quality			32 households affected in 2025 -2 tonnes of carbon saved in 2025	-€0.018 €0.000	No 3.6
	Noise and vibration Landscape and visual quality			32 households affected in 2025	-€0.074	No 2.6
	Biodiversity		Not assessed			Not assessed 4.0
	Cultural Heritage / archaeology		The proposed realignment may impact indirectly on the River Leannan SAC (002176) and on the Leannan Valley Woods pNHA (001155).			Yes 2.5
	Landuse		No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned section.			No 4.0
Safety	Landuse		The proposed realignments will primarily be within Agricultural Areas but with a large proportion through Forest Semi Natural Areas.			No 4.0
	Water resources		The proposed realignment is within the Leannan Freshwater Pearl Mussel catchment and may impact indirectly on the River Leannan SAC (002176) and on the Leannan Valley Woods pNHA (001155).			Yes 2.5
Safety	Accident reduction			-0.7 accidents saved in 2025	-€4.168	1.0
	Security		No additional facility for walkers and cyclists is to be provided.			4.0
Economy	Transport Efficiency and Effectiveness			78 vehicle-hours per day in travel time saved in 2025	Non-work Work €18.344 €7.759	7.0
					Active travel €0.000	
					PVC €6.223	
					Residual €0.502	
				Imperfect competition effects	€0.776	7.0
Accessibility and Social Inclusion	Funding		Not assessed			4.0
	Vulnerable groups Deprived geographic areas		Some of the route corridor is within 4km of a settlement of 1,500 people or more.	7 CLAR zones experience improved access to Hub/Gateway		4.0
Integration	Transport integration					7.0
	Land-use integration					5.0
	Geographical integration					7.0
	Integration with other government policies					4.2
						4.0
					NPV	5.6
					BCR	Yes
					Total	Red Flagged
					€16.898	3.72

N56.a.1.T3			Name: Coolboy to Kilmacrenan				Type: S2 Type 3			
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118450	1.639	64.5	2.7	0.8	3310	1.626	2.050	0.348	0.098	0.492
85564	1.290	64.5	2.7	0.8	3310	1.280	1.613	0.274	0.077	0.387
Coolboy to Kilmacrenan	Total 2.929					Total 2.906				
<p>Notes:</p> <p>This route begins north of Coolboy and at the end of the recently constructed N56 Mountain Top to Illistrin scheme which passes from Knocknamona on the outskirts of Letterkenny to Coolboy. The existing route is quite bendy and is also hilly in places. The cross section of this route is to Type 3 standard roughly, however the alignment is not to Type 3 standard. There is very limited overtaking opportunity along this corridor. There are no environmentally designated areas in the vicinity of this route. The Leannan River is listed as a SAC but this route crosses the Leannan River within the speed limit restriction of Kilmacrenan.</p> <p>1 No stream crossing.</p> <p>3 No. very bad bends.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 2.6 to 3.5 – Maintenance Bracket 2</p>						TOTAL:	3.663	0.622	0.174	0.879
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	5.338			

PABS Appraisal Summary Table - N56a.1.T3						
Scheme Option: N56 Coolboy to Kilmacrenan		Description: 2.906km upgrade to S2 Type 3 standard	Problems Identified: · Lane width < 3m wide for 43% of the route corridor and <3.5m for 71% of the corridor · Intermittent poor visibilities to V=85kph and V=100kph design standards, particularly from south of Creeslough to Portnablahy · Relatively high incidence of accidents · 25% of the corridor has a pavement condition index, IRI >4.			Budget Cost (million) €5.34
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		32 households affected in 2025 -1 tonnes of carbon saved in 2025	-€0.012 €0.000	No	3.6
	Noise and vibration Landscape and visual quality		32 households affected in 2025	-€0.035	No	2.8
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment may impact indirectly on the River Leannan SAC (002176) and on the Leannan Valley Woods pNHA (001155).			Yes	2.5
	Landuse	No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned section.			No	4.0
	Water resources	The proposed realignments will primarily be within Agricultural Areas but with a large proportion through Forest Semi Natural Areas. The proposed realignment is within the Leannan Freshwater Pearl Mussel catchment and may impact indirectly on the River Leannan SAC (002176) and on the Leannan Valley Woods pNHA (001155).			No	4.0
Safety	Accident reduction		-0.5 accidents saved in 2025	-€1.585	Yes	2.5
	Security	No additional facility for walkers and cyclists is to be provided.				1.0
Economy	Transport Efficiency and Effectiveness		59 vehicle-hours per day in travel time saved in 2025	Non-work Work €3.734 €3.339 €0.000		7.0
	Other economic impacts			PVC Residual value €3.518 €0.245		
	Funding	Not assessed	Imperfect competition effects	€0.334		7.0
Accessibility and Social Inclusion	Vulnerable groups	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		5 CLAR zones experience improved access to Hub/Gateway			7.0
	Transport integration					5.0
	Land-use integration					7.0
	Geographical integration					4.2
Integration	Integration with other government policies					4.0
			NPV	€2,502	Total	5.6
			BCR	1.71	Red Flagged	Yes



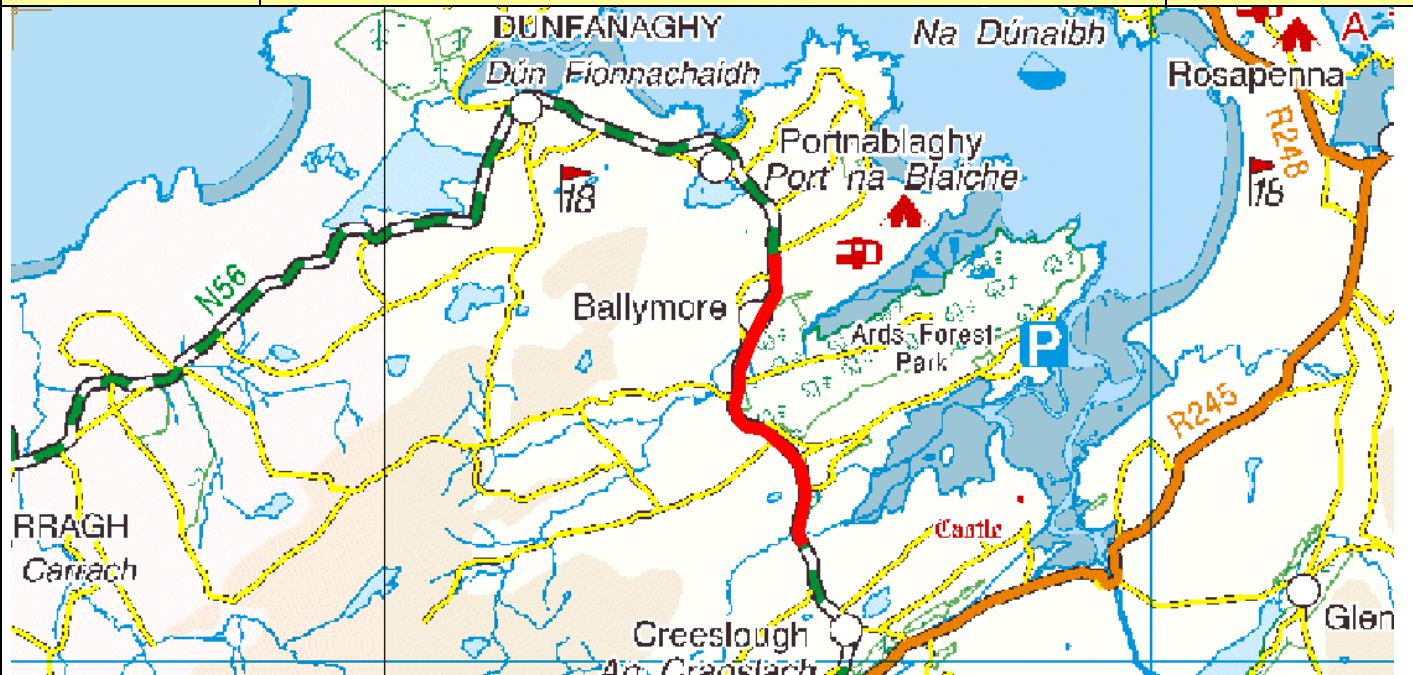
N56.a.2.T2			Name: Kilmacrenan to Creeslough					Type: S2 Type 2		
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
119935 (Former link no. 118452)	1.722 (Former link length 2.125)	72.5	3.8	1.4	3304	1.698	2.884	0.603	0.123	0.517
118453	1.314	72.5	3.8	1.4	3304	1.296	2.200	0.460	0.094	0.394
118456	3.618	75.5	3.2	0.9	3303	3.585	5.311	0.827	0.177	1.085
118455	5.762	68	5.3	2.7	3306	5.606	11.047	2.823	0.557	1.729
84925	0.420	68	5.3	2.7	3306	0.409	0.805	0.206	0.041	0.126
Kilmacrenan to Creeslough	Total 12.836					Total 12.594				
<p>Notes:</p> <p>This route is generally quite bendy and has a poor vertical alignment in places. There are however a number of reasonable overtaking opportunities along the route. The first approx 900m after the speed limit restriction at Kilmacrenan this existing route is to Type 2 standard. This section is therefore not considered for upgrade here. There is a recently upgraded T3 Pilot section to approx Type 3 standard approx 900m in length, south of the junction with the R255. There is a speed limit restriction through Thermon but it is proposed to continue this upgrade through this speed limit restricted area. Improvements to the alignment through the Barnes Gap area will involve rock excavation, which is an NHA. The Lurgy River is listed as a SAC and passes in close proximity to this route. The Owencarrow River and its surrounding area are also listed as an NHA and SAC.</p> <p>1 No. narrow stone bridge over the Lurgy River (to be widened / replaced)</p> <p>1 No. narrow stone bridge at Fawns Bridge (to be widened / replaced)</p> <p>1 No narrow stone bridge over the Owencarrow River (to be replaced and alignment improved – environmental red flag)</p> <p>Bad bends north of Drumdeevin.</p> <p>Bad bends at existing Owencarrow River crossing.</p> <p>6 No stream crossings.</p> <p>Very poor pavement condition through Barnes Gap.</p> <p>Moderate to steep side slopes with narrow road reservation through Barnes Gap.</p> <p>A stone pier from the dismantled railway line is obstructing the alignment at Barnes Gap and will either have to be removed or avoided as part of an upgrade.</p> <p>High Traffic Poor Subgrade – Maintenance Category 4</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p> <p>Link 118452 split @ approx (213323, 421077) Resulting Scheme Link 119935</p>						TOTAL:	22.247	4.920	0.992	3.851
						Any special costs	0.500	0.000	0.000	0.000
						Grand Total	32.510			

PABS Appraisal Summary Table - N56a.2.T2						
Scheme Option: N56 Kilmacrenan to Creeslough	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Score	
					Red Flag	Score
<b>Description:</b> 12.594km upgrade to S2 Type 2 standard  <b>Problems Identified:</b> <ul style="list-style-type: none"> <li>• Lane width &lt; 3m wide for 43% of the route corridor and &lt;3.5m for 71% of the corridor</li> <li>• Intermittent poor visibilities to V=85kph and V=100kph design standards, particularly from south of Creeslough to Portnablahy</li> <li>• Relatively high incidence of accidents</li> <li>• 25% of the corridor has a pavement condition index, IRI &gt;4.</li> </ul>	Air Quality		63 households affected in 2025 -6 tonnes of carbon saved in 2025	-€0.122 €0.000	No	3.3
	Noise and vibration Landscape and visual quality		63 households affected in 2025	-€0.198	No	2.9
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment may impact directly on the River Leannan SAC (002176), the Clohernagore Bog and Glenveagh National Park SAC (002047), Derriscigh Bog pNHA (001114), Sheephaven SAC (001190) and pNHA, and indirectly on the Leannan Valley Woods pNHA (001155).			Yes	1.0
	Landuse	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Ritual Site – Holy Well.			No	3.0
	Water resources	The proposed realignments will primarily be within Wetlands and Agricultural Areas but two sections are through Forest Semi Natural Areas.			No	4.0
		The proposed realignment is within the Leannan Freshwater Pearl Mussel catchment and may impact directly on the River Leannan SAC (002176). It is also within the Owencarrow Freshwater Pearl Mussel catchment and directly crosses the Owencarrow River.			Yes	2.5
	Accident reduction		1.5 accidents saved in 2025	€5.296		6.0
	Security	No additional facility for walkers and cyclists is to be provided.				4.0
	Transport Efficiency and Effectiveness		78 vehicle-hours per day in travel time saved in 2025	Non-work €16.619 Work €4.001 €0.000		5.4
<b>Accessability and Social Inclusion</b> <b>Integration</b>	Other economic impacts		Imperfect competition effects	PVC €21.390 Residual €1.691		4.7
	Funding	Not assessed		€0.400		4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		3 CLAR zones experience improved access to Hub/Gateway			6.9
<b>Accessability and Social Inclusion</b> <b>Integration</b>	Transport integration					5.0
	Land-use integration					7.0
	Geographical integration					4.2
	Integration with other government policies					4.0
				NPV	€6.296	<b>Total</b>
				BCR	1.29	<b>Red Flagged</b>
						<b>5.5</b>
						Yes

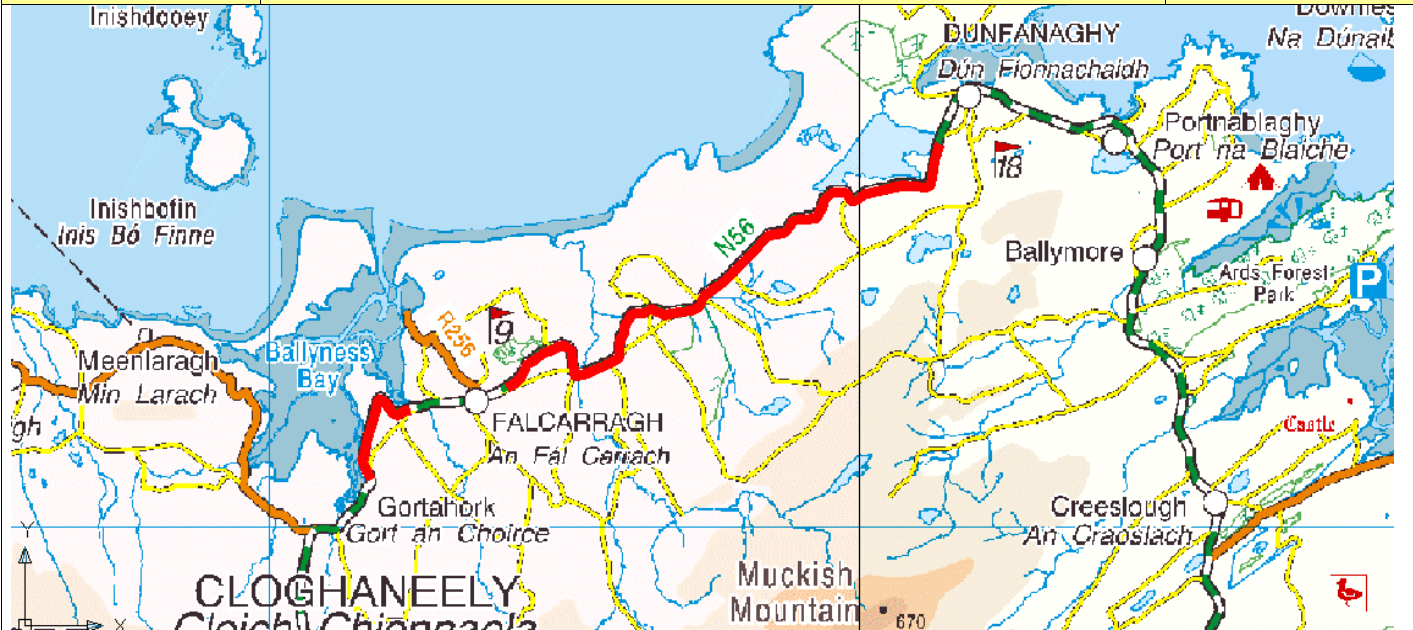
N56.a.2.T3			Name: Kilmacrenan to Creeslough					Type: S2 Type 3		
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
119935 (Former link no. 118452)	1.722 (Former link length2.125)	72.5	1.3	0.1	3307	1.720	1.779	0.166	0.050	0.517
118453	1.314	72.5	1.3	0.1	3307	1.313	1.357	0.127	0.038	0.394
118456	3.618	75.5	0.9	0.0	3305	3.618	3.330	0.140	0.048	1.085
119938 (Former link no. 118455)	5.218 (Former link length5.762)	68	2.2	0.4	3309	5.197	6.106	0.879	0.252	1.565
Kilmacrenan to Creeslough	Total 11.872					Total 11.848				
<p>Notes:</p> <p>This route is generally quite bendy and has a poor vertical alignment in places. There are however a number of reasonable overtaking opportunities along the route. The first approx 900m after the speed limit restriction at Kilmacrenan this existing route is to Type 2 standard. This section is therefore not considered for upgrade here. There is a recently upgraded T3 pilot section to approx Type 3 standard approx 900m in length, south of the junction with the R255. The costs have been amended to exclude this recently upgraded section. There is a speed limit restriction through Thermon but it is proposed to continue this upgrade through this speed limit restricted area. The final 1.4km before the speed limit restriction at Creeslough is to Type 3 standard (0.6km of this has been recently improved and the other 0.8km is already to Type 3 standard).</p> <p>Improvements to the alignment through the Barnes Gap area will involve rock excavation, which is an NHA. The Lurgy River is listed as a SAC and passes in close proximity to this route. The Owencarrow River and its surrounding area are also listed as an NHA and SAC.</p> <p>1 No. narrow stone bridge over the Lurgy River (to be widened / replaced)</p> <p>1 No. narrow stone bridge at Fawns Bridge (to be widened / replaced)</p> <p>1 No narrow stone bridge over the Owencarrow River (to be replaced and alignment improved – environmental red flag)</p> <p>Bad bends north of Drumdeevin.</p> <p>Bad bends at existing Owencarrow River crossing.</p> <p>6 No stream crossings.</p> <p>Very poor pavement condition through Barnes Gap.</p> <p>Moderate to steep side slopes with narrow road reservation through Barnes Gap.</p> <p>A stone pier from the dismantled railway line is obstructing the alignment at Barnes Gap and will either have to be removed or avoided as part of an upgrade.</p> <p>High Traffic Poor Subgrade – Maintenance Category 4</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p> <p>Link 118452 split @ approx (213323, 421077) Resulting Scheme Link 119935</p> <p>Link 118455 split @ approx (205959, 428927) Resulting Scheme Link 119938</p>						TOTAL:	12.572	1.312	0.387	3.562
						Any special costs	-1.483 0.500	-0.155	-0.046	-0.420
						Grand Total	16.229			



PABS Appraisal Summary Table - N56a.2.T3						
Scheme Option: N56 Kilmacrenan to Creeslough		Description: 11.848km upgrade to S2 Type 3 standard	Problems Identified:			
			<ul style="list-style-type: none"> <li>• Lane width &lt; 3m wide for 43% of the route corridor and &lt;3.5m for 71% of the corridor</li> <li>• Intermittent poor visibilities to V=85kph and V=100kph design standards, particularly from south of Creeslough to Portnablahy</li> <li>• Relatively high incidence of accidents</li> <li>• 25% of the corridor has a pavement condition index, IRI &gt;4.</li> </ul>			
			Budget Cost (million) €16.23			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		57 households affected in 2025 -2 tonnes of carbon saved in 2025	-€0.048 €0.000	No	3.4
	Noise and vibration Landscape and visual quality	Not assessed	57 households affected in 2025	-€0.075	No	3.1
	Biodiversity	The proposed realignment may impact directly on the River Leannan SAC (002176), the Clohernagore Bog and Glenveagh National Park SAC (002047), Derriscigh Bog pNHA (001114), Sheephaven SAC (001190) and pNHA, and indirectly on the Leannan Valley Woods pNHA (001155).			Not assessed	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Ritual Site – Holy Well.			Yes	1.0
	Landuse	The proposed realignments will primarily be within Wetlands and Agricultural Areas but two sections are through Forest Semi Natural Areas.			No	3.0
Safety	Water resources	The proposed realignment is within the Leannan Freshwater Pearl Mussel catchment and may impact directly on the River Leannan SAC (002176). It is also within the Owencarrow Freshwater Pearl Mussel catchment and directly crosses the Owencarrow River.			Yes	2.5
	Accident reduction	No additional facility for walkers and cyclists is to be provided.	0.6 accidents saved in 2025	-€0.036		4.0
Economy	Security					4.0
	Transport Efficiency and Effectiveness		31 vehicle-hours per day in travel time saved in 2025	Non-work Work €1.434 €1.714		6.0
				€0.000		
				PVC Residual €9.896 €0.646		
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	€0.171		4.7
	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		3 CLAR zones experience improved access to Hub/Gateway			6.3
Integration	Transport integration					5.0
	Land-use integration					7.0
	Geographical integration					4.2
	Integration with other government policies					4.0
				NPV	€3.911	Total
				BCR	1.40	Red Flagged
						5.4
						Yes

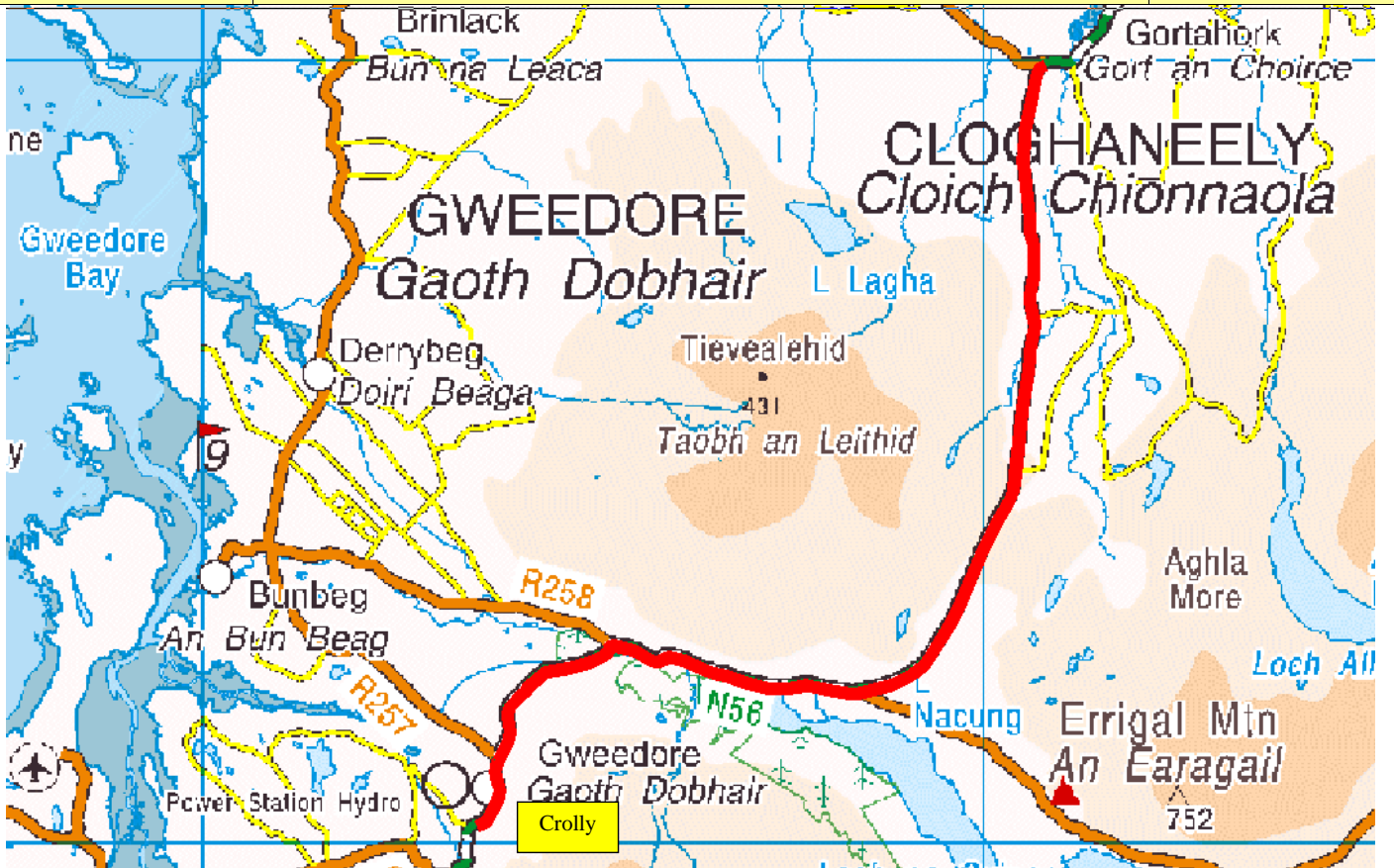
N56.a.3.T2			Name: Creeslough to Portnablathy					Type: S2 Type 2						
														
Scheme Definition			Modelled as		OT Input		Scheme Cost €m							
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S				
118458	0.252	68	5.3	2.7	3306	0.245	0.483	0.123	0.024	0.076				
118460	4.146	74.5	2.1	0.6	3304	4.121	6.388	1.126	0.236	1.244				
Creeslough to Portnablathy	Total 4.398					Total 4.366								
<p>Notes:</p> <p>From Creeslough to Portnablathy the alignment is close to Type 2 standard in cross section. The horizontal and vertical alignments may however be below this standard. The existing pavement condition for this section is quite good and may have been recently upgraded or resurfaced. Therefore this upgrade is included mainly for alignment improvement purposes.</p> <p>There are a number of inlets to the east of this route including Ards Strand and The Black Strand. These inlets are environmentally designated as combined NHA's and SAC's. The existing Clon Bridge over the Faymore River is wide enough to accommodate this upgrade.</p> <p>The existing bridge over the Derrvan River is wide enough to accommodate this upgrade.</p> <p>High Traffic Poor Subgrade – Maintenance Category 4</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p>						TOTAL:	6.871	1.250	0.261	1.319				
						Any special costs	0.000	0.000	0.000	0.000				
						Grand Total					9.701			

PABS Appraisal Summary Table - N56a.3.T2						
Scheme Option: N56 Creeslough to Portnablathy		Description: 4.366km upgrade to S2 Type 2 standard	Problems Identified:			
			<ul style="list-style-type: none"> <li>• Lane width &lt; 3m wide for 43% of the route corridor and &lt;3.5m for 71% of the corridor</li> <li>• Intermittent poor visibilities to V=85kph and V=100kph design standards, particularly from south of Creeslough to Portnablathy</li> <li>• Relatively high incidence of accidents</li> <li>• 25% of the corridor has a pavement condition index, IRI &gt;4.</li> </ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		19 households affected in 2025	-€0.017	No	3.7
	Noise and vibration		-1 tonnes of carbon saved in 2025	€0.000	No	3.5
	Landscape and visual quality	Not assessed	19 households affected in 2025	-€0.027	Not assessed	4.0
	Biodiversity	The proposed realignment will impact directly on Sheephaven SAC (001190) and pNHA, with potential for indirect impacts to Sessiagh Lough SAC (000185).			Yes	1.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Graveyard, a Church, an Enclosure and a Ringfort.			No	3.0
Safety	Landuse	The proposed realignments will be within a combination of Agricultural Areas, Wetlands, Forest Semi Natural Areas, Waterbodies and on existing Artificial Surfaces.			No	4.0
	Water resources	The proposed realignment has potential for indirect impacts to Sessiagh Lough SAC (000185). It also crosses the Carrownamaddy River and the Faymore River.			Yes	2.5
	Accident reduction	No additional facility for walkers and cyclists is to be provided.	-0.1 accidents saved in 2025	€0.424		4.5
Economy	Security					4.0
	Transport Efficiency and Effectiveness		9 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €0.620 €0.378 €0.000		4.2
				PVC Residual value €6.412 €0.473		
	Other economic impacts	Imperfect competition effects		€0.038		4.2
Accessibility and Social Inclusion	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		1 CLAR zones experience improved access to Hub/Gateway			4.7
	Transport integration					5.0
	Land-use integration					7.0
Integration	Geographical integration					4.2
	Integration with other government policies					4.0
				NPV	-€4,523	Total
				BCR	0.29	Red Flagged
						4.8
						Yes

N56.b.1.T3			Name: Dunfanaghy to Gortahork (break at Falcarragh)					Type: S2 Type 3			
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
118461	6.444	66	2.4	0.5	3310	6.412	7.855	1.255	0.355	1.933	
118462	3.739	62	5.1	2.0	3310	3.664	4.838	0.887	0.246	1.122	
Break at Falcarragh											
118464	0.840	62	5.1	2.0	3310	0.823	1.087	0.199	0.055	0.252	
118463	1.235	72.5	1.4	0.0	3307	1.235	1.276	0.119	0.036	0.371	
Dunfanaghy to Falcarragh	Total 12.258					Total 12.134					
<p>Notes:</p> <p>The section from Dunfanaghy to Falcarragh is very bendy and hilly in places and has a very poor horizontal alignment with intermittent short overtaking and non-overtaking sections. There are only a few very limited overtaking opportunities near Dunfanaghy. At isolated cross sections this route are to Type 3 width and even Type 2 in places and hence the cross-section is quite variable however the horizontal and vertical alignment is not to type 3 standard. The section from Falcarragh to Gortahork has two bad bends but also has a decent straight section at which there is a moderate overtaking opportunity. This part of the N56 is also characterised by the extent of houses developed along this route. The additional costs of the sidelong section for approx 1km at this location is offset against the saving that could be achieved by tying in to the 0.86km straight section to Type 3 standard in this area also. There is a narrow bridge over the Tullaghobegly River just outside the speed limit restriction after Falcarragh. This bridge could possibly be kept in place and the upgrade commenced immediately after the bridge.</p> <p>The New Lake area is environmentally designated as an SPA, NHA and SAC. This route passes very close to this environmentally sensitive area.</p> <p>Possible marshy area near Ballyboe (approx 1km)</p> <p>1 No. very narrow stone bridge over Ray River (will need to be replaced)</p> <p>1 No. narrow stone bridge over River Ray tributary (to be widened / replaced)</p> <p>1 No. River Ray tributary crossings at Owenwee Bridge (to be widened / replaced).</p> <p>2 No stream crossings.</p> <p>Moderate side long construction for approx 1 km at the coastal area from Killult Lower to Gortahork.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p>						TOTAL:	15.055	2.460	0.691	3.677	
						Any special costs	0.500	0.000	0.000	0.000	
						Grand Total	22.383				

PABS Appraisal Summary Table - N56b.1.T3									
Scheme Option: N56 Dunfanaghy to Gortahork (break at Falcarragh)		Description: 12.134km upgrade to S2 Type 3 standard		Problems Identified: · Lane width < 3m for majority of this section of the route · Intermittent poor visibilities to V=85kph and V=100kph design standards · Accident cluster for 5km west of Dunfanaghy · Accident cluster from Falcarragh to Gortahork. An Accident Blackspot is identified at near Gortahork. · 62% of the corridor has a pavement condition indicator index, IRI>4.		Budget Cost (million) €2.38			
Objective	Sub-objective	Qualitative impacts		Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score		
Environment	Air Quality			74 households affected in 2025 0 tonnes of carbon saved in 2025	€0.002 €0.000	No	4.0		
	Noise and vibration Landscape and visual quality			74 households affected in 2025	-€0.044	No	3.6		
						Not assessed	4.0		
	Biodiversity					Yes	1.0		
	Cultural Heritage / archaeology			The proposed realignment will impact directly on Horn Head to Fanad Head SPA (004194, Horn Head and Rinclevan SAC (000147) and pNHA, to Ballyness Bog SAC (001090) and pNHA.			3.0		
	Landuse			No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including two Ringforts, an Altar and a Burial Site. The proposed realignments will primarily be within Agricultural Areas but two sections are through Wetlands and one section is through a Forest Semi Natural Area.		No	4.0		
	Water resources			The proposed realignment will impact directly on Ballyness Bog SAC (001090) and pNHA, and also crosses the River Ray which discharges to Ballyness Bog SAC (001090) and pNHA.		Yes	2.5		
Safety	Accident reduction Security			0.4 accidents saved in 2025	-€3.057		2.2		
							4.0		
Economy	Transport Efficiency and Effectiveness			46 vehicle-hours per day in travel time saved in 2025	Non-work Work €8.215 €4.245 €0.000		5.3		
					PVC Residual value €13.887 €1.012				
	Other economic impacts Funding			Imperfect competition effects	€0.424		5.2		
							4.0		
Accessibility and Social Inclusion	Vulnerable groups Deprived geographic areas			1 CLAR zones experience improved access to Hub/Gateway			4.0		
							6.3		
Integration	Transport integration Land-use integration Geographical integration Integration with other government policies						5.0		
							6.0		
							6.7		
							4.0		
							4.0		



N56.b.2.T2			Name: Gortahork to Crolly (Gweedore)					Type: S2 Type 2		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118466	2.782	72.5	3.7	0.9	3304	2.757	4.659	0.974	0.199	0.835
118465	6.240	76.5	1.9	0.1	3303	6.234	8.679	1.143	0.252	1.872
84652	3.300	69	5.1	2.5	3305	3.218	6.172	1.529	0.304	0.990
84651	2.290	69	5.1	2.5	3305	2.233	4.283	1.061	0.211	0.687
118468	0.952	69	5.1	2.5	3305	0.928	1.781	0.441	0.088	0.286
Gortahork to Crolly (Gweedore)	Total 15.564					Total 15.370				
<p>Notes:</p> <p>This route is predominantly narrow and quite hilly which may be due to poor subgrade. The route is also bendy in places. There is also a section of the route that is sidelong in nature. There are two good overtaking sections; the first of these is at Fawnboy Upper and the second is located between Fawnboy and the junction with the R251. There is a section from Fawnboy to the junction with the R251 that appears to have been recently resurfaced and possibly widened slightly. It is thought that this 3.25km section is roughly to Type 3 standard. The 3.25km section from east of the junction with the R251 until the bridge over the Clady River has an approx 1 to 1.5m hard strip on the northern side. This could be used to improve widths but alignment improvements would be desirable. The costs for this section have been removed from this analysis. The section from the bridge over the stream from the power station to Crolly is quite bendy and has no overtaking sections of note. The cross section may be to Type 3 standard over this section but the horizontal and vertical alignment is not to Type 3 standard. This section of the N56 is characterised by the extent of housing built along the corridor.</p> <p>There are a number of environmentally designated areas to the south east of this route near the junction with the R251. The areas are listed as NHA's and SAC's and include Lough Nacung Upper, Lough Nacung Lower, Lough Trusk, Lough Nacusers, Lough Nacrick and also the wetlands areas in the vicinity of these loughs.</p> <p>Side long construction for approx 1.5km.</p> <p>Poor subgrade / marshy for approx 2km at Fawnaboy</p> <p>The bridge over the Clady River and the one beside it over the stream from the power station are considered wide enough that they will not require upgrades.</p> <p>1 No narrow stone bridge over Aspick River to be widened / replaced.</p> <p>7 No stream crossings.</p> <p>High Traffic Poor Subgrade – Maintenance Category 4</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p>						TOTAL:	25.574	5.148	1.053	4.669
						Any special costs	1.000 -5.340	-1.075	-0.220	-0.975
						Grand Total	29.834			

PABS Appraisal Summary Table - N56b.2.T2						
Scheme Option: N56 Gortahork to Crolly (Gweedore)	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Score	
					Red Flag	Score
<b>Description:</b> 15.37km upgrade to S2 Type 2 standard	Environment	Air Quality	76 households affected in 2025 1 tonnes of carbon saved in 2025	-€0.013 €0.000	No	3.9
		Noise and vibration Landscape and visual quality	76 households affected in 2025	-€0.133	No	3.2
		Biodiversity	Not assessed		Not assessed	4.0
		Cultural Heritage / archaeology	The proposed realignment will impact directly on the Clady Freshwater Pearl Mussel catchment and the Fawnboy Bog/Lough Nacung SAC (000140) and pNHA. Potential for indirect impacts exist for Cloghernagore Bog and Glenveagh National Park SAC (002047) and pNHA, and Crolly Bridge Woods pNHA (001102). No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned section.		Yes	1.0
		Landuse	The proposed realignments will primarily be within Wetlands and Agricultural Areas but one section is through a Forest Semi Natural Area.		No	4.0
	Safety	Water resources	The proposed realignment will impact directly on the Clady Freshwater Pearl Mussel catchment and the Fawnboy Bog/Lough Nacung SAC (000140) and pNHA. It also directly crosses the Aspick River and the directly impacts on the Clady Freshwater Pearl Mussel catchment.		No	4.0
		Accident reduction	0.3 accidents saved in 2025	€2.262	Yes	2.5
		Security	No additional facility for walkers and cyclists is to be provided.			
		Transport Efficiency and Effectiveness	30 vehicle-hours per day in travel time saved in 2025	€3.586 €1.063 €0.000		4.9 4.0 4.4
		Other economic impacts	Imperfect competition effects	PVC Residual value €19.751 €1.495 €0.106		4.2 4.0
Economy	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		1 CLAR zones experience improved access to Hub/Gateway			4.5
	Transport integration					5.0
	Land-use integration					6.7
Accessibility and Social Inclusion	Geographical integration					4.0
	Integration with other government policies					4.0
				NPV	-€11.385	<b>Total</b>
				BCR	0.42	<b>Red Flagged</b>
						<b>4.8</b>
						<b>Yes</b>

**Problems Identified:**

- Lane width < 3m for majority of this section of the route
- Intermittent poor visibilities to V=85kph and V=100kph design standards
- Accident cluster for 5km west of Durlanaghy
- Accident cluster from Falcarragh to Gortahork. An Accident Blackspot is identified at near Gortahork.
- 62% of the corridor has a pavement condition indicator index, IRI>4.



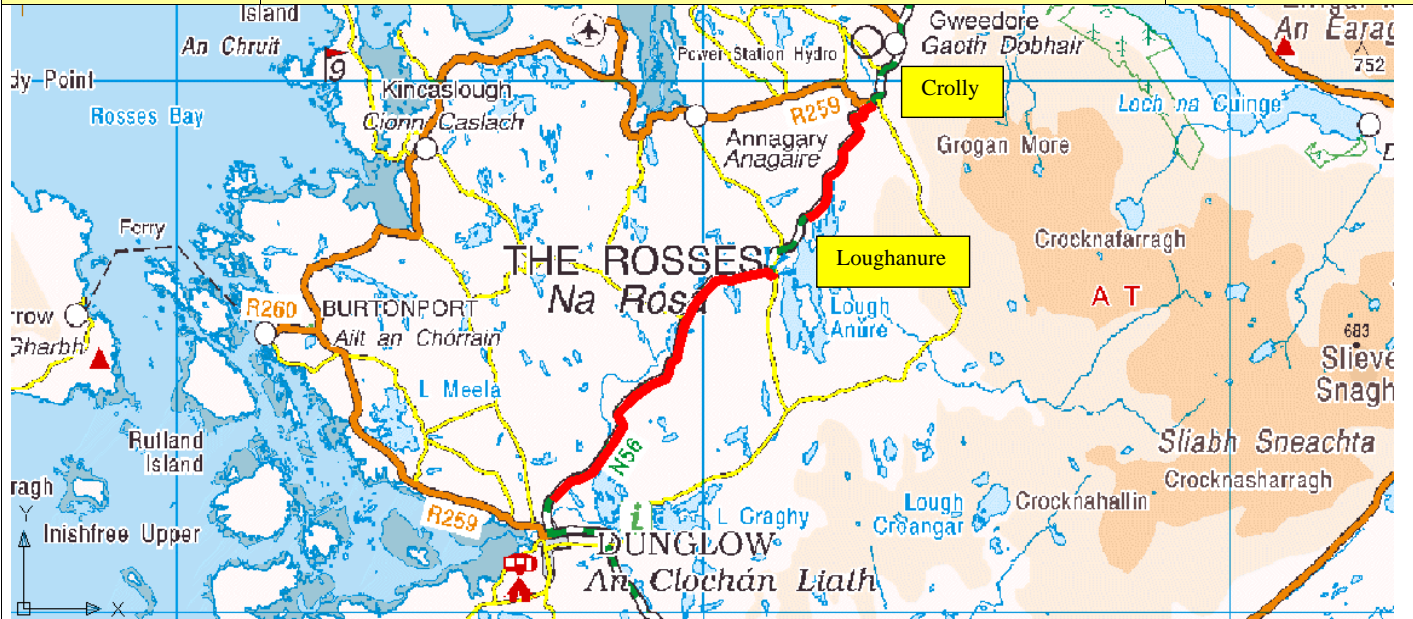
N56.b.2.T3			Name: Gortahork to Crolla (Gweedore)					Type: S2 Type 3		
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118466	2.782	72.5	1.4	0.0	3307	2.782	2.874	0.268	0.081	0.835
118465	6.240	76.5	0.7	0.0	3304	6.240	5.487	0.111	0.046	1.872
84652	3.300	69	2.0	0.4	3308	3.287	3.772	0.508	0.147	0.990
84651	2.290	69	2.0	0.4	3308	2.281	2.617	0.353	0.102	0.687
118468	0.952	69	2.0	0.4	3308	0.948	1.088	0.147	0.042	0.286
Gortahork to Crolla (Gweedore)	Total 15.564					Total 15.538				
<p>Notes:</p> <p>This route is predominantly narrow and quite hilly which may be due to poor subgrade. The route is also bendy in places. There is also a section of the route that is sidelong in nature. There are two good overtaking sections; the first of these is at Fawnboy Upper and the second is located between Fawnboy and the junction with the R251. There is a section from Fawnboy to the junction with the R251 that appears to have been recently resurfaced and possibly widened slightly. It is thought that this 3.25km section is roughly to Type 3 standard and therefore the costs of this section have been removed from the analysis. The 3.25km section from east of the junction with the R251 until the bridge over the Clady River is also to between Type 2 and Type 3 standard as it has an approx 1 to 1.5m hard strip on the northern side. It is therefore not proposed to upgrade this section either and the costs have been reduced to reflect this. The section from the bridge over the stream from the power station to Crolla is quite bendy and has no overtaking sections of note. The cross section may be to Type 3 standard over this section but the horizontal and vertical alignment is not to Type 3 standard. This section of the N56 is characterised by the extent of housing built along the corridor.</p> <p>There are a number of environmentally designated areas to the south east of this route near the junction with the R251. The areas are listed as NHA's and SAC's and include Lough Nacung Upper, Lough Nacung Lower, Lough Trusk, Lough Nacuskers, Lough Nacrick and also the wetlands areas in the vicinity of these loughs.</p> <p>Side long construction for approx 1.5km.</p> <p>Poor subgrade / marshy for approx 2km at Fawnaboy</p> <p>The bridge over the Clady River and the one beside it over the stream from the power station are considered wide enough that they will not require upgrades.</p> <p>1 No narrow stone bridge over Aspick River to be widened / replaced.</p> <p>7 No stream crossings.</p> <p>High Traffic Poor Subgrade – Maintenance Category 4</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p>						TOTAL:	15.838	1.387	0.417	4.669
						Any special costs	1.000 -6.614	-0.579	-0.174	-1.950
						Grand Total	13.994			

PABS Appraisal Summary Table - N56b.2.T3						
Scheme Option: N56 Gortahork to Crolly (Gweedore)	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Score	
					Red Flag	Score
<b>Description:</b> 15.538km upgrade to S2 Type 3 standard  <b>Problems Identified:</b> <ul style="list-style-type: none"> <li>• Lane width &lt; 3m for majority of this section of the route</li> <li>• Intermittent poor visibilities to V=85kph and V=100kph design standards</li> <li>• Accident cluster for 5km west of Durlanaghy</li> <li>• Accident cluster from Falcarragh to Gortahork. An Accident Blackspot is identified at near Gortahork.</li> <li>• 62% of the corridor has a pavement condition indicator index, IRI&gt;4.</li> </ul>	Air Quality		76 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.003 €0.000	No	4.0
	Noise and vibration Landscape and visual quality		76 households affected in 2025	-€0.073	No	3.0
	Biodiversity				Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will impact directly on the Clady Freshwater Pearl Mussel catchment and the Fawnboy Bog/Lough Nacung SAC (000140) and pNHA. Potential for indirect impacts exist for Cloghernagore Bog and Glenveagh National Park SAC (002047) and pNHA, and Crolly Bridge Woods pNHA (001102).			Yes	1.0
	Landuse	No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned section.			No	4.0
	Water resources	The proposed realignments will primarily be within Wetlands and Agricultural Areas but one section is through a Forest Semi Natural Area.			No	4.0
		The proposed realignment will impact directly on the Clady Freshwater Pearl Mussel catchment and the Fawnboy Bog/Lough Nacung SAC (000140) and pNHA. It also directly crosses the Aspick River and the directly impacts on the Clady Freshwater Pearl Mussel catchment.			Yes	2.5
	Accident reduction Security		0.1 accidents saved in 2025	-€0.099		3.9
	Transport Efficiency and Effectiveness	No additional facility for walkers and cyclists is to be provided.				4.0
			12 vehicle-hours per day in travel time saved in 2025	Non-work Work €1.392 €0.402 €0.000		4.3
<b>Accessability and Social Inclusion</b> <b>Integration</b>	Other economic impacts			PVC Residual €8.614 €0.536 value		
	Funding		Imperfect competition effects	€0.040		4.2
	Vulnerable groups	Not assessed				4.0
	Deprived geographic areas	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
<b>Integration</b>	Transport integration		0 CLAR zones experience improved access to Hub/Gateway			4.5
	Land-use integration					5.0
	Geographical integration					6.7
	Integration with other government policies					4.0
				NPV	-€6.418	<b>Total</b>
				BCR	0.25	<b>Red Flagged</b>
						<b>4.7</b>
						<b>Yes</b>

N56.c.1.T2			Name: Crolly to Dunglow (break at Loughanure)					Type: S2 Type 2			
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
119939 (Former link no. 118469)	2.873 (Former link length 3.323)	60.5	12.5	11.5	3303	2.543	6.155	1.753	0.329	0.862	
Break at Loughanure											
118474	0.436	60.5	12.5	11.5	3303	0.386	0.934	0.266	0.050	0.131	
118473	6.213	71	3.8	1.6	3305	6.114	10.962	2.500	0.504	1.864	
Crolly to Dunglow	Total 9.522					Total 9.043					
<b>Notes:</b> Between Crolly and Loughanure this route is generally very bendy, especially coming out of Crolly. The section of route parallels the Gweedore River giving a sidelong profile in many cases (approx 1.5km of the route). The subgrade may be poor over this section especially where the route passes close to the river. The river alignment also constrains the road alignment. There is very limited overtaking opportunity along this section of the route. At the approach to the Loughanure speed restriction there is an on road cycleway for approx 450m and continuing past the speed limit into Loughanure. This 450m section is not recommended for upgrade here. From Loughanure to Dunglow the route is generally bendy and hilly and would benefit from horizontal and vertical alignment improvements though the widths are close to or at Type 3 standard. There is very limited overtaking opportunity on this section also. From Loughanure the landscape features peaty / boggy areas and frequent rock outcropping. Much of this corridor winds through a relatively flat landscape. Dunglow Lough is environmentally designated as both an NHA and an SAC. The existing bridge over the stream / river that flows into Dunglow Lough appears to be wide enough to accommodate this upgrade. 7 No. stream crossings. Low Traffic Poor Subgrade – Maintenance Category 3 IRI 2.6 to 3.5 – Maintenance Bracket 2  Split Link 118469 @ (181976, 417429) Resulting Link 119939						TOTAL:	18.051	4.519	0.883	2.857	
						Any special costs	0.500	0.000	0.000	0.000	
						Grand Total	26.810				

PABS Appraisal Summary Table - N56c.1.T2							
Scheme Option: N56 Crolly to Dunglow (break at Loughanure)		Description: 9.043km upgrade to S2 Type 2 standard	Problems Identified: · Lane width < 3m from Gweedore to south of Loughanure · Lane width < 3m on northern approach to Dunglow · Overall, Lane widths are < 3m for circa 70% of the corridor · Sight distances are poor from Gweedore to south of Loughanure and on the approach to Dunglow for both 85kph and 100kph design standards. · High incidence of accidents throughout the corridor.			Budget Cost (million) <b>€6.81</b>	
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score	
Environment	Air Quality		36 households affected in 2025 1 tonnes of carbon saved in 2025	-€0.011 €0.000	No	3.9	
	Noise and vibration		36 households affected in 2025	-€0.104	No	3.4	
	Landscape and visual quality	Not assessed			Not assessed	4.0	
	Biodiversity		The proposed realignment will impact directly on Crolly Bridge Woods pNHA (001102), Cronaguddy Bog pNHA (001176), and Cloghernagore Bog and Glenveagh National Park SAC (002047) and pNHA.		Yes	1.0	
	Cultural Heritage / archaeology		No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned section.		No	4.0	
Safety	Landuse		The proposed realignments will primarily be within Wetlands but a few small sections are through Agricultural Areas.		No	4.0	
	Water resources		The proposed realignment will impact directly on Cronaguddy Bog pNHA (001176), and directly crosses the Gweedore River and the Dunglow River.		No	3.0	
	Accident reduction		0.8 accidents saved in 2025	€1.677		4.7	
	Security		No additional facility for walkers and cyclists is to be provided.			4.0	
	Transport Efficiency and Effectiveness		119 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel PVC Residual value Imperfect competition effects	€8,257 €10,256 €0.000 €19,207 €1,460 €1,026	5.4	
Economy	Other economic impacts					6.1	
	Funding					4.0	
	Vulnerable groups					4.0	
	Deprived geographic areas		0 CLAR zones experience improved access to Hub/Gateway			3.8	
	Transport integration					5.0	
Accessibility and Social Inclusion	Land-use integration					6.7	
	Geographical integration					4.0	
	Integration with other government policies					4.0	
				NPV	€3,354	Total	5.2
				BCR	1.17	Red Flagged	Yes




N56.c.1.T3			Name: Crolly to Dunglow (break at Loughanure)					Type: S2 Type 3			
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
119939 (Former link no. 118469)	2.873 (Former link length 3.323)	60.5	7.6	3.6	3308	2.770	3.776	0.717	0.197	0.862	
Break at Loughanure						0.000					
118474	0.436	60.5	7.6	3.6	3308	0.420	0.573	0.109	0.030	0.131	
118473	6.213	71	1.3	0.1	3308	6.207	6.728	0.760	0.224	1.864	
Crolly to Dunglow	Total 9.522					Total 9.397					
<p>Notes:</p> <p>Between Crolly and Loughanure this route is generally very bendy, especially coming out of Crolly. The section of route parallels the Gweedore River giving a sidelong profile in many cases (approx 1.5km of the route). The subgrade may be poor over this section especially where the route passes close to the river. The river alignment also constrains the road alignment. There is very limited overtaking opportunity along this section of the route. At the approach to the Loughanure speed restriction there is an on road cycleway for approx 450m and continuing past the speed limit into Loughanure. This 450m section is not recommended for upgrade here.</p> <p>From Loughanure to Dunglow the route is generally bendy and hilly and would benefit from horizontal and vertical alignment improvements though the widths are close to or at Type 3 standard. There is very limited overtaking opportunity on this section also. From Loughanure the landscape features peaty / boggy areas and frequent rock outcropping. Much of this corridor winds through a relatively flat landscape.</p> <p>Dunglow Lough is environmentally designated as both an NHA and an SAC.</p> <p>The existing bridge over the stream / river that flows into Dunglow Lough appears to be wide enough to accommodate this upgrade.</p> <p>7 No. stream crossings.</p> <p>Low Traffic Poor Subgrade – Maintenance Category 3</p> <p>IRI 2.6 to 3.5 – Maintenance Bracket 2</p> <p>Split Link 118469 @ (181976, 417429) Resulting Link 119939</p>							TOTAL:	11.077	1.586	0.451	2.857
							Any special costs	0.500	0.000	0.000	0.000
							Grand Total	16.471			

PABS Appraisal Summary Table - N56c.1.T3							
Scheme Option: N56 Crolly to Dunglow (break at Loughanure)		Description: 9.397km upgrade to S2 Type 3 standard		Problems Identified: · Lane width < 3m from Gweedore to south of Loughanure · Lane width < 3m on northern approach to Dunglow · Overall, Lane widths are < 3m for circa 70% of the corridor · Sight distances are poor from Gweedore to south of Loughanure and on the approach to Dunglow for both 85kph and 100kph design standards. · High incidence of accidents throughout the corridor.		Budget Cost (million) €16.47	
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score	
Environment	Air Quality		36 households affected in 2025 1 tonnes of carbon saved in 2025	€0.004 €0.000	No	4.1	
	Noise and vibration Landscape and visual quality		36 households affected in 2025	-€0.030	No	3.7	
	Biodiversity		Not assessed		Not assessed	4.0	
	Cultural Heritage / archaeology		The proposed realignment will impact directly on Crolly Bridge Woods pNHA (001102), Cronaguddy Bog pNHA (001176), and Cloghernagore Bog and Glenveagh National Park SAC (002047) and pNHA.		Yes	1.0	
	Landuse		No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned section.		No	4.0	
	Water resources		The proposed realignments will primarily be within Wetlands but a few small sections are through Agricultural Areas.		No	4.0	
Safety	Accident reduction				No	3.0	
	Security		0.4 accidents saved in 2025	-€2.570		2.0	
Economy	Transport Efficiency and Effectiveness					4.0	
			53 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €13.942 €4.720 €0.000		6.7	
Accessibility and Social Inclusion	Other economic impacts			PVC Residual value €10.494 €0.714			
	Funding		Imperfect competition effects	€0.472		5.8	
Integration	Vulnerable groups					4.0	
	Deprived geographic areas		0 CLAR zones experience improved access to Hub/Gateway			3.9	
Integration	Transport integration					5.0	
	Land-use integration					6.7	
	Geographical integration					4.0	
	Integration with other government policies					4.0	
				NPV	€6.760	Total	5.4
				BCR	1.64	Red Flagged	Yes


**Problems Identified:**

- Lane width < 3m from Gweedore to south of Loughanure
- Lane width < 3m on northern approach to Dunglow
- Overall, Lane widths are < 3m for circa 70% of the corridor
- Sight distances are poor from Gweedore to south of Loughanure and on the approach to Dunglow for both 85kph and 100kph design standards.
- High incidence of accidents throughout the corridor.


N56.d.1.T2			Name: Dunglow to Lettermacaward					Type: S2 Type 2		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
119941 (Former link no. 118476)	2.576 (Former link length3.011)	65.5	8.0	5.6	3304	2.432	5.196	1.406	0.273	0.773
118477	0.577	65.5	8.0	5.6	3304	0.545	1.164	0.315	0.061	0.173
118480	4.075	72.5	4.0	1.3	3304	4.022	6.824	1.427	0.292	1.223
118479	2.705	59.5	10.0	7.8	3306	2.494	5.814	1.658	0.310	0.812
118482	1.511	59.5	10.0	7.8	3306	1.393	3.248	0.926	0.173	0.453
Dunglow to Lettermacaward	Total 11.444					Total 10.886				
<p>Notes:</p> <p>This route is quite bendy and hilly with widths close to or at T3 standards. The route is very bendy for and hilly for approx 1km either side of the junction with the R252. This route is extremely bendy and hilly from Meenacarn for approx 1.3km until north of Lough Acrockan where the landscape is sidelong and rock outcrops are frequent. There are very limited overtaking sections along this route. Where straight sections exist the overtaking is hampered by the poor vertical alignment. It is not proposed to upgrade the first 975m of this route outside the speed limit restriction at Dunglow as it is close to Type 2 standard, a short section of it has been recently upgraded to include a right turn lane, much of it also has a footpath to the south side and the section around Dunglow Lough has existing retaining walls and will be difficult to upgrade. It is therefore proposed to start this upgrade south of Dunglow Lough.</p> <p>There is also a recently upgraded section to circa Type 3 standard widths only but still a non overtaking zone for approximately 600m west of Oughtmeen. This route corridor is characterised by varying peaty / boggy and also rock outcropping terrain.</p> <p>To the east of this route there are a number of areas environmentally designated as both NHA's and SAC's. These include Dunglow Lough; Lough Craghy; Lough Fad; Drummeen Hill; Meenlecknalore Lough; Lough Namurrig; Lough Garrive; Lough Sallagh; Lough Machugh; and the Gweebarra River estuary.</p> <p>1 No Owennamarve River crossing (existing stone bridge is narrow and on a bad bend, will need to be replaced). (cost added).</p> <p>1 No stream crossing south of Meenacarn. Existing bridge is narrow and on a bad bend, may need to be replaced. (cost added).</p> <p>3 No stream crossings.</p> <p>Possible poor subgrade for much of this route with wetland / boggy areas visibly (cost added) but rock outcrops also visible in places.</p> <p>Low Traffic Poor Subgrade – Maintenance Category 3</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p> <p>Splt link 118476 @ approx (178180, 411200) resulting link 119941.</p>						TOTAL:	22.246	5.732	1.109	3.433
						Any special costs	3.900	0.000	0.000	0.000
						Grand Total	36.420			



PABS Appraisal Summary Table - N56d.1.T2						
Scheme Option: N56 Dunglow to Lettermacaward		Description: 10.886km upgrade to S2 Type 2 standard		Problems Identified:		Budget Cost (million) <b>€36.42</b>
				<ul style="list-style-type: none"><li>• All of corridor has lane widths &lt; 3m</li><li>• Intermittent sightline problem for 6km-7km south of Dunglow for 85kph design standard.</li><li>• Pronounced sightline problem adjacent to Trawenagh Bay for both 85kph and 100kph design standards.</li><li>• Pronounced sightline problem adjacent to Gweebarra Bay for both 85kph and 100kph design standards for circa 5km.</li><li>• Intermittent sightline problem on approach to Glenties for 100kph design standard, slightly less so for the 85kph design standard.</li><li>• Poor pavement condition with significant portion of the route with IRI &gt; 4.</li></ul>		
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		52 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.023 €0.000	No	3.9
	Noise and vibration Landscape and visual quality		52 households affected in 2025	-€0.165	No	3.2
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will impact directly on Cloghemagore Bog and Glenveagh National Park SAC (002047) and pNHA, and Gannivegil Bog SAC (000142) and pNHA. There is also potential for indirect impacts to the West of Ardara/Maas Road SAC (000197) and pNHA, and Trawenagh Bay (Shellfish Area).			Yes	1.0
	Landuse	No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned section.			No	4.0
Safety	Water resources	The proposed realignments will primarily be within Wetlands Agricultural Areas but some small sections are through Agricultural Areas and Forest Semi Natural Areas.			No	4.0
	Accident reduction	The proposed realignments in this section of the N56 will cross the Owennamarve River which discharges to the Trawenagh Bay (Shellfish Area).			No	3.0
	Security	No additional facility for walkers and cyclists is to be provided.	0.8 accidents saved in 2025	€0.426		4.1
Economy	Transport Efficiency and Effectiveness		120 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €9.306 €11.608 €0.000		5.2
	Other economic impacts		Imperfect competition effects	PVC Residual value €25.199 €1.956		5.3
Accessibility and Social Inclusion	Funding	Not assessed		€1.161		5.8
	Vulnerable groups Deprived geographic areas	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
Integration			2 CLAR zones experience improved access to Hub/Gateway			4.5
	Transport integration					4.0
	Land-use integration					6.7
	Geographical integration					4.1
	Integration with other government policies					4.1
				NPV	-€0.934	<b>Total</b>
				BCR	0.96	<b>Red Flagged</b>
						<b>5.1</b>
						Yes

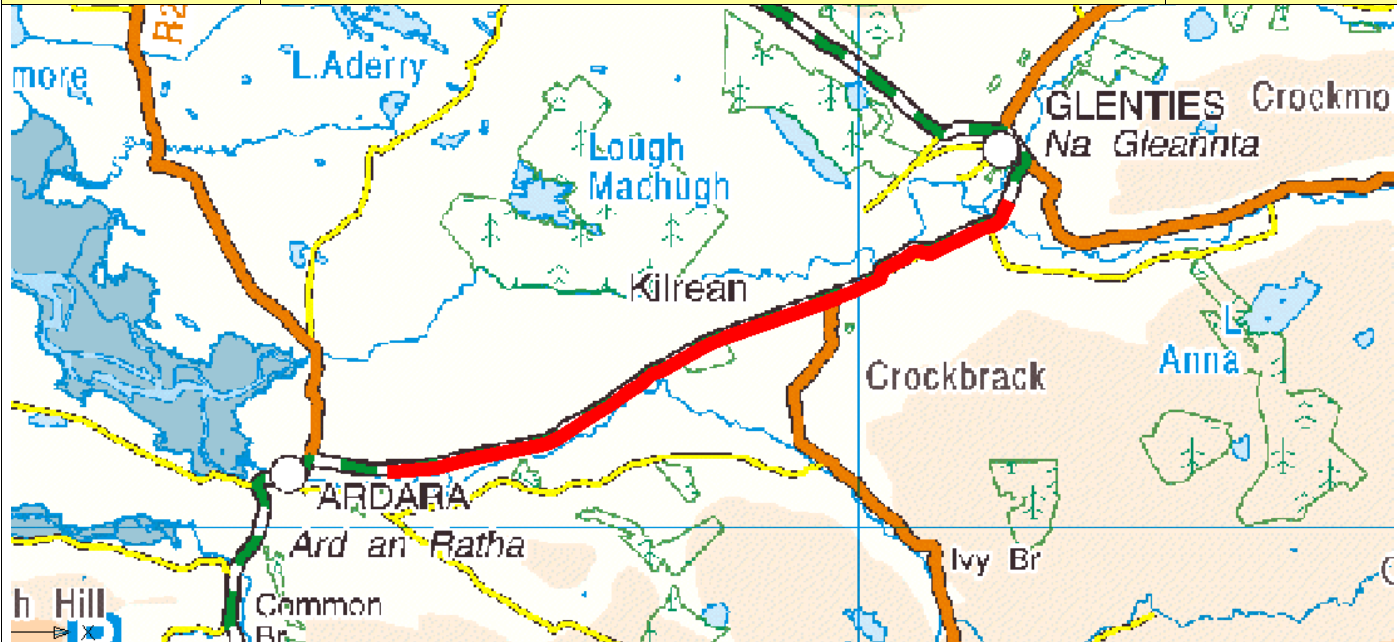
N56.d.1.T3			Name: Dunglow to Lettermacaward					Type: S2 Type 3			
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
119941 (Former link no. 118476)	2.576 (Former link length3.011)	65.5	4.0	1.4	3308	2.540	3.168	0.517	0.146	0.773	
118477	0.577	65.5	4.0	1.4	3308	0.569	0.710	0.116	0.033	0.173	
118480	4.075	72.5	1.5	0.0	3306	4.075	4.209	0.393	0.118	1.223	
118479	2.705	59.5	5.5	2.2	3310	2.645	3.586	0.694	0.190	0.812	
118482	1.511	59.5	5.5	2.2	3310	1.478	2.003	0.388	0.106	0.453	
Dunglow to Lettermacaward	Total 11.444					Total 11.307					
<p>Notes:</p> <p>This route is quite bendy and hilly with widths close to or at Type 3 standards. The route is very bendy for and hilly for approx 1km either side of the junction with the R252. This route is extremely bendy and hilly from Meenacarn for approx 1.3km until north of Lough Acrockan where the landscape is sidelong and rock outcrops are frequent. There are very limited overtaking sections along this route. Where straight sections exist the overtaking is hampered by the poor vertical alignment. It is not proposed to upgrade the first 975m of this route outside the speed limit restriction at Dunglow as it is close to Type 2 standard, a short section of it has been recently upgraded to include a right turn lane, much of it also has a footpath to the south side and the section around Dunglow Lough has existing retaining walls and will be difficult to upgrade. It is therefore proposed to start this upgrade south of Dunglow Lough.</p> <p>There is also a recently upgraded section to circa Type 3 standard, (widths only but still a non overtaking section) for approximately 600m west of Oughtmeen. This upgraded section has been subtracted from the costs.</p> <p>This route corridor is characterised by varying peaty / boggy and rock outcropping terrain. To the east of this route there are a number of areas environmentally designated as both NHA's and SAC's. These include Dunglow Lough; Lough Craghy; Lough Fad; Drummeen Hill; Meenlecknalore Lough; Lough Namurrig; Lough Garrive; Lough Sallagh; Lough Machugh; and the Gweebarra River estuary.</p> <p>1 No Owennamarve River crossing (existing stone bridge is narrow and on a bad bend, will need to be replaced). (cost added).</p> <p>1 No stream crossing south of Meenacarn. Existing bridge is narrow and on a bad bend, may need to be replaced. (cost added).</p> <p>3 No stream crossings.</p> <p>Possible poor subgrade for much of this route with wetland / boggy areas visibly (cost added) but rock outcrops also visible in places.</p> <p>Low Traffic Poor Subgrade – Maintenance Category 3</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p> <p>Split link 118476 @ approx (178180, 411200) resulting link 119941.</p>							TOTAL:	13.677	2.108	0.592	3.433
							Any special costs	3.200 -1.165	-0.180	-0.050	-0.292
							Grand Total	21.323			

PABS Appraisal Summary Table - N56d.1.T3							
Scheme Option: N56 Dunglow to Lettermacaward		Description: 11.307km upgrade to S2 Type 3 standard		Problems Identified: <ul style="list-style-type: none"><li>All of corridor has lane widths &lt; 3m</li><li>Intermittent sightline problem for 6km-7km south of Dunglow for 85kph design standard.</li><li>Intermittent sightline problem adjacent to Trevenagh Bay for both 85kph and 100kph design standards.</li><li>Pronounced sightline problem adjacent to Gweebarra Bay for both 85kph and 100kph design standards for circa 5km.</li><li>Intermittent sightline problem on approach to Glenties for 100kph design standard, slightly less so for the 85kph design standard.</li><li>Poor pavement condition with significant portion of the route with IRI &gt; 4.</li></ul>		Budget Cost (million) €1.32	
Objective	Sub-objective	Qualitative impacts		Quantitative assessment	Monetised (million 30 yrs)	Score	
Environment	Air Quality			52 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.006 €0.000	No 4.0	
	Noise and vibration Landscape and visual quality			52 households affected in 2025	-€0.073	No 3.3	
	Biodiversity	Not assessed				Not assessed 4.0	
	Cultural Heritage / archaeology	The proposed realignment will impact directly on Cloghemagore Bog and Glenveagh National Park SAC (002047) and pNHA, and Gannivegil Bog SAC (000142) and pNHA. There is also potential for indirect impacts to the West of Ardara/Maas Road SAC (000197) and pNHA, and Trawenagh Bay (Shellfish Area).				Yes 1.0	
	Landuse	No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned section.				No 4.0	
Safety	Water resources	The proposed realignments will primarily be within Wetlands Agricultural Areas but some small sections are through Agricultural Areas and Forest Semi Natural Areas.				No 4.0	
	Accident reduction	The proposed realignments in this section of the N56 will cross the Owernamarve River which discharges to the Trawenagh Bay (Shellfish Area).				No 3.0	
	Security	No additional facility for walkers and cyclists is to be provided.		0.5 accidents saved in 2025	-€2.632	2.4 4.0	
Economy	Transport Efficiency and Effectiveness			62 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €15.741 €6.276 €0.000	6.5	
	Other economic impacts			Imperfect competition effects	PVC Residual value €13.250 €0.933		
	Funding	Not assessed			€0.628	5.9 4.0	
Accessibility and Social Inclusion	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0	
	Deprived geographic areas			1 CLAR zones experience improved access to Hub/Gateway		4.2	
	Transport integration					4.0	
Integration	Land-use integration					6.7	
	Geographical integration					4.1	
	Integration with other government policies					4.1	
				NPV	€7.617	Total	5.3
				BCR	1.57	Red Flagged	Yes

N56.d.2.T3			Name: Lettermacaward to Glenties					Type: S2 Type 3		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118486	0.590	59.5	5.5	2.2	3310	0.577	0.782	0.151	0.041	0.177
118485	5.603	46.5	13.6	7.6	3304	5.177	7.583	1.558	0.415	1.681
118488	5.318	73.5	1.2	0.0	3306	5.318	5.304	0.415	0.127	1.595
118487	0.589	67	3.2	0.8	3308	0.584	0.704	0.107	0.031	0.177
Lettermacaward to Glenties	Total 12.100					Total 11.656				
<p>Notes:</p> <p>This route is narrow and extremely bendy and hilly from Lettermacaward to Maas. This section will be difficult to upgrade due to the topography and the proliferation of dwellings along the route. The existing Gweebarra Bridge is sufficiently wide so it is proposed that this upgrade tie in either side of this bridge. (the length of this bridge 215m has therefore been removed from the costs) From Gweebarra Bridge to Maas much of the cross section is sidelong and quite steep in places. The current alignment is extremely poor with a very bendy and hilly alignment with no overtaking. Therefore any upgrade over this section would come at an increased construction cost. Between Maas and Glenties there is a relatively straight section but overtaking is hampered by slight changes in the horizontal alignment and also by the vertical alignment. The quality of this section of route could be greatly improved by smoothing out the vertical and horizontal alignments over this section. This section is characterised by rock outcropping and peaty / boggy terrain. The Gweebarra River estuary and also the lakes and forrest area to the southwest of the route are environmentally designated as NHA's' and SAC's. Sidelong construction for approx 4km. Approx 2km of this is steep (add const cost) The Mass River bridge near the junction with the R261 is sufficiently wide for this upgrade and this junction with the R261 has been recently upgraded to Type 2 standard. (this 220m upgraded section has also been removed from the costs). The narrow stone Sruthangarve Bridge will have to be replaced as it is on a bend. (add const cost)</p> <p>11 No. stream crossings.</p> <p>Possible poor subgrade over some sections between Maas and Glenties (add const cost)</p> <p>Low Traffic Poor Subgrade – Maintenance Category 3</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p>						TOTAL:	14.373	2.232	0.614	3.630
						Any special costs	2.376 0.200 0.891 -0.517	0.553 -0.080	-0.022	-0.131
						Grand Total	24.119			

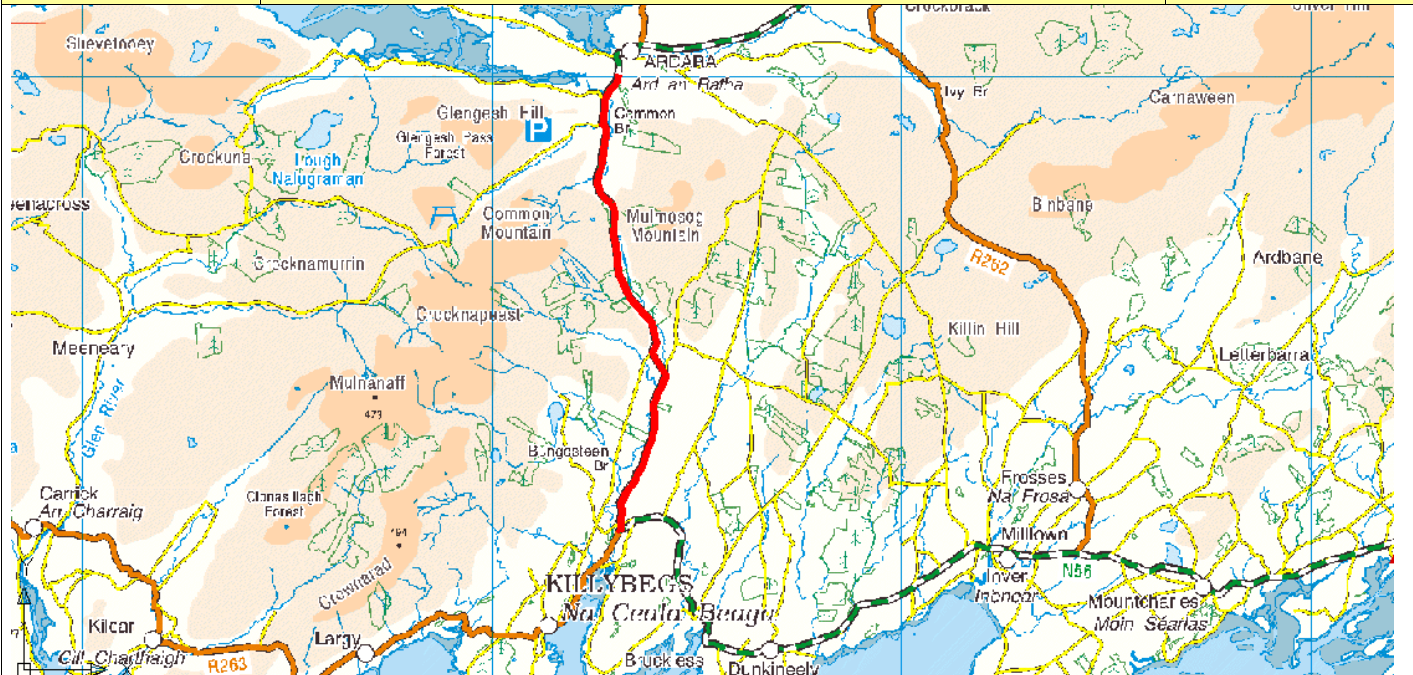
PABS Appraisal Summary Table - N56d.2.T3						
Scheme Option: N56 Lettermacaward to Glenties		Description: 11.656km upgrade to S2 Type 3 standard	Problems Identified:			
			<ul style="list-style-type: none"> <li>All of corridor has lane widths &lt; 3m</li> <li>Intermittent sightline problem for 6km-7km south of Dunglow for 85kph design standard.</li> <li>Pronounced sightline problem adjacent to Trevenagh Bay for both 85kph and 100kph design standards.</li> <li>Pronounced sightline problem adjacent to Gweebarra Bay for both 85kph and 100kph design standards for circa 5km.</li> <li>Intermittent sightline problem on approach to Glenties for 100kph design standard, slightly less so for the 85kph design standard.</li> <li>Poor pavement condition with significant portion of the route with IRI &gt; 4.</li> </ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		63 households affected in 2025 -2 tonnes of carbon saved in 2025	-€0.040 €0.000	No	3.7
	Noise and vibration Landscape and visual quality	Not assessed	63 households affected in 2025	-€0.245	No	2.2
	Biodiversity	The proposed realignment will impact directly on the West of Ardara/Maas Road SAC (000197) and pNHA, and the Owenea Freshwater Pearl Mussel catchment.			Not assessed	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Ritual Site – Holy Well and a Ringfort.			Yes	1.0
	Landuse	The proposed realignments will primarily be within Agricultural Areas and Wetlands but two sections are through Waterbodies and two sections are through Forest Semi Natural Areas.			No	4.0
Safety	Water resources	The proposed realignments in this section of the N56 will impact directly on the Owenea Freshwater Pearl Mussel catchment.			Yes	2.5
	Accident reduction		0.4 accidents saved in 2025	-€1.294		3.4
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0
	Transport Efficiency and Effectiveness		160 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €12.925 €17.794 €0.000		6.8
	Other economic impacts		Imperfect competition effects	PVC Residual value €16.723 €1.122		
	Funding	Not assessed		€1.779		7.0
Accessibility and Social Inclusion	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		1 CLAR zones experience improved access to Hub/Gateway			3.9
Integration	Transport integration					
	Land-use integration					4.0
	Geographical integration					6.7
	Integration with other government policies					4.1
				NPV	€15.318	Total
				BCR	1.92	Red Flagged
						5.5
						Yes



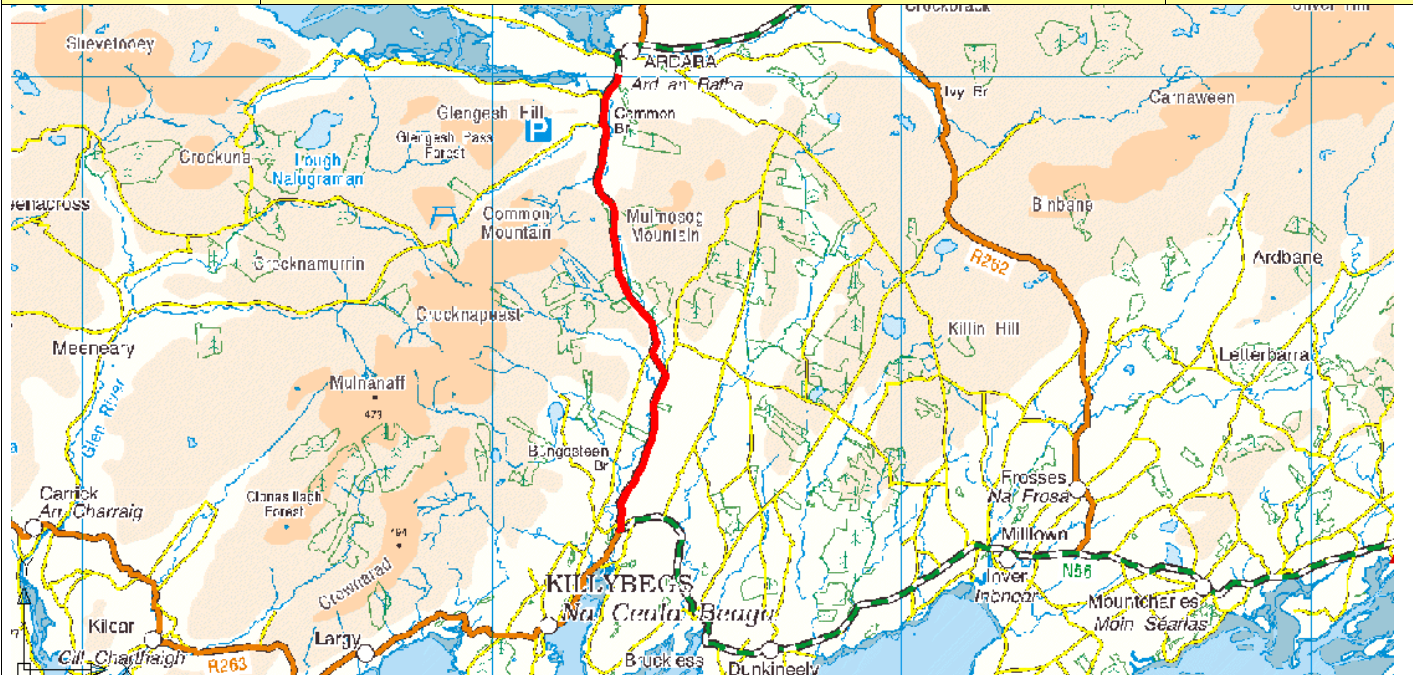
N56.e.1.T3			Name: Glenties to Ardara				Type: S2 Type 3			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
84843	2.390	67	3.2	0.8	3308	2.371	3.234	0.664	0.177	0.717
118489	0.566	67	3.2	0.8	3308	0.561	0.766	0.157	0.042	0.170
119944 (Former link no. 118490)	5.116 (Former link length 5.721)	74.5	1.1	0.0	3305	5.116	6.923	1.422	0.379	1.535
Glenties to Ardara	Total 8.072					Total 8.048				
<b>Notes:</b> This route is quite hilly coming out of Glenties and the pavement condition is very poor. This section is followed by an upgraded section to approximately Type 3 standard for 3.41km until the side road junction where the route first comes close to the Owentocker River. (For 1.31km of this section the road is widened but with no improvements to geometry, its has a mix of short OT and non-overtaking and is not really to any standards. After this section the road narrows and straightens with a mix of overtaking and non-overtaking due to mainly vertical alignment restrictions over this 2.1km section). This 3.41km upgraded section has been removed from the costs. From this upgraded section until 605m before the speed limit at Ardara the route is quite narrow, bendy and hilly. The final 605m appears to have been recently resurfaced and is to approx Type 2 standard. This section is therefore not included in this upgrade. The Owenea River is environmentally designated as both an NHA and an SAC. This route crossed this environmentally sensitive area at the outskirts of Glenties. It is thought that the existing Mullenien Bridge at this location is wide enough to accommodate this upgrade. The route also passes close to the Owenea River east of Kilrean. 5 No stream crossings. Low Traffic Poor Subgrade – Maintenance Category 3 IRI 3.6 to 5 – Maintenance Bracket 3  Split Link 118490 @ approx (174523, 390661) Resulting Link 119944						TOTAL:	10.924	2.244	0.598	2.422
						Any special costs	-4.615	-0.948	-0.253	-1.023
						Grand Total	9.349			

PABS Appraisal Summary Table - N56e.1.T3						
Scheme Option: N56 Glenties to Ardara		Description: 8.048km upgrade to S2 Type 3 standard	Problems Identified: · Practically all of this section of route has lane widths < 3m · Sightline problems are identified south of Glenties for both 85kph and 100kph design standards. · Sightline problems are identified at Ardara village · Sightline problems are identified for circa 10km, north and east of Killybegs · Accident problem is evident south of Ardara village · Accident problem is evident east of Killybegs · Poor pavement condition between Ardara village and Killybegs.			Budget Cost (million) €9.35
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		94 households affected in 2025	-€0.002	No	4.0
	Noise and vibration		0 tonnes of carbon saved in 2025	€0.000	No	2.4
	Landscape and visual quality	Not assessed	94 households affected in 2025	-€0.078	Not assessed	4.0
	Biodiversity	The proposed realignment will impact directly on the West of Ardara/Maas Road SAC (000197) and pNHA, and the Owenea Freshwater Pearl Mussel catchment.			Yes	1.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Ringfort, a Megalithic Tomb and a Graveyard.			No	3.0
Safety	Landuse	The proposed realignments will primarily be within Wetlands and Agricultural Areas.			No	4.0
	Water resources	The proposed realignments in this section of the N56 will impact directly on the Owenea Freshwater Pearl Mussel catchment. It also runs adjacent to the Owentocker River for a large proportion of this section.			Yes	2.5
	Accident reduction		0.1 accidents saved in 2025	-€0.040		3.9
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0
	Transport Efficiency and Effectiveness		11 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €1.360 €0.491 €0.000		4.5
				PVC Residual value €5.736 €0.458		
	Other economic impacts		Imperfect competition effects	€0.049		4.3
	Funding	Not assessed				4.0
Accessibility and Social Inclusion	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		3 CLAR zones experience improved access to Hub/Gateway			6.5
	Transport integration					5.0
	Land-use integration					6.7
	Geographical integration					4.1
Integration	Integration with other government policies					4.1
				NPV	Total	4.9
				BCR	Red Flagged	Yes



N56.e.2.T2			Name: Ardara to Killybegs (R263 junction)					Type: S2 Type 2		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118492	3.443	66	6.8	4.0	3305	3.305	6.883	1.845	0.359	1.033
118494	6.224	71.5	4.3	1.7	3304	6.118	10.802	2.400	0.486	1.867
118493	2.522	64	8.2	6.3	3305	2.363	5.209	1.442	0.277	0.757
Ardara to Killybegs (R263 junction)	Total 12.189					Total 11.786				
<p>Notes:</p> <p>This route is generally very bendy and narrow and also has a very poor vertical alignment in places with occasional sections with good alignment and overtaking opportunities. Notwithstanding, there are long sections with no overtaking. There are a number of relatively straight sections near Meenapeaky but overtaking is hampered at these locations by the poor vertical alignment. From Meentullynagarn Bridge to the junction with the R263 the route is extremely bendy and narrow. Variability in road width is also noted. The pavement condition is very poor in places along this route, this combined with the boggy nature of the surrounding countryside reinforces the opinion that there is poor subgrade for much of this route between Ardara and the R263.</p> <p>The Brackey River estuary is environmentally designated as an NHA and SAC and this route passes close to this area near Ardara.</p> <p>Sidelong construction for approx 2.25km near Altnandewon (add const cost).</p> <p>Narrow stone bridge over River Brackey is on a bad bend and will need to be replaced.</p> <p>1 No. narrow stone bridge north of Brackey Bridge is on a bad bend and will need to be replaced.</p> <p>Narrow stone bridge (Meentullynagarn Bridge) over Stragar River, to be widened / replaced.</p> <p>12 No. stream crossings.</p> <p>The N56 does not have right of way at the junction with the R263.</p> <p>Low Traffic Poor Subgrade – Maintenance Category 3</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p>						TOTAL:	22.893	5.687	1.123	3.657
						Any special costs	1.210 2.324 0.200	0.000	0.000	0.000
						Grand Total	37.094			

PABS Appraisal Summary Table - N56e.2.T2							
Scheme Option: N56 Ardara to Killybegs (R263 junction)		Description: 11.786km upgrade to S2 Type 2 standard		Problems Identified: · Practically all of this section of route has lane widths < 3m · Sightline problems are identified south of Glenties for both 85kph and 100kph design standards. · Sightline problems are identified at Ardara village · Sightline problems are identified for circa 10km, north and east of Killybegs · Accident problem is evident south of Ardara village · Accident problem is evident east of Killybegs · Poor pavement condition between Ardara village and Killybegs.		Budget Cost (million) €37.09	
Objective	Sub-objective	Qualitative impacts		Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality			66 households affected in 2025	€0.010	No	4.1
	Noise and vibration			1 tonnes of carbon saved in 2025	€0.000	No	4.0
	Landscape and visual quality			66 households affected in 2025	€0.000	Not assessed	4.0
	Biodiversity					Yes	1.0
	Cultural Heritage / archaeology	The proposed realignment will impact directly on the Slieve Tooley / Tormore Island / Loughros Beg Bay SAC and pNHA (000190).				No	3.0
	Landuse	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Ringfort and an Enclosure.				No	4.0
Safety	Water resources	The proposed realignments will primarily be within Wetlands, Agricultural Areas and Forest Semi Natural Areas.				Yes	3.0
	Accident reduction	The proposed realignments in this section of the N56 will cross the Brackey River and the Aighe River which both discharge to the Slieve Tooley / Tormore Island / Loughros Beg Bay SAC and pNHA (000190).					
Economy	Security	No additional facility for walkers and cyclists is to be provided.		0.6 accidents saved in 2025	€2.112		4.7
	Transport Efficiency and Effectiveness			51 vehicle-hours per day in travel time saved in 2025	€3.454		4.8
				Non-work	€3.508		
				Active travel	€0.000		
Accessibility and Social Inclusion	Other economic impacts			Imperfect competition effects	€24.274		4.6
	Funding				€1.968		4.0
	Vulnerable groups						7.0
	Deprived geographic areas			3 CLAR zones experience improved access to Hub/Gateway			
Integration	Transport integration						5.0
	Land-use integration						6.7
	Geographical integration						4.1
	Integration with other government policies						4.1
				NPV	-€6.871	Total	5.1
				BCR	0.72	Red Flagged	Yes

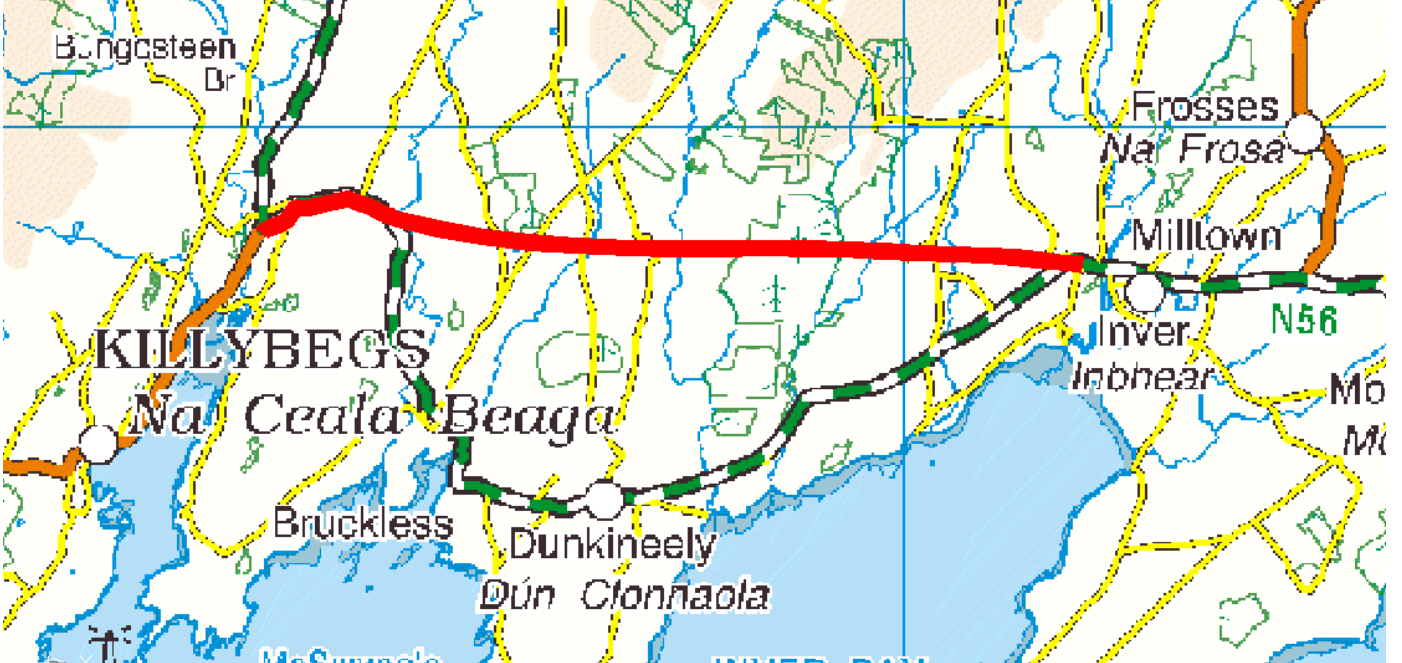
N56.e.2.T3			Name: Ardara to Killybegs (R263 junction)					Type: S2 Type 3			
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
118492	3.443	66	3.2	0.9	3309	3.412	4.197	0.671	0.190	1.033	
118494	6.224	71.5	1.6	0.1	3306	6.218	6.639	0.709	0.210	1.867	
118493	2.522	64	4.2	1.7	3309	2.479	3.178	0.549	0.154	0.757	
Ardara to Killybegs (R263 junction)	Total 12.189					Total 12.109					
<p>Notes:</p> <p>This route is generally very bendy and narrow and also has a very poor vertical alignment in places with occasional sections with good alignment and overtaking opportunities. Notwithstanding there are long sections with no overtaking. There are a number of relatively straight sections near Meenapeaky but overtaking is hampered at these locations by the poor vertical alignment. From Meentullynagarn Bridge to the junction with the R263 the route is extremely bendy and narrow. Variability in road width is also noted. The pavement condition is very poor in places along this route, this combined with the boggy nature of the surrounding countryside reinforces the opinion that there is poor subgrade for much of this route between Ardara and the R263The Bracky River estuary is environmentally designated as an NHA and SAC and this route passes close to this area near Ardara.</p> <p>Sidelong construction for approx 2.25km near Altnandewon (add const cost).</p> <p>Narrow stone bridge over River Bracky is on a bad bend and will need to be replaced.</p> <p>1 No. narrow stone bridge north of Bracky Bridge is on a bad bend and will need to be replaced.</p> <p>Narrow stone bridge (Meentullynagarn Bridge) over Stragar River, to be widened / replaced.</p> <p>12 No. stream crossings.</p> <p>The N56 does not have right of way at the junction with the R263.</p> <p>Low Traffic Poor Subgrade – Maintenance Category 3</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p>						TOTAL:	14.014	1.929	0.553	3.657	
						Any special costs	0.740 1.421 0.200	0.000	0.000	0.000	
Grand Total						22.514					



PABS Appraisal Summary Table - N56e.2.T3							
Scheme Option: N56 Ardara to Killybegs (R263 junction)		Description: 12.109km upgrade to S2 Type 3 standard		Problems Identified: · Practically all of this section of route has lane widths < 3m · Sightline problems are identified south of Glenties for both 85kph and 100kph design standards. · Sightline problems are identified at Ardara village · Sightline problems are identified for circa 10km, north and east of Killybegs · Accident problem is evident south of Ardara village · Accident problem is evident east of Killybegs · Poor pavement condition between Ardara village and Killybegs.		Budget Cost (million) €22.51	
Objective	Sub-objective	Qualitative impacts		Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality			66 households affected in 2025	-€0.006	No	4.0
	Noise and vibration			0 tonnes of carbon saved in 2025	€0.000	No	2.9
	Landscape and visual quality	Not assessed		66 households affected in 2025	-€0.133	Not assessed	4.0
	Biodiversity					Yes	1.0
	Cultural Heritage / archaeology	The proposed realignment will impact directly on the Slieve Tooley / Tormore Island / Loughros Beg Bay SAC and pNHA (000190).				No	3.0
	Landuse	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Ringfort and an Enclosure.				No	4.0
Safety	Water resources	The proposed realignments will primarily be within Wetlands, Agricultural Areas and Forest Semi Natural Areas.				Yes	3.0
	Accident reduction			0.2 accidents saved in 2025	-€0.888		3.5
	Security	No additional facility for walkers and cyclists is to be provided.					4.0
Economy	Transport Efficiency and Effectiveness			25 vehicle-hours per day in travel time saved in 2025	Non-work €3.301 Work €1.609 Active travel €0.000		4.5
	Other economic impacts			Imperfect competition effects	PVC €14.261 Residual €0.960 value €0.161		4.5
Accessibility and Social Inclusion	Funding	Not assessed					4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.					4.0
	Deprived geographic areas			3 CLAR zones experience improved access to Hub/Gateway			6.6
	Transport integration						5.0
Integration	Land-use integration						6.7
	Geographical integration						4.1
	Integration with other government policies						4.1
				NPV	-€9,257	Total	4.9
				BCR	0.35	Red Flagged	Yes

N56.f.1.1.T1			Name: Killybegs (Junction with R263) to Inver					Type: S2 Type 1		
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118495	3.575	64	N/A	0.0	3301	3.575	11.083	3.218	0.465	1.073
119953 (Former link nos. 118498 118500 118502 & (part of 118501))	3.515 (Former link length 0.505 1.920 0.881 & (1.072 of 3.823))	N/A	N/A	0.0	3301	3.515	10.897	3.164	0.457	1.055
Killybegs (R263) to Inver	Total 7.090					Total 7.090				
<p>Notes:</p> <p>From the junction with the R263 to Bruckless the carriageway cross section is close to Type 3 standard but the alignment both horizontally and vertically is not to Type 3 standard. From Bruckless to Dunkineely the route is bendy and narrow with a poor vertical alignment and no overtaking zones. It is therefore proposed to bypass both Bruckless and Dunkineely. The remainder of this route from the end of the bypass section to Inver is already to type 2 standard or better and is therefore not considered for upgrade here. There are no environmentally designated areas in the vicinity of this route. Milltown Bridge over Oily River should be wide enough to accommodate this upgrade. 1 No. new bridge over the river that flows into Bruckless Harbour (medium structure) 1 No. new bridge over the Bun Lacky River (medium structure) 6 No. stream crossings. The N56 does not have right of way at the junction with the R263. Low Traffic Poor Subgrade – Maintenance Category 3 IRI 3.6 to 5 – Maintenance Bracket 3</p> <p>Split link 118501 @ approx (178242, 376384) resulting link 119953</p>						TOTAL:	21.979	6.381	0.922	2.127
						Any special costs	0.800	0.000	0.000	0.000
						Grand Total	32.209			

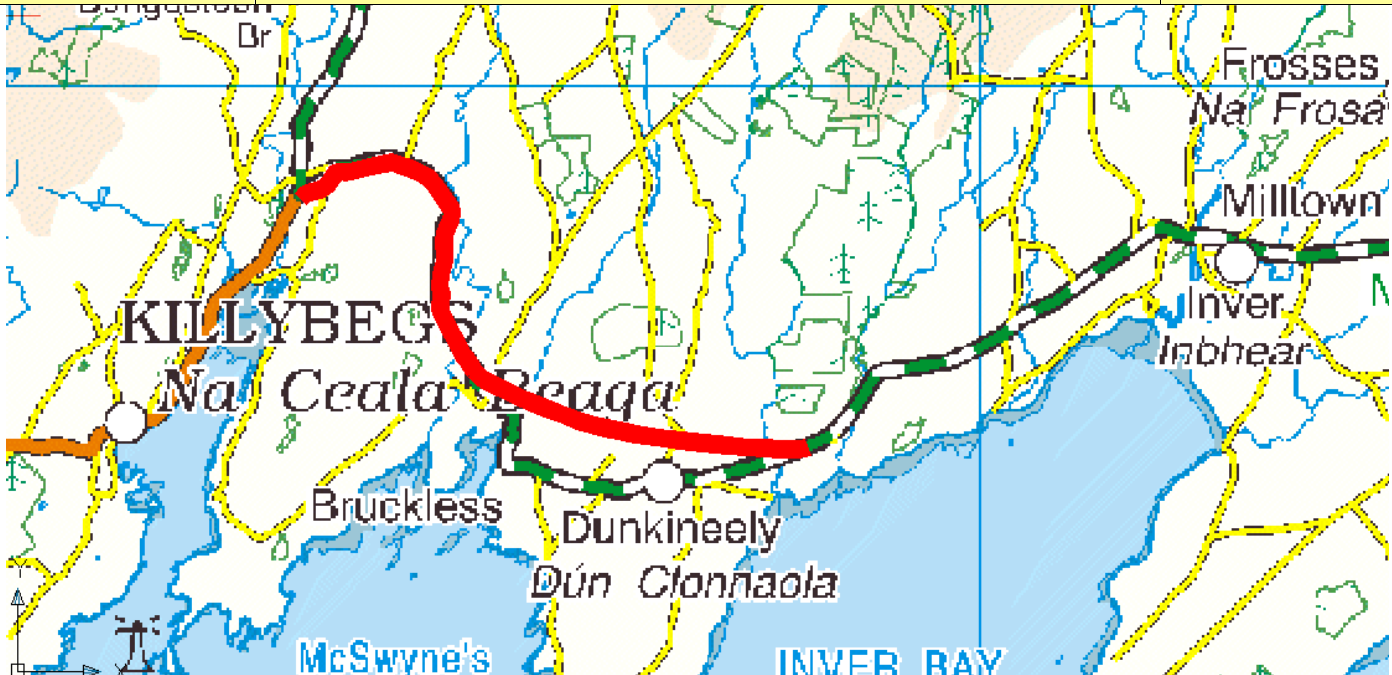
PABS Appraisal Summary Table - N56f.1.1.T1						
Scheme Option: N56 Killybegs (Junction with R263) to Inver		Description: 7.09km upgrade to S2 Type 1 standard	Problems Identified:			Budget Cost (million) €22.21
			<ul style="list-style-type: none"> <li>One isolated section, circa 1km long located east of Inver where the lane widths are &lt; 3m</li> <li>Short intermittent sections with poor sightlines between Mountcharles and Inver for both 85kph and 100kph design standards.</li> <li>Short intermittent sections with poor sightlines between Inver and Dunkineely for the 100kph design standard.</li> <li>Significant historical accident problem along the route.</li> </ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		76 households affected in 2025 -8 tonnes of carbon saved in 2025	-€0.175 €0.000	No	3.0
	Noise and vibration Landscape and visual quality		76 households affected in 2025	€0.223	No	5.2
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment may impact indirectly on the McSwynes Bay (Shellfish Area).			No	3.0
	Landuse	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including an Enclosure.			No	3.0
Safety	Water resources	The proposed realignments will primarily be within Wetlands, Agricultural Areas and Forest Semi Natural Areas.			No	4.0
	Accident reduction Security	The proposed realignments in this section of the N56 will cross the River Oily which discharges to the McSwynes Bay (Shellfish Area) and the Bunlacky River. No additional facility for walkers and cyclists is to be provided.	1.9 accidents saved in 2025	€9.305	No	3.0
Economy	Transport Efficiency and Effectiveness					7.0
						4.0
			135 vehicle-hours per day in travel time saved in 2025	Non-work Work €25.856 €7.444		6.3
				Active travel €0.000		
				PVC Residual value €22.050 €1.925		
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	€0.744		5.4
	Funding	Not assessed				4.0
	Vulnerable groups Deprived geographic areas	None of the route corridor is within 4km of a settlement of 1,500 people or more.	3 CLAR zones experience improved access to Hub/Gateway			4.0
Integration	Transport integration					5.5
	Land-use integration					5.0
	Geographical integration					7.0
	Integration with other government policies					4.1
				NPV	€23.273	Total
				BCR	2.06	Red Flagged
						5.8
						No

N56.f.1.2.T1			Name: Killybegs (Junction with R263 – The Five Points) to Inver					Type: S2 Type 1		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
119969 (Former link no. 118495)	1.440 (Former link length 3.575)	64	N/A	0.0	3301	1.440	4.464	1.296	0.187	0.432
119973 (Former link nos. (part of 118495) 118498 118500 118502 118501 & (part of 118504))	7.534 (Former link lengths (2.135 of 3.575) 0.505 1.920 0.881 3.823 & (1.585 of 2.776))	N/A	N/A	0.0	3301	7.534	23.355	6.781	0.979	2.260
Killybegs (The Five Points) to Inver	Total 12.289					Total 8.974				
<p>Notes:</p> <p>This route is similar to Phase 2 (Inver to The Five Points) of the N56 Mountcharles-Killybegs Junction (Five Points). This scheme is currently at route selection stage. From the junction with the R263 to Bruckless the existing carriageway cross section is close to Type 3 standard but the alignment both horizontally and vertically is not to Type 3 standard. From Bruckless to Dunkineely the route is bendy and narrow with a poor vertical alignment and no overtaking zones. It is therefore proposed to bypass both Bruckless and Dunkineely.</p> <p>There are no environmentally designated areas in the vicinity of this route. Route passes through approx. 1km of forrest.</p> <p>Hilly terrain could lead to additional earthworks costs.</p> <p>1 No. new bridge over the Oily River (medium structure) add cost.</p> <p>1 No. new bridge over the river that flows into Bruckless Harbour (minor structure)</p> <p>1 No. new bridge over the Bun Lacky River (medium structure)</p> <p>1 No. new bridge over river at Coolshangan (medium structure)</p> <p>7 No. stream crossings.</p> <p>The N56 does not have right of way at the junction with the R263.</p> <p>Low Traffic Poor Subgrade – Maintenance Category 3</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p> <p>Split Link 118495 @ (174412,379103) resulting link 119969</p> <p>Split Link 118504 @ (181789,378545) new link 119973</p>						TOTAL:	27.819	8.077	1.167	2.692
						Any special costs	1.000	0.000	0.000	0.000
						Grand Total	40.755			

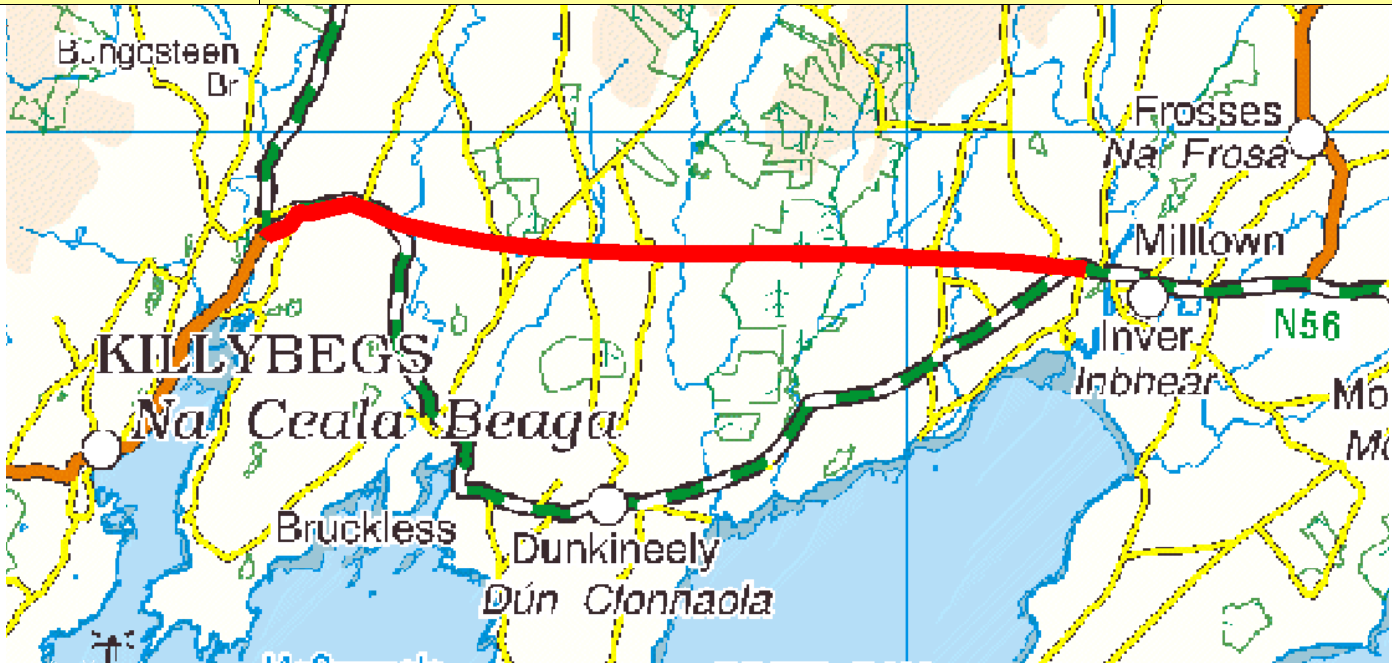


PABS Appraisal Summary Table - N56f.1.2.T1						
Scheme Option: N56 Killybegs (Junction with R263) to Inver		Description: 8.974km upgrade to S2 Type 1 standard	Problems Identified:			
			<ul style="list-style-type: none"> <li>One isolated section, circa 1km long located east of Inver where the lane widths are &lt; 3m</li> <li>Short intermittent sections with poor sightlines between Mountcharles and Inver for both 85kph and 100kph design standards.</li> <li>Short intermittent sections with poor sightlines between Inver and Dunkineely for the 100kph design standard.</li> <li>Significant historical accident problem along the route.</li> </ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		6 households affected in 2025 8 tonnes of carbon saved in 2025	€0.086 €0.000	No	4.4
	Noise and vibration Landscape and visual quality		6 households affected in 2025	€3.154	No	7.0
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	Realignment of the route may impact indirectly on the McSwynes Bay (Shellfish Area) and Inver Bay (Shellfish Area).			No	3.0
	Landuse	One Ringfort will be directly impacted by the proposed realignments and a number of sites will be brought within 100m of the realigned sections of the route including 4 Ringforts, a Megalithic Tomb, Standing stone and 2 Enclosures.			No	3.0
Safety	Water resources	The proposed realignments will primarily be within Agricultural Area but will also run through three Forest and Semi Natural Areas and one wetland area.			No	4.0
		The proposed realignments in this section of the N56 will cross the River Oily which discharges to the Mc Swynes Bay (Shellfish Area) and will cross Bunlacky River which discharges into Inver Bay (Shellfish Area).			No	3.0
	Accident reduction		2.7 accidents saved in 2025	€14.450		7.0
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0
	Transport Efficiency and Effectiveness		424 vehicle-hours per day in travel time saved in 2025	Non-work Work €35.736 €12.010		6.6
				Active travel €0.000		
				PVC €27.697		
				Residual value €2.436		
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	€1.201		5.7
	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		3 CLAR zones experience improved access to Hub/Gateway			7.0
	Transport integration					
Integration	Land-use integration					5.0
	Geographical integration					7.0
	Integration with other government policies					4.1
						4.1
				NPV €41.377	Total	6.1
				BCR 2.49	Red Flagged	No

Budget Cost (million) €40.76


N56.f.1.1.T2			Name: Killybegs (Junction with R263) to Inver					Type: S2 Type 2		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118495	3.575	64	8.2	6.3	3305	3.350	7.383	2.044	0.393	1.073
119953 (Former link nos. 118498 118500 118502 & (part of 118501))	3.515 (Former link length0.505 1.920 0.881 & (1.072 of 3.823))	N/A	N/A	0.0	3303	3.515	8.085	2.461	0.457	1.055
Killybegs (R263) to Inver	Total 7.090					Total 6.865				
<p>Notes:</p> <p>From the junction with the R263 to Bruckless the carriageway cross section is close to Type 3 standard but the alignment both horizontally and vertically is not to Type 3 standard. From Bruckless to Dunkineely the route is bendy and narrow with a poor vertical alignment and no overtaking zones. It is therefore proposed to bypass both Bruckless and Dunkineely. The remainder of this route from the end of the bypass section to Inver is already to type 2 standard or better and is therefore not considered for upgrade here. There are no environmentally designated areas in the vicinity of this route. Milltown Bridge over Oily River should be wide enough to accommodate this upgrade. 1 No. new bridge over the river that flows into Bruckless Harbour (medium structure) 1 No. new bridge over the Bun Lacky River (medium structure) 6 No. stream crossings. The N56 does not have right of way at the junction with the R263. Low Traffic Poor Subgrade – Maintenance Category 3 IRI 3.6 to 5 – Maintenance Bracket 3</p> <p>Split link 118501 @ approx (178242, 376384) resulting link 119953</p>						TOTAL:	15.468	4.505	0.850	2.128
						Any special costs	0.600	0.000	0.000	0.000
						Grand Total	23.551			

PABS Appraisal Summary Table - N56f.1.1.T2						
Scheme Option: N56 Killybegs (Junction with R263) to Inver	Description: 6.865km upgrade to S2 Type 2 standard	Problems Identified: <ul style="list-style-type: none"> <li>One isolated section, circa 1km long located east of Inver where the lane widths are &lt; 3m</li> <li>Short intermittent sections with poor sightlines between Mountcharles and Inver for both 85kph and 100kph design standards.</li> <li>Short intermittent sections with poor sightlines between Inver and Dunkineely for the 100kph design standard.</li> <li>Significant historical accident problem along the route.</li> </ul>	Budget Cost (million) €23.55			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		76 households affected in 2025 -7 tonnes of carbon saved in 2025	-€0.135 €0.000	No	3.0
	Noise and vibration Landscape and visual quality		76 households affected in 2025	€0.254	No	5.9
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment may impact indirectly on the McSwynes Bay (Shellfish Area).			No	3.0
	Landuse	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including an Enclosure.			No	3.0
	Water resources	The proposed realignments will primarily be within Wetlands, Agricultural Areas and Forest Semi Natural Areas.			No	4.0
Safety	Accident reduction	The proposed realignments in this section of the N56 will cross the River Oily which discharges to the McSwynes Bay (Shellfish Area) and the Bunlacky River.			No	3.0
	Security	No additional facility for walkers and cyclists is to be provided.	1.6 accidents saved in 2025	€4.110		6.1
Economy	Transport Efficiency and Effectiveness		126 vehicle-hours per day in travel time saved in 2025	Non-work Work €7.140 €0.000		6.5
	Other economic impacts			PVC Residual value €15.838 €1.358		
	Funding	Not assessed	Imperfect competition effects	€0.714		5.8
	Vulnerable groups Deprived geographic areas	None of the route corridor is within 4km of a settlement of 1,500 people or more.	3 CLAR zones experience improved access to Hub/Gateway			4.0
Accessibility and Social Inclusion	Transport integration					5.9
	Land-use integration					5.0
	Geographical integration					7.0
	Integration with other government policies					4.1
				NPV	€17.211	Total
				BCR	2.09	Red Flagged
						5.9
						No

N56.f.1.2.T2			Name: Killybegs (Junction with R263 – The Five Points) to Inver					Type: S2 Type 2		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
119969 (Former link no. 118495)	1.440 (Former link length 3.575)	64	8.2	6.3	3305	1.350	2.974	0.823	0.158	0.432
119973 (Former link nos. (part of 118495) 118498 118500 118502 118501 & (part of 118504))	7.534 (Former link lengths (2.135 of 3.575) 0.505 1.920 0.881 3.823 & (1.585 of 2.776))	N/A	N/A	0.0	3303	7.534	17.328	5.274	0.979	2.260
Killybegs (The Five Points) to Inver	Total 12.289					Total 8.884				
<p>Notes:</p> <p>This route is similar to Phase 2 (Inver to The Five Points) of the N56 Mountcharles-Killybegs Junction (Five Points). This scheme is currently at route selection stage. From the junction with the R263 to Bruckless the existing carriageway cross section is close to Type 3 standard but the alignment both horizontally and vertically is not to Type 3 standard. From Bruckless to Dunkineely the route is bendy and narrow with a poor vertical alignment and no overtaking zones. It is therefore proposed to bypass both Bruckless and Dunkineely.</p> <p>There are no environmentally designated areas in the vicinity of this route. Route passes through approx. 1km of forrest.</p> <p>Hilly terrain could lead to additional earthworks costs.</p> <p>1 No. new bridge over the Oily River (medium structure) add cost.</p> <p>1 No. new bridge over the river that flows into Bruckless Harbour (minor structure)</p> <p>1 No. new bridge over the Bun Lacky River (medium structure)</p> <p>1 No. new bridge over river at Coolshangan (medium structure)</p> <p>7 No. stream crossings.</p> <p>The N56 does not have right of way at the junction with the R263.</p> <p>Low Traffic Poor Subgrade – Maintenance Category 3</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p> <p>Split Link 118495 @ (174412,379103) resulting link 119969</p> <p>Split Link 118504 @ (181789,378545) new link 119973</p>						TOTAL:	20.302	6.097	1.137	2.692
						Any special costs	0.800	0.000	0.000	0.000
						Grand Total	31.028			

PABS Appraisal Summary Table - N56f.1.2.T2						
Scheme Option: N56 Killybegs (Junction with R263) to Inver	Description: 8.884km upgrade to S2 Type 2 standard	Problems Identified: <ul style="list-style-type: none"> <li>One isolated section, circa 1km long located east of Inver where the lane widths are &lt; 3m</li> <li>Short intermittent sections with poor sightlines between Mountcharles and Inver for both 85kph and 100kph design standards.</li> <li>Short intermittent sections with poor sightlines between Inver and Dunkineely for the 100kph design standard.</li> <li>Significant historical accident problem along the route.</li> </ul>	Budget Cost (million) €1.03			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		6 households affected in 2025 8 tonnes of carbon saved in 2025	€0.140 €0.000	No	4.8
	Noise and vibration Landscape and visual quality		6 households affected in 2025	€3.212	No	7.0
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	Realignment of the route may impact indirectly on the McSwynes Bay (Shellfish Area) and Inver Bay (Shellfish Area).			No	3.0
	Landuse	One Ringfort will be directly impacted by the proposed realignments and a number of sites will be brought within 100m of the realigned sections of the route including 4 Ringforts, a Megalithic Tomb, Standing stone and 2 Enclosures.			No	3.0
	Water resources	The proposed realignments will primarily be within Agricultural Area but will also run through three Forest and Semi Natural Areas and one wetland area. The proposed realignments in this section of the N56 will cross the River Oily which discharges to the Mc Swynes Bay (Shellfish Area) and will cross Bunlacky River which discharges into Inver Bay (Shellfish Area).			No	4.0
Safety	Accident reduction		2.4 accidents saved in 2025	€9.511		7.0
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0
	Transport Efficiency and Effectiveness		381 vehicle-hours per day in travel time saved in 2025	Non-work Work €33.122 €10.940		7.0
				Active travel €0.000		
				PVC Residual value €20.333 €1.813		
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	€1.094		6.2
	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				
	Deprived geographic areas		3 CLAR zones experience improved access to Hub/Gateway			7.0
Integration	Transport integration					
	Land-use integration					5.0
	Geographical integration					7.0
	Integration with other government policies					4.1
				NPV	€39.499	Total
				BCR	2.94	Red Flagged
						6.2
						No



N56.f.1.T3			Name: Killybegs (Junction with R263) to Dunkineely					Type: S2 Type 3		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118495	3.575	64	4.2	1.7	3309	3.514	4.505	0.778	0.218	1.073
118500	1.920	64	4.2	1.7	3309	1.887	2.420	0.418	0.117	0.576
Killybegs (R263) to Inver	Total 5.495					Total 5.401				
<p>Notes:</p> <p>From the junction with the R263 to Bruckless the carriageway cross section is close to Type 3 standard but the alignment both horizontally and vertically is not to Type 3 standard.</p> <p>From Bruckless to Dunkineely the route is bendy and narrow with a poor vertical alignment and no overtaking zones. The remainder of this route from Dunkineely to Inver is already to type 2 standard or better and is therefore not considered for upgrade here.</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>Milltown Bridge over Oily River should be wide enough to accommodate this upgrade.</p> <p>4 No. stream crossings.</p> <p>The N56 does not have right of way at the junction with the R263.</p> <p>Low Traffic Poor Subgrade – Maintenance Category 3</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p>						TOTAL:	6.925	1.196	0.335	1.649
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	10.105			

PABS Appraisal Summary Table - N56f.1.T3						
Scheme Option: N56 Killybegs (Junction with R263) to Dunkineely	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Score	
					Red Flag	Score
<b>Description:</b> 5.401km upgrade to S2 Type 3 standard  <b>Problems Identified:</b> <ul style="list-style-type: none"> <li>One isolated section, circa 1km long located east of Inver where the lane widths are &lt; 3m</li> <li>Short intermittent sections with poor sightlines between Mountcharles and Inver for both 85kph and 100kph design standards.</li> <li>Short intermittent sections with poor sightlines between Inver and Dunkineely for the 100kph design standard.</li> <li>Significant historical accident problem along the route.</li> </ul>	<b>Objective</b> Air Quality Noise and vibration Landscape and visual quality Biodiversity Cultural Heritage / archaeology Landuse Water resources	Not assessed  The proposed realignment may impact indirectly on the McSwynes Bay (Shellfish Area).  No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including two Enclosures.  The proposed realignments will primarily be within Agricultural Areas.  The proposed realignment may impact indirectly on the McSwynes Bay (Shellfish Area).	43 households affected in 2025 0 tonnes of carbon saved in 2025  43 households affected in 2025	€0.001 €0.000 -€0.047	No No Not assessed No No No No	4.0 3.1 4.0 3.0 3.0 4.0 3.0
<b>Safety</b>	Accident reduction	No additional facility for walkers and cyclists is to be provided.	0.3 accidents saved in 2025	-€0.273		1.2
<b>Economy</b>	Security					4.0
	Transport Efficiency and Effectiveness		40 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €5.006 €1.920 €0.000		5.6
				PVC Residual value €6.519 €0.467		
	Other economic impacts		Imperfect competition effects	€0.192		5.2
<b>Accessibility and Social Inclusion</b>	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		0 CLAR zones experience improved access to Hub/Gateway			4.0
	Transport integration					5.0
<b>Integration</b>	Land-use integration					7.0
	Geographical integration					4.1
	Integration with other government policies					4.1
				NPV	-€1.255	<b>Total</b>
				BCR	0.81	<b>Red Flagged</b>
						<b>5.0</b>
						No




N56.f.2.T1			Name: Inver to Mountcharles				Type: S2 Type 1				
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
119954 (Former link no. 118503)	0.236 (Former link length1.384)	72	N/A	0.0	3301	0.236	0.732	0.212	0.031	0.071	
118505	2.177	72	N/A	0.0	3301	2.177	6.749	1.959	0.283	0.653	
119957 (Former link no. 118506)	0.339 (Former link length0.558)	79	N/A	0.0	3301	0.339	1.051	0.305	0.044	0.102	
Inver to Mountcharles	Total 2.752					Total 2.752					
<p>Notes:</p> <p>Much of the route between Dunkineely and Donegal varies between Type 2 and Type 1 standards. For the section outlined above between just west of the junction with the R262 and the western end of the Mountcharles Bypass the alignment is below Type 2 standard and is therefore proposed for upgrade here. A similar but longer (4.9km) scheme 'N56 Mountcharles to Inver' is currently at Preliminary Design stage. This NRA scheme extends the upgrade to the Inver Bridge over the Eany Water. The section proposed for upgrade on this sheet is narrow, bendy and quite hilly. It does have an eastbound climbing lane for approx 0.575km but the vertical alignment and pavement condition is poor over this section and therefore it is included for upgrade.</p> <p>(other schemes at planning stage in this area include; the 'N56 Inver to Killybegs' scheme which is currently at Route Selection stage and travels online from Inver Bridge to Ardaghey and then continues offline from here until the Five Points Junction.)</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>3 No stream crossings.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p> <p>Split Link 118503 @ approx (184086, 378359) Resulting Link 119954</p> <p>Split Link 118506 @ approx (186715, 377969) Resulting Link 119957</p>						TOTAL:	8.531	2.477	0.358	0.826	
						Any special costs	0.000	0.000	0.000	0.000	
						Grand Total					12.192

PABS Appraisal Summary Table - N56f.2.T1							
Scheme Option: N56 Inver to Mountcharlies		Description: 2.752km upgrade to S2 Type 1 standard	Problems Identified: • One isolated section, circa 1km long located east of Inver where the lane widths are < 3m • Short intermittent sections with poor sightlines between Mountcharlies and Inver for both 85kph and 100kph design standards. • Short intermittent sections with poor sightlines between Inver and Dunkineely for the 100kph design standard. • Significant historical accident problem along the route.			Budget Cost (million) €2.19	
Objective	Sub-objective	Qualitative impacts		Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality			34 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.022 €0.000	No	3.7
	Noise and vibration			34 households affected in 2025	-€0.070	No	3.0
	Landscape and visual quality		Not assessed			Not assessed	4.0
	Biodiversity		The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No	4.0
	Cultural Heritage / archaeology		No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned section.			No	4.0
	Landuse		The proposed realignments will primarily be within Wetlands and Agricultural Areas.			No	4.0
	Water resources		The proposed realignments in this section of the N56 will not cross any water courses.			No	4.0
Safety	Accident reduction			0.5 accidents saved in 2025	€6.931		7.0
	Security		No additional facility for walkers and cyclists is to be provided.				4.0
Economy	Transport Efficiency and Effectiveness			47 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €6.141 €2.498 €0.000		5.6
					PVC Residual value €8.329 €0.735		
	Other economic impacts			Imperfect competition effects	€0.250		5.2
	Funding		Not assessed				4.0
Accessibility and Social Inclusion	Vulnerable groups		None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas			1 CLAR zones experience improved access to Hub/Gateway			4.9
Integration	Transport integration						
	Land-use integration						5.0
	Geographical integration						7.0
	Integration with other government policies						4.1
							4.1
				NPV	€8.132	Total	5.6
				BCR	1.98	Red Flagged	No


N56.f.2.T2			Name: Inver to Mountcharles				Type: S2 Type 2			
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
119954 (Former link no. 118503)	0.236 (Former link length1.384)	72	3	0.9	3305	0.234	0.402	0.087	0.018	0.071
118505	2.177	72	3	0.9	3305	2.157	3.713	0.802	0.163	0.653
119957 (Former link no. 118506)	0.339 (Former link length0.558)	79	1.1	0.3	3302	0.338	0.400	0.020	0.006	0.102
Inver to Mountcharles	Total 2.752					Total 2.729				
<p>Notes:</p> <p>Much of the route between Dunkineely and Donegal varies between Type 2 and Type 1 standards. For the section outlined above between just west of the junction with the R262 and the western end of the Mountcharles Bypass the alignment is below Type 2 standard and is therefore proposed for upgrade here. A similar but longer (4.9km) scheme 'N56 Mountcharles to Inver' is currently at Preliminary Design stage. This NRA scheme extends the upgrade to the Inver Bridge over the Eany Water. The section proposed for upgrade on this sheet is narrow, bendy and quite hilly. It does have an eastbound climbing lane for approx 0.575km but the vertical alignment and pavement condition is poor over this section and therefore it is included for upgrade.</p> <p>(other schemes at planning stage in this area include; the 'N56 Inver to Killybegs' scheme which is currently at Route Selection stage and travels online from Inver Bridge to Ardaghey and then continues offline from here until the Five Points Junction.)</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>3 No stream crossings.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p> <p>Split Link 118503 @ approx (184086, 378359) Resulting Link 119954</p> <p>Split Link 118506 @ approx (186715, 377969) Resulting Link 119957</p>						TOTAL:	4.516	0.908	0.186	0.826
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	6.436			

PABS Appraisal Summary Table - N56f.2.T2							
Scheme Option: N56 Inver to Mountcharlies		Description: 2.729km upgrade to S2 Type 2 standard	Problems Identified: • One isolated section, circa 1km long located east of Inver where the lane widths are < 3m • Short intermittent sections with poor sightlines between Mountcharlies and Inver for both 85kph and 100kph design standards. • Short intermittent sections with poor sightlines between Inver and Dunkineely for the 100kph design standard. • Significant historical accident problem along the route.				Budget Cost (million) €6.44
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score	
Environment	Air Quality		34 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.002 €0.000	No	4.0	
	Noise and vibration		34 households affected in 2025	-€0.022	No	3.4	
	Landscape and visual quality	Not assessed			Not assessed	4.0	
	Biodiversity	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No	4.0	
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned section.			No	4.0	
	Landuse	The proposed realignments will primarily be within Wetlands and Agricultural Areas.			No	4.0	
Safety	Water resources	The proposed realignments in this section of the N56 will not cross any water courses.			No	4.0	
	Accident reduction		0.2 accidents saved in 2025	€2.059		7.0	
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0	
	Transport Efficiency and Effectiveness		24 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €3.300 €1.297 €0.000		5.6	
				PVC Residual value €4.227 €0.325			
	Other economic impacts		Imperfect competition effects	€0.130		5.2	
Accessibility and Social Inclusion	Funding	Not assessed				4.0	
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0	
	Deprived geographic areas		1 CLAR zones experience improved access to Hub/Gateway			4.9	
	Transport integration						
Integration	Land-use integration					5.0	
	Geographical integration					7.0	
	Integration with other government policies					4.1	
						4.1	
			NPV	€2.860	Total	5.6	
			BCR	1.68	Red Flagged	No	



N56.r.1.T2			Name: Creeslough Relief Road					Type: S2 Type 2		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
119965	2.103	N/A	N/A	0.0	3303	2.103	4.837	1.472	0.273	0.631
Creeslough Relief Road						Total 2.103				
<b>Notes:</b> This route passes to the west of Creeslough and bypasses a number of local road junctions within the town. There are no environmentally designated areas in the vicinity in this route. 2 No. stream crossing. 3 No. junctions with local roads. High Traffic Good Subgrade – Maintenance Category 2						TOTAL:	4.837	1.472	0.273	0.631
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	7.213			

PABS Appraisal Summary Table - N56r.1.T2						
Scheme Option: N56 Creeslough Relief Road		Description: 2.103km upgrade to S2 Type 2 standard		Problems identified:		Budget Cost (million) €7.21
Objective	Sub-objective	Qualitative impacts		Quantitative assessment	Monetised (million 30 yrs)	Red Flag
Environment	Air Quality			0 households affected in 2025 0 tonnes of carbon saved in 2025 0 households affected in 2025	€0.000 €0.000 €0.000	No No Not assessed
	Noise and vibration Landscape and visual quality	Not assessed				4.0 4.0
	Biodiversity	The proposed realignment will impact directly on Sheephaven SAC (001190) and pNHA.				1.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and no sites are within 100m of the realignment.				4.0
	Landuse	The proposed realignments will be within a combination of Agricultural Areas, Wetlands and on existing Artificial Surfaces.				4.0
	Water resources	The proposed realignments will not cross any water courses.				4.0
Safety	Accident reduction Security			0.7 accidents saved in 2025	€2.149	No 7.0 4.0
Economy	Transport Efficiency and Effectiveness			47 vehicle-hours per day in travel time saved in 2025	Non-work Work €2.475 €0.000	7.0
					PVC Residual €4.683 €0.427	
	Other economic impacts			Imperfect competition effects	€0.247	6.1
	Funding	Not assessed				4.0
Accessibility and Social Inclusion	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas			2 CLAR zones experience improved access to Hub/Gateway		7.0
Integration	Transport integration					5.0
	Land-use integration					7.0
	Geographical integration					4.2
	Integration with other government policies					4.0
				NPV €8.670	Total	6.2
				BCR 2.85	Red Flagged	Yes

N56.r.2.T2			Name: Dunglow Relief Road				Type: S2 Type 2			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
119968	1.444	N/A	N/A	0.0	3303	1.444	3.321	1.011	0.188	0.433
Dunglow Relief Road						Total 1.444				
<b>Notes:</b> This route passes to the east of Dunglow and follows the shore of Dunglow Lough. This route bypasses a number of congested junctions within Dunglow. There are no environmentally designated areas in the vicinity in this route. 1 No. Dunglow River Crossing (add const cost) Possible poor subgrade through this area, it looks like peat from the aerial photography and therefore additional costs have been added. Low Traffic Good Subgrade – Maintenance Category 1						TOTAL:	3.321	1.011	0.188	0.433
						Any special costs	0.400	0.000	0.000	0.000
						Grand Total	5.353			



PABS Appraisal Summary Table - N56r.2.T2									
Scheme Option: N56 Dunglow Relief Road		Description: 1.444km upgrade to S2 Type 2 standard		Problems Identified:			Budget Cost (million) €5.35		
Objective	Sub-objective	Qualitative impacts		Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score		
Environment	Air Quality			0 households affected in 2025	€0.000	No	4.0		
	Noise and vibration			0 tonnes of carbon saved in 2025	€0.000	No	4.0		
	Landscape and visual quality			0 households affected in 2025		Not assessed	4.0		
	Biodiversity	Not assessed				Yes	2.5		
	Cultural Heritage / archaeology	The proposed realignment may impact indirectly on Cloghernagore Bog and Glenveagh National Park SAC (002047) and pNHA.				No	4.0		
	Landuse	No sites will be directly impacted by the proposed realignments and no sites are within 100m of the realignment.				No	4.0		
Safety	Water resources	The proposed realignments will be within a combination of Wetlands and Agricultural Areas.				No	3.0		
	Accident reduction	The proposed realignments in this section of the N56 will cross the Dungloe River.		0.3 accidents saved in 2025	€1.030		6.1		
Economy	Security	No additional facility for walkers and cyclists is to be provided.					4.0		
	Transport Efficiency and Effectiveness			53 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €12.490 €4.360 €0.000		7.0		
					PVC Residual value €3.846 €0.309				
	Other economic impacts	Not assessed		Imperfect competition effects	€0.436		7.0		
Accessibility and Social Inclusion	Funding						4.0		
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.					2.6		
Integration	Deprived geographic areas			0 CLAR zones experience improved access to Hub/Gateway					
	Transport integration						5.0		
	Land-use integration						6.7		
	Geographical integration						4.0		
	Integration with other government policies						4.0		
				NPV	€14.779	Total	5.8		
				BCR	4.84	Red Flagged	Yes		

N59.a.1.T2			Name: Ballysadare to Dromore West							Type: S2 Type 2		
Scheme Definition			Modelled as		OT Input		Scheme Cost €m					
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S		
118524	3.352	69	4.3	1.9	3306	3.288	6.269	1.553	0.309	1.0056		
118526	4.084	75.5	2.1	0.5	3304	4.064	5.995	0.934	0.200	1.2252		
118525	2.422	78	1.1	0.0	3303	2.422	3.071	0.267	0.064	0.7266		
118527	1.032	78	1.1	0.0	3303	1.032	1.309	0.114	0.027	0.3096		
118528	6.816	75.5	2.3	0.5	3304	6.782	10.005	1.558	0.334	2.0448		
118530	5.968	72.5	3.5	1.5	3304	5.878	9.994	2.090	0.427	1.7904		
Ballysadare to Dromore West	Total 23.674					Total 23.466						
<b>Notes:</b> A number of local upgrades have already taken place along this route, namely outside Ballysadare; either side of Beltra; near Carrowgilpatrick; and at the approach to Templeboy. It is thought that these upgrades are to Type 2 Standard or better and therefore the costs have been amended to make allowance for these already upgraded sections. (upgraded sections estimated to be 6.686km total length) Ballysadare Bay is listed as SPA, NHA and SAC and an additional forest section of this environmentally sensitive area exists immediately east of Beltra however this upgrade should not impose on it. This route is bendy and hilly in sections and overtaking is limited to the locations where upgrades have already taken place. Special costs added for where existing higher quality sections have been removed (to adjust for effective lowering of the quality score) 1 No River Carrowcor River crossing 7 No. stream crossings High Traffic Good Subgrade – Maintenance Category 2 IRI 2.6 to 3.5 – Maintenance Bracket 2						TOTAL:	36.642	6.515	1.360	7.102		
						Any special costs	-15.000	0.000	0.000	0.000		
						Grand Total	36.619					

PABS Appraisal Summary Table - N59a.1.T2						
Scheme Option: N59 Ballysadare to Dromore West		Description: 23.466km upgrade to S2 Type 2 standard	Problems Identified:			
			<ul style="list-style-type: none"> <li>• Lane width &lt; 3m for 48% of the route corridor and &lt;3.5m for 84% of the corridor</li> <li>• Local areas of poor visibility west of Ballysadare, ease if Templeboy and also east of Ballina</li> <li>• Accident clusters which appear to be associated with these areas of poor visibility</li> <li>• Pavement condition is poor in the vicinity of Templeboy.</li> </ul>			
			Budget Cost (million) €36.62			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		160 households affected in 2025	-€0.026	No	3.9
	Noise and vibration		1 tonnes of carbon saved in 2025	€0.000	No	3.0
	Landscape and visual quality	Not assessed	160 households affected in 2025	-€0.200	Not assessed	4.0
	Biodiversity	Realignment of road has potential for indirect impacts on Ballysadare SPA (004129) and Ballysadare SAC (000622) and pNHA, and Slieveewood Bog NHA (001902).			Yes	2.0
	Cultural Heritage / archaeology	Realignment will come closer to a number of sites already within 100m of the route including fourteen Ringforts, a Bullaun Stone, four Enclosures, a Burial, a Barrow, a Cist, a Church, a Hut Site and a Cross.			No	3.0
Landuse		The proposed realignments will be primarily within Agricultural Areas but also some isolated Forestry and Semi-Natural Areas.			No	4.0
	Water resources	The proposed realignments in this section of the N59 will cross the Dunmorran River, the Doonfin River, the Doonbeakin River and Lugdoon Stream.			No	3.0
	Accident reduction		0.9 accidents saved in 2025	€10.925		7.0
Safety	Security	No additional facility for walkers and cyclists is to be provided.				4.0
Economy	Transport Efficiency and Effectiveness		169 vehicle-hours per day in travel time saved in 2025	Non-work Work €3.889 €12.346		5.3
				Active travel €0.000		
				PVC €23.653 Residual value €1.901		
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	€1.235		6.1
	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
Integration	Deprived geographic areas		2 CLAR zones experience improved access to Hub/Gateway			4.1
	Transport integration					5.0
	Land-use integration					6.7
Integration	Geographical integration					4.4
	Integration with other government policies					4.1
				NPV	€11.416	Total
				BCR	1.48	Red Flagged
						5.4
						Yes

N59.a.1.T3


Name: Ballysadare to Templeboy

Type: S2 Type 3

Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
118524	3.352	69	1.6	0.2	3308	3.345	3.831	0.516	0.149	1.0056	
118526	4.084	75.5	0.6	0.0	3305	4.084	3.759	0.158	0.054	1.2252	
118525	2.422	78	0.3	0.0	3304	2.422	1.971	0.000	0.000	0.7266	
118527	1.032	78	0.3	0.0	3304	1.032	0.840	0.000	0.000	0.3096	
118528	6.816	75.5	0.6	0.0	3305	6.816	6.274	0.264	0.090	2.0448	
118530	5.968	72.5	1.1	0.1	3307	5.962	6.165	0.576	0.173	1.7904	
Ballysadare to Templeboy	Total 23.674					Total 23.661					
<div>Notes:</div> <div>A number of local upgrades have already taken place along this route, namely outside Ballysadare; either side of Beltra; near Carrowgilpatrick; and at the approach to Templeboy. It is thought that these upgrades are to Type 2 Standard or better and therefore the costs have been amended to make allowance for these already upgraded sections. (upgraded sections estimated to be 10.126km total length)</div> <div>Ballysadare Bay is listed as SPA, NHA and SAC and an additional forest section of this environmentally sensitive area exists immediately east of Beltra however this upgrade should not impose on it.</div> <div>This route is bendy and hilly in sections and overtaking is limited to the locations where upgrades have already taken place.</div> <div>Special costs added for where existing higher quality sections have been removed (to adjust for effective lowering of the quality score)</div> <div>1 No River Carrowcor River crossing</div> <div>7 No. stream crossings</div> <div>High Traffic Good Subgrade – Maintenance Category 2</div> <div>IRI 2.6 to 3.5 – Maintenance Bracket 2</div>							TOTAL:	22.841	1.514	0.465	7.102
							Any special costs	-14.000	0.000	0.000	0.000
							Grand Total	17.922			




PABS Appraisal Summary Table - N59a.1.T3						
Scheme Option: N59 Ballysadare to Templeboy	Description: 23.661km upgrade to S2 Type 3 standard	Problems Identified:	Budget Cost (million) €17.92	Problems Identified:		
				<ul style="list-style-type: none"> <li>• Lane width &lt; 3m for 48% of the route corridor and &lt;3.5m for 84% of the corridor</li> <li>• Local areas of poor visibility west of Ballysadare, east of Templeboy and also east of Ballina</li> <li>• Accident clusters which appear to be associated with these areas of poor visibility</li> <li>• Pavement condition is poor in the vicinity of Templeboy.</li> </ul>		
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		160 households affected in 2025	-€0.020	No	3.8
	Noise and vibration		0 tonnes of carbon saved in 2025	€0.000	No	4.9
	Landscape and visual quality	Not assessed	160 households affected in 2025	€0.075	Not assessed	4.0
	Biodiversity	Realignment of road has potential for indirect impacts on Ballysadare SPA (004129), Ballysadare SAC (000622) and pHNA, and Slieveewood Bog NHA (001902).			Yes	2.0
	Cultural Heritage / archaeology	Realignment will come closer to a number of sites already within 100m of the route including twelve Ringforts, a Bullaun Stone, four Enclosures, two Earthworks and a Ritual Site – Holy Well.			No	3.0
Landuse		The proposed realignments will be primarily within Agricultural Areas, but also some isolated Forestry and Semi-Natural Areas.			No	4.0
	Water resources	The proposed realignments in this section of the N59 will cross the Dummoran River and the Doonfin River.			No	3.0
	Accident reduction		0.3 accidents saved in 2025	€2.106		5.6
Safety	Security	No additional facility for walkers and cyclists is to be provided.				4.0
Economy	Transport Efficiency and Effectiveness		65 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €3.348 €4.613 €0.000		5.1
				PVC Residual value €10.431 €0.594		
	Other economic impacts	Imperfect competition effects		€0.461		5.8
Accessibility and Social Inclusion	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		2 CLAR zones experience improved access to Hub/Gateway			4.1
Integration	Transport integration					5.0
	Land-use integration					6.7
	Geographical integration					4.4
Integration	Integration with other government policies					4.1
				NPV	€0.746	Total
				BCR	1.07	Red Flagged
						5.2
						Yes

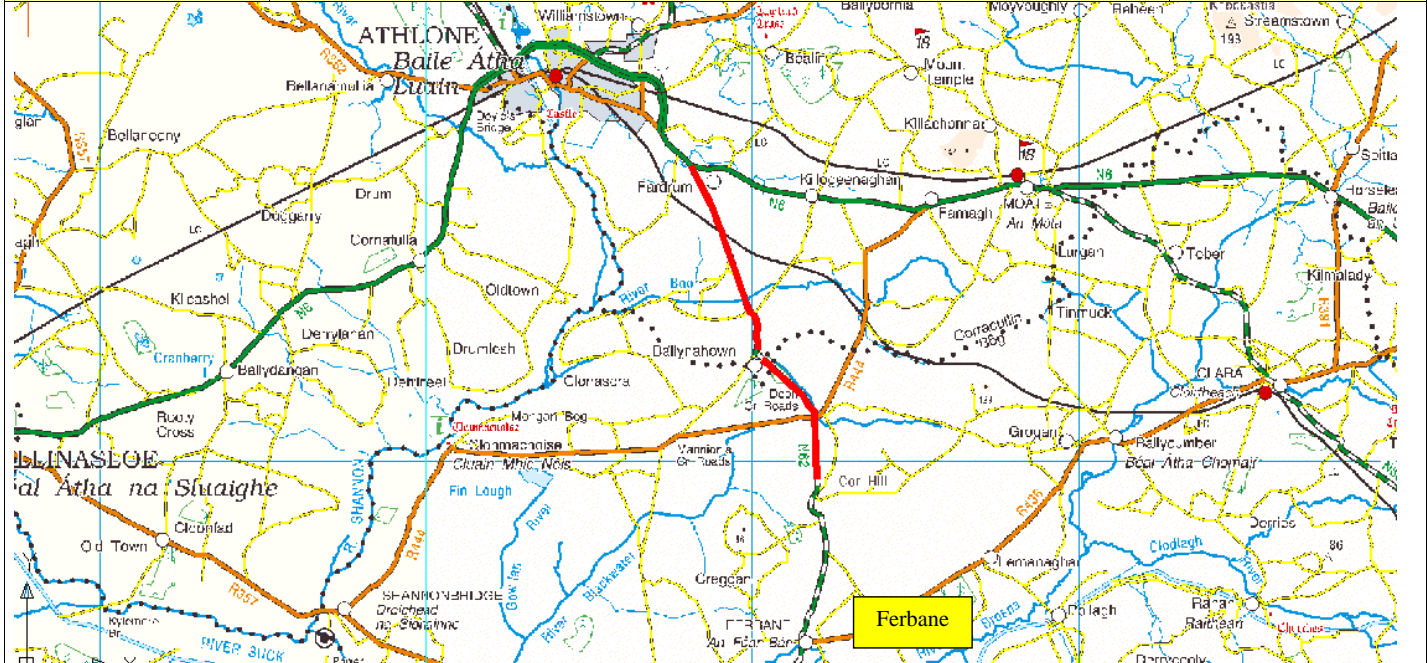
N59.a.2.T2			Name: Dromore West to Ballina					Type: S2 Type 2			
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
118534	2.454	76	2	0.2	3303	2.449	3.509	0.506	0.110	0.7362	
118536	3.502	77.5	1.5	0.0	3302	3.502	4.588	0.473	0.109	1.0506	
118535	1.418	73.5	2.8	0.7	3304	1.408	2.282	0.443	0.092	0.4254	
118538	1.686	73.5	2.8	0.7	3304	1.674	2.714	0.526	0.109	0.5058	
118537	2.227	77.5	1.3	0.0	3303	2.227	2.917	0.301	0.069	0.6681	
98416	6.650	77.5	1.3	0.0	3303	6.650	8.712	0.898	0.207	1.995	
98418	2.700	77.5	1.3	0.0	3303	2.700	3.537	0.365	0.084	0.81	
Dromore West to Ballina	Total 20.637					Total 20.637					
<b>Notes:</b> This route includes very substantial straight sections with good overtaking opportunities, though For the straight sections between Camcuill and Culleens; Meenashammer and Corbally; Corbally South and Quignalegan an upgrade would involve the introduction of a hardstrip; the existing road reservation should be able to accommodate this. (noted that the model reduces land costs for high scoring routes, therefore no need to reduce costs further) No environmentally designated areas in the vicinity of this route. It is thought that the approach to Ballina (0.853km approx) is already to Type 2 standard therefore a cost has been subtracted for this section which is already upgraded. 1 No Easky River Crossing (narrow stone bridge) 1 No Owenbeg River Crossing 1 No Owenykeevan River Crossing 1 No Culleens River Crossing (minor) – existing bridge skewed to the alignment 6 No Stream crossings Low Traffic Good Subgrade – Maintenance Category 1 IRI 2.6 to 3.5 – Maintenance Bracket 2						TOTAL:	28.259	3.512	0.780	6.191	
						Any special costs	-2.000	0.000	0.000	0.000	
						Grand Total	36.742				

PABS Appraisal Summary Table - N59a.2.T2						
Scheme Option: N59 Dromore West to Ballina		Description: 20.61km upgrade to S2 Type 2 standard		Problems Identified: • Lane width < 3m for 48% of the route corridor and <3.5m for 84% of the corridor • Local areas of poor visibility west of Ballysadare, ease if Templeboy and also east of Ballina • Accident clusters which appear to be associated with these areas of poor visibility • Pavement condition is poor in the vicinity of Templeboy.		Budget Cost (million) €6.74
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		101 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.024 €0.000	No	3.9
	Noise and vibration Landscape and visual quality		101 households affected in 2025	-€0.045	No	3.8
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	Realignment of road has potential for indirect impacts on Killala Bay Moy Estuary SAC (000458) and pNHA. Realignment will come closer to a number of sites already within 100m of the route including two Ringforts, Fulacht Fia, a Hut Site, a Fort, a Megalithic Structure and a Cross.			Yes	2.5
	Landuse	The proposed realignments will be primarily within Agricultural Areas with some small sections of Wetland Area, but also some isolated areas of Forestry and Semi-Natural Areas.			No	4.0
	Water resources	The proposed realignments in this section of the N59 will cross the Easkey river (which is also a pNHA (001665)), the Finned River, the Leafony River and the Bellawaddy River.			No	3.0
Safety	Accident reduction Security	No additional facility for walkers and cyclists is to be provided.	0.4 accidents saved in 2025	€8.748		6.9 4.0
Economy	Transport Efficiency and Effectiveness		68 vehicle-hours per day in travel time saved in 2025	Non-work Work €3.467 €5.065 €0.000 Active travel PVC €23.788 Residual €1.606 value €0.506		4.5 4.6
Accessibility and Social Inclusion	Other economic impacts Funding	Not assessed	Imperfect competition effects			4.9 4.0
	Vulnerable groups Deprived geographic areas	Some of the route corridor is within 4km of a settlement of 1,500 people or more.	3 CLAR zones experience improved access to Hub/Gateway			4.0 4.1
	Transport integration Land-use integration Geographical integration					5.0 6.7 4.4
	Integration with other government policies					4.1
				NPV	Total	5.1
				BCR	0.81	Yes



N59.a.2.T3			Name: Dromore West to Ballina					Type: S2 Type 3		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118534	2.454	76	0.6	0.0	3304	2.454	2.209	0.070	0.025	0.7362
118536	3.502	77.5	0.5	0.0	3303	3.502	2.928	0.000	0.005	1.0506
118535	1.418	73.5	0.8	0.0	3306	1.418	1.414	0.111	0.034	0.4254
118538	1.686	73.5	0.8	0.0	3306	1.686	1.682	0.132	0.040	0.5058
118537	2.227	77.5	0.3	0.0	No Change	2.227	1.862	0.000	0.003	0.6681
98416	6.650	77.5	0.3	0.0	No Change	6.650	5.561	0.000	0.009	1.995
98418	2.700	77.5	0.3	0.0	No Change	2.700	2.258	0.000	0.004	0.81
Dromore West to Ballina	Total 20.637					Total 20.637				
<b>Notes:</b> This route includes very substantial straight sections with good overtaking opportunities, though For the straight sections between Camcuill and Culleens; Meenashammer and Corbally; Corbally South and Quignalegan an upgrade would involve the introduction of a hardstrip; the existing road reservation should be able to accommodate this. (noted that the model reduces land costs for high scoring routes, therefore no need to reduce costs further) No environmentally designated areas in the vicinity of this route. It is thought that the approach to Ballina (0.853km approx) is already to Type 2 standard therefore a cost has been subtracted for this section which is already upgraded. 1 No Easky River Crossing (narrow stone bridge) 1 No Owenbeg River Crossing 1 No Owenykeevan River Crossing 1 No Culleens River Crossing (minor) – existing bridge skewed to the alignment 6 No Stream crossings Low Traffic Good Subgrade – Maintenance Category 1 IRI 2.6 to 3.5 – Maintenance Bracket 2						TOTAL:	17.914	0.312	0.120	6.191
						Any special costs	-1.300	0.000	0.000	0.000
						Grand Total	23.237			

PABS Appraisal Summary Table - N59a.2.T3						
Scheme Option: N59 Dromore West to Ballina		Description: 20.637km upgrade to S2 Type 3 standard		Problems Identified: • Lane width < 3m for 48% of the route corridor and <3.5m for 84% of the corridor • Local areas of poor visibility west of Ballysadare, ease if Templeboy and also east of Ballina • Accident clusters which appear to be associated with these areas of poor visibility • Pavement condition is poor in the vicinity of Templeboy.		Budget Cost (million) €23.24
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		101 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.005 €0.000	No	4.0
	Noise and vibration Landscape and visual quality		101 households affected in 2025	-€0.024	No	3.8
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	Realignment of road has potential for indirect impacts on Killala Bay Moy Estuary SAC (000458) and pNHA. Realignment will come closer to a number of sites already within 100m of the route including two Ringforts, Fulacht Fia, a Hut Site, a Fort, a Megalithic Structure and a Cross.			Yes	2.5
	Landuse	The proposed realignments will be primarily within Agricultural Areas with some small sections of Wetland Area, but also some isolated areas of Forestry and Semi-Natural Areas.			No	3.0
	Water resources	The proposed realignments in this section of the N59 will cross the Easkey river (which is also a pNHA (001665)), the Finned River, the Leafony River and the Bellawaddy River.			No	3.0
Safety	Accident reduction Security		0.1 accidents saved in 2025	€2.127		5.2
Economy	Transport Efficiency and Effectiveness	No additional facility for walkers and cyclists is to be provided.	19 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €0.965 €1.431 €0.000		4.3
	Other economic impacts			PVC Residual value €14.263 €0.712		
	Funding	Not assessed	Imperfect competition effects	€0.143		4.4
Accessibility and Social Inclusion	Vulnerable groups Deprived geographic areas	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Transport integration Land-use integration Geographical integration Integration with other government policies		2 CLAR zones experience improved access to Hub/Gateway			4.0
Integration						5.0
						6.7
						4.4
						4.1
				NPV	-€8.915	Total
				BCR	0.37	Red Flagged
						4.8
						Yes

N62.a.1.T2			Name: Athlone (N6) to Ferbane				Type: S2 Type 2			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118691	6.036	75.5	2.5	0.3	3303	6.016	8.860	1.380	0.295	1.811
Break at Ballynahown										
118695	2.174	77.5	2.5	0.3	3303	2.167	2.848	0.294	0.068	0.652
118694	0.295	70 assumed	N/A	0.0	3303	0.295	0.537	0.128	0.026	0.089
118696	0.127	70 assumed	N/A	0.0	3303	0.127	0.231	0.055	0.011	0.038
118699 (Improvement to part of link)	1.709 used (Full length of link 2.026)	70 assumed (Former link score 77.5)	1.5	0.1	3303	1.707	3.109	0.742	0.148	0.513
Athlone (N6) to Ferbane	Total 10.341					Total 10.312				
<p>Notes:</p> <p>From the N6 to until the Boor River crossing the route is straight but it is narrow and the vertical alignment hampers the overtaking significantly. North of Ballynahown the route is quite bendy. From Ballynahown to Doon Cross Roads there is overtaking and this section appears to have been recently resurfaced. The widths are below Type 3 standard however and it is therefore included for upgrade. There is a speed limit restriction at Doon Cross Roads but it is proposed to carry this upgrade through this speed restricted area. From Doon to south of Glebe route is straight but narrow and the overtaking is hampered by the vertical alignment. This section is followed by a section that is to between Type 2 and Type 1 standard and then by a section with a climbing lane on the northbound carriageway. This is then followed by a section to Type 2 standard from Corbane to Ferbane. It is not proposed to upgrade the section from south of Glebe to Ferbane. It is noted however that local widening to T2 standards for the initial 800m from Ferbane should be considered separately from this route option.</p> <p>There is a combined NHA and SAC to the west of the route north of Ferbane but there are no environmentally designated areas in the vicinity of the route proposed for upgrade.</p> <p>1 No. Boor River Crossing. The existing bridge is wide enough to accommodate this upgrade.</p> <p>1 No. Railway Crossing. Existing bridge is humped and has bad bends either side. Bridge to be replaced as part of this upgrade. (add cost).</p> <p>2 No stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p>						TOTAL:	15.585	2.599	0.548	3.102
						Any special costs	0.500	0.000	0.000	0.000
						Grand Total	22.334			

PABS Appraisal Summary Table - N62a.1.T2						
Scheme Option: N62 Athlone (N6) to Ferbane		Description: 10.312km upgrade to S2 Type 2 standard	Problems Identified: • Lane widths are less than 3m wide for 74% of the corridor and are less than 3.5m for 89% of the corridor. • On corridor 62a, north of Ballynahown for a distance of approximately 4km the visibility is in the 20 to 120m range. • On corridor 62a, north and south of Ferbane for a distance of approximately 2.5km (5km in total) the visibility is primarily in the 20 to 120m range. • On corridor 62a, approximately 7km south of Coughlan for a further 5km the visibility is in the 20 to 120 range for a large proportion. • There is a small cluster of serious accidents immediately north and south of Ferbane and this corresponds to an area of poor visibility. • Approximately 7km south of Coughlan for 3km there is also a gathering of 1 Fatal and 3 serious accidents and once again this stretch corresponds to an area of poor visibility.			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		44 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.023 €0.000	No	3.8
	Noise and vibration Landscape and visual quality	Not assessed	44 households affected in 2025	-€0.061	No	3.5
	Biodiversity	The proposed realignment may impact indirectly on Crosswood Bog SAC (002337) & pNHA (000678), and Doon Esker Wood pNHA (001830). Directly crosses the River Boor which discharges to the River Shannon Callows SAC & pNHA (000216).			Not assessed	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including three NIAH Structures, an Enclosure, two Castles – Tower Houses, two Bawns and a Sheela-Na-Gig.			Yes	2.5
	Landuse	The proposed realignments will primarily be within Agricultural Areas with a section through a Forest Semi Natural Area.			No	3.0
Safety	Water resources	Directly crosses the River Boor which discharges to the River Shannon Callows SAC & pNHA (000216).			Yes	3.0
	Accident reduction	No additional facility for walkers and cyclists is to be provided.	0.6 accidents saved in 2025	€8.167		7.0
	Security					4.0
Economy	Transport Efficiency and Effectiveness		111 vehicle-hours per day in travel time saved in 2025	Non-work Work €6.080 €6.459 €0.000		5.3
Accessibility and Social Inclusion	Other economic impacts			PVC Residual value €14.319 €1.055		
	Funding	Not assessed	Imperfect competition effects	€0.646		5.8
	Vulnerable groups	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		3 CLAR zones experience improved access to Hub/Gateway			4.7
	Transport integration					
Integration	Land-use integration					6.0
	Geographical integration					4.6
	Integration with other government policies					5.9
						6.3
				NPV	€8.003	Total
				BCR	1.56	Red Flagged
						5.1
						Yes

**Problems Identified:**

- Lane widths are less than 3m wide for 74% of the corridor and are less than 3.5m for 89% of the corridor.
- On corridor 62a, north of Ballynahown for a distance of approximately 4km the visibility is in the 20 to 120m range.
- On corridor 62a, north and south of Ferbane for a distance of approximately 2.5km (5km in total) the visibility is primarily in the 20 to 120m range.
- On corridor 62a, approximately 7km south of Coughlan for a further 5km the visibility is in the 20 to 120 range for a large proportion.
- There is a small cluster of serious accidents immediately north and south of Ferbane and this corresponds to an area of poor visibility.
- Approximately 7km south of Coughlan for 3km there is also a gathering of 1 Fatal and 3 serious accidents and once again this stretch corresponds to an area of poor visibility.



N62.a.1.T3			Name: Athlone (N6) to Ferbane				Type: S2 Type 3				
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
118691	6.036	75.5	2.5	0.3	3303	6.016	5.556	0.234	0.080	1.811	
Break at Ballynahown											
118695	2.174	77.5	2.5	0.3	3303	2.167	1.818	0.000	0.003	0.652	
118694	0.295	70 assumed	N/A	0.0	3303	0.295	0.329	0.041	0.012	0.089	
118696	0.127	70 assumed	N/A	0.0	3303	0.127	0.141	0.018	0.005	0.038	
118699 (Improvement to part of link)	1.709 used (Full length of link2.026)	70 assumed (Former link score 77.5)	1.5	0.1	3303	1.707	1.904	0.237	0.069	0.513	
Athlone (N6) to Ferbane	Total 10.341					Total 10.312					
<p>Notes:</p> <p>From the N6 to until the Boor River crossing the route is straight but it is narrow and the vertical alignment hampers the overtaking significantly. North of Ballynahown the route is quite bendy. From Ballynahown to Doon Cross Roads there is overtaking and this section appears to have been recently resurfaced. The widths are below Type 3 standard however and it is therefore included for upgrade here. There is a speed limit restriction at Doon Cross Roads but it is proposed to carry this upgrade through this speed restricted area. From Doon Cross Roads to south of Glebe route is straight but narrow and the overtaking is hampered by the vertical alignment. This section is followed by a section that is to between Type 2 and Type 1 standard and then by a section with a climbing lane on the northbound carriageway. This is then followed by a section to Type 2 standard from Corbane to Ferbane. It is not proposed to upgrade the sections from south of Glebe to Ferbane. It is noted however that local widening to T2 standards for the initial 800m from Ferbane should be considered separately from this route option.</p> <p>There is a combined NHA and SAC to the west of the route north of Ferbane but there are no environmentally designated areas in the vicinity of the route proposed for upgrade.</p> <p>1 No. Boor River Crossing. The existing bridge is wide enough to accommodate this upgrade.</p> <p>1 No. Railway Crossing. Existing bridge is humped and has bad bends either side. Bridge to be replaced as part of this upgrade. (add cost).</p> <p>2 No stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p>						TOTAL:	9.748	0.529	0.168	3.102	
						Any special costs	0.400	0.000	0.000	0.000	
						Grand Total					13.947

PABS Appraisal Summary Table - N62a.1.T3						
Scheme Option: N62 Athlone (N6) to Ferbane	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Score	
					Red Flag	Score
<b>Description:</b> 10.341km upgrade to S2 Type 3 standard	Environment	Air Quality	44 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.001 €0.000	No	4.0
		Noise and vibration Landscape and visual quality	44 households affected in 2025	-€0.059	No	3.2
		Biodiversity	Not assessed		Not assessed	4.0
		Cultural Heritage / archaeology	The proposed realignment may impact indirectly on Crosswood Bog SAC (002337) & pNHA (000678), and Doon Esker Wood pNHA (001830). Directly crosses the River Boor which discharges to the River Shannon Callows SAC & pNHA (000216).		Yes	2.5
	Safety	Landuse	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including three NIAH Structures, an Enclosure, two Castles – Tower Houses, two Bawns and a Sheela-Na-Gig.		No	3.0
		Water resources	The proposed realignments will primarily be within Agricultural Areas with a section through a Forest Semi Natural Area.		No	4.0
		Accident reduction	Directly crosses the River Boor which discharges to the River Shannon Callows SAC & pNHA (000216).		Yes	3.0
	Economy	Security	No additional facility for walkers and cyclists is to be provided.	€4.051		7.0
		Transport Efficiency and Effectiveness	70 vehicle-hours per day in travel time saved in 2025	Non-work Work €3.754 €4.029		4.0
	Accessibility and Social Inclusion	Other economic impacts	Imperfect competition effects	Active travel €0.000		5.4
		Funding		PVC €8.430		
		Vulnerable groups		Residual value €0.489		
		Deprived geographic areas		€0.403		5.9
Integration	Transport integration	Land-use integration	3 CLAR zones experience improved access to Hub/Gateway			4.0
		Geographical integration				4.7
		Integration with other government policies				
						6.0
						4.6
						5.9
						6.3
				NPV	€4,235	<b>Total</b>
				BCR	1.50	<b>Red Flagged</b>
						<b>5.1</b>
						<b>Yes</b>

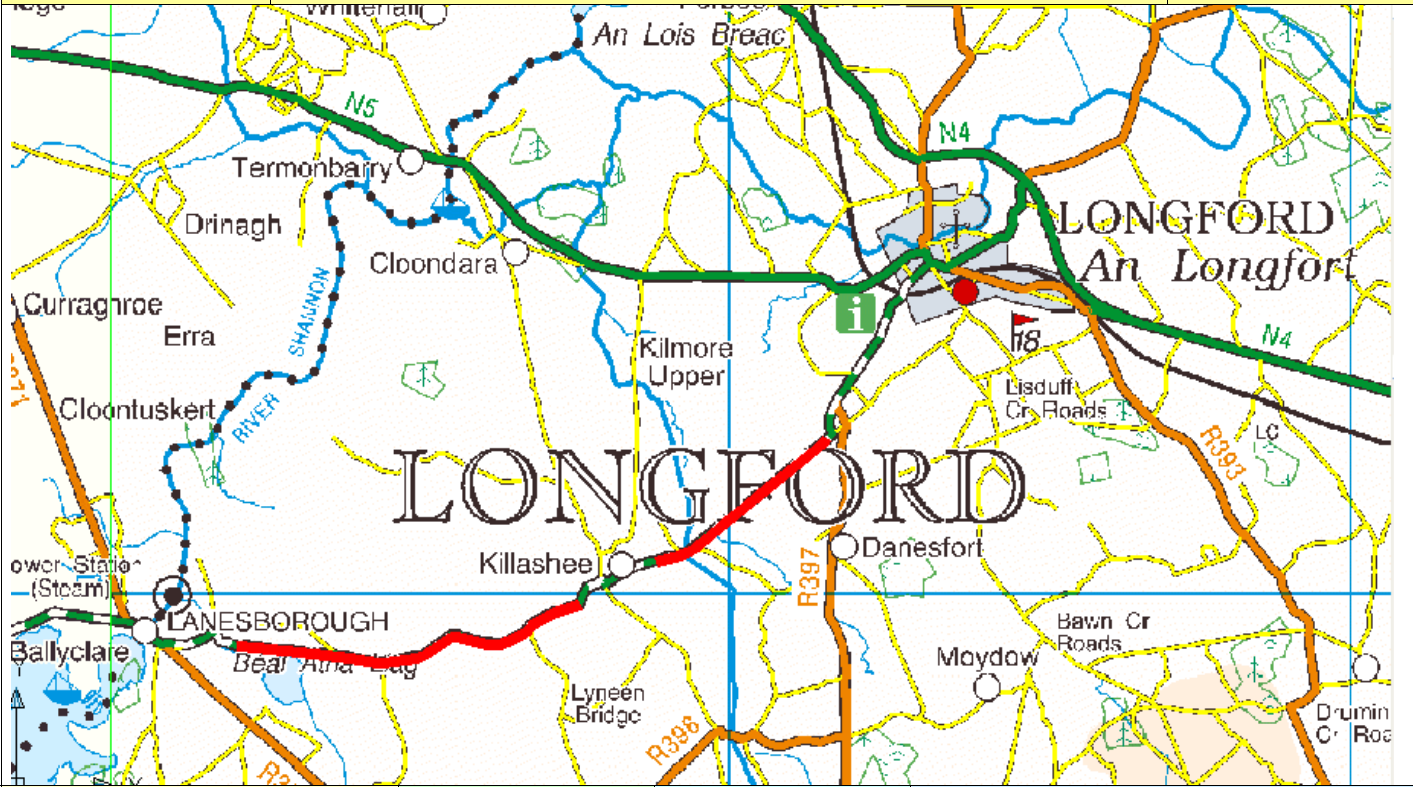
**Problems Identified:**

- Lane widths are less than 3m wide for 74% of the corridor and are less than 3.5m for 89% of the corridor.
- On corridor 62a, north of Ballynahown for a distance of approximately 4km the visibility is in the 20 to 120m range.
- On corridor 62a, north and south of Ferbane for a distance of approximately 2.5km (5km in total) the visibility is primarily in the 20 to 120m range.
- On corridor 62a, approximately 7km south of Coughlan for a further 5km the visibility is in the 20 to 120 range for a large proportion.
- There is a small cluster of serious accidents immediately north and south of Ferbane and this corresponds to an area of poor visibility.
- Approximately 7km south of Coughlan for 3km there is also a gathering of 1 Fatal and 3 serious accidents and once again this stretch corresponds to an area of poor visibility.

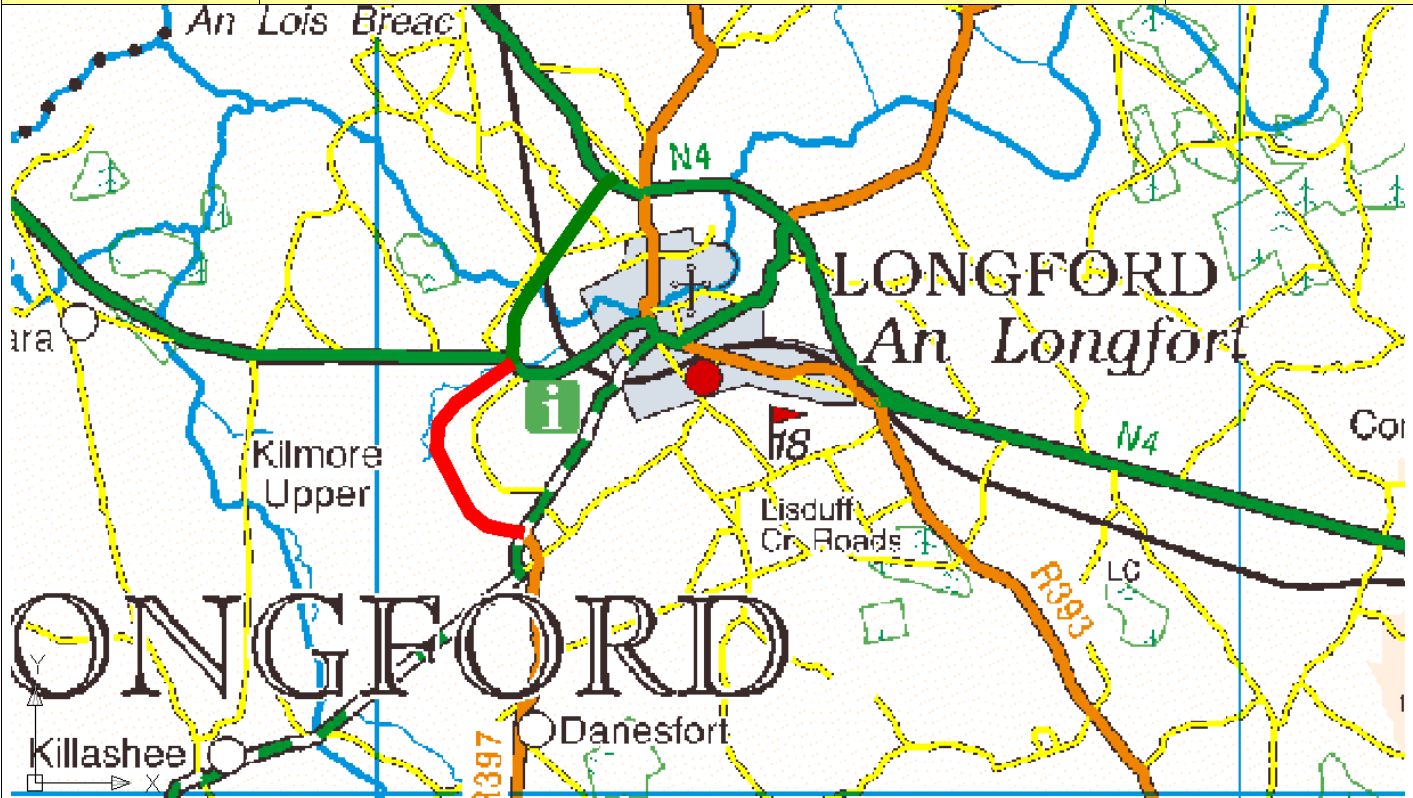


N63.a.1.T1			Name: Longford to Lanesborough				Type: S2 Type 1				
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
120029 (Former link no. 118730)	2.734 (Former link length 3.282)	77	N/A	0.0	3301	2.734	8.475	2.461	0.355	0.8202	
118733	0.680	73.5	N/A	0.0	3301	0.680	2.108	0.612	0.088	0.204	
Break at Killashee											
118737	3.579	73.5	N/A	0.0	3301	3.579	6.263	1.790	0.465	1.0737	
118736	2.258	78	N/A	0.0	3301	2.258	3.952	1.129	0.294	0.6774	
Longford to Lanesborough	Total 9.251					Total 9.251					
<p>Notes:</p> <p>This route is relatively wide coming out of Longford. The first approximately 1.13km is to Type 1 or Type 2 standard and it is therefore not proposed to upgrade this section. The route then narrows down somewhat and there is a short overtaking section at Cloonturk. From the aerial photography there is a boggy area visible at this location. There are a number of bends before Aghnaskea Bridge. This scheme is then broken at Kilashee but may be combined with the relief road option for Kilashee also. From Kilashee to Lanesborough the route is generally bendy and narrow with some short overtaking opportunities and one decent overtaking opportunity at the straight section at the approach to Lanesborough. There is a 650m long widened section between T1 and T2 standards at approx 3.6km from Lanesborough.</p> <p>There is an NHA to the south of the route at the approach to Lanesborough (at Derryloughbanrow).</p> <p>Possible boggy area visible on aerial photography for approx 4.7km of the route.</p> <p>1 No Royal Canal crossing at Aghnaskea Bridge, narrow stone bridge (add const cost)</p> <p>Stone retaining walls between Aghnaskea Bridge and Killashee</p> <p>1 No narrow stone bridge (will need to be widened / replaced)</p> <p>1 No at grade railway crossing.</p> <p>3 no. stream crossings</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 2.5 to 3.5 – Maintenance Bracket 2</p> <p>Solit link 118730 @ 211,540   272,485 . Remainder to be 0.548.</p>							TOTAL:	28.678	8.326	1.203	2.775
							Any special costs	0.700	0.000	0.000	0.000
							Grand Total	41.682			

PABS Appraisal Summary Table - N63a.1.T1							
Scheme Option: N63 Longford to Lanesborough		Description: 9.251km upgrade to S2 Type 1 standard	Problems Identified: - Approx 50% of this corridor has lane width less than 3m and approx 55% less than 3.5m wide. - Section of poor visibility either side of where the corridor crosses the royal Canal. - There is some indication of accidents occurring in the vicinity of the crossing of the Grand Canal, west of Longford in corridor N63a.		Budget Cost (million) €41.68		
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score	
Environment	Air Quality		44 households affected in 2025	-€0.025	No	3.9	
	Noise and vibration		2 tonnes of carbon saved in 2025	€0.000			
	Landscape and visual quality		44 households affected in 2025	-€0.026	No	3.9	
	Biodiversity	Not assessed			Not assessed	4.0	
	Cultural Heritage / archaeology	Proposed realignment could indirectly impact on the Royal Canal pNHA (002103). There is also potential for direct impacts on Lough Bannow pNHA (000449).				No	2.5
Safety	Landuse	Cultural Heritage / archaeology	Realignment of road will come close to a Castle – Tower House and some NIAH sites (SURV018), which are all within 100m of the route.		No	3.0	
	Water resources	Landuse	The proposed realignments will be primarily within Artificial Areas but also some Wetland Areas.		No	4.0	
	Accident reduction	Water resources	Proposed realignment could indirectly impact on the Royal Canal pNHA (002103). There is also potential for direct impacts on Lough Bannow pNHA (000449).		No	2.5	
	Security	Accident reduction	No additional facility for walkers and cyclists is to be provided.	€9.647		6.7	
	Economy	Transport Efficiency and Effectiveness		79 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €4.719 €1.887 €0.000	4.3	4.3
Accessibility and Social Inclusion	Other economic impacts			PVC Residual value €28.468 €2.498			
	Funding	Not assessed	Imperfect competition effects	€0.189		4.3	
	Vulnerable groups	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0	
	Deprived geographic areas		2 CLAR zones experience improved access to Hub/Gateway			4.3	
	Transport integration					5.0	
Integration	Land-use integration					4.6	
	Geographical integration					4.4	
	Integration with other government policies					4.1	
				NPV	Total	4.5	
				BCR	0.66	No	
					Red Flagged	No	

N63.a.1.T2			Name: Longford to Lanesborough				Type: S2 Type 2				
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
120029 (Former link no. 118730)	2.734 (Former link length3.282)	77	1.8	0.2	3303	2.729	3.694	0.436	0.098	0.820	
118733	0.680	73.5	3.0	0.8	3304	0.675	1.095	0.212	0.044	0.204	
Break at Killashee											
118737	3.579	73.5	3.0	0.8	3304	3.550	5.761	1.117	0.231	1.074	
118736	2.258	78	1.4	0.0	3303	2.258	2.863	0.249	0.060	0.677	
Longford to Lanesborough	Total 9.251					Total 9.212					
<p>Notes:</p> <p>This route is relatively wide coming out of Longford. The first approximately 1.13km is to Type 1 or Type 2 standard and it is therefore not proposed to upgrade this section. The route then narrows down somewhat and there is a short overtaking section at Cloonturk. From the aerial photography there is a boggy area visible at this location. There are a number of bends before Aghnaskea Bridge. This scheme is then broken at Kilashee but may be combined with the relief road option for Kilashee also. From Kilashee to Lanesborough the route is generally bendy and narrow with some short overtaking opportunities and one decent overtaking opportunity at the straight section at the approach to Lanesborough. There is a 650m long widened section between T1 and T2 standards at approx 3.6km from Lanesborough.</p> <p>There is an NHA to the south of the route at the approach to Lanesborough (at Derryloughbanrow).</p> <p>Possible boggy area visible on aerial photography for approx 4.7km of the route.</p> <p>1 No Royal Canal crossing at Aghnaskea Bridge, narrow stone bridge (add const cost)</p> <p>Stone retaining walls between Aghnaskea Bridge and Killashee</p> <p>1 No narrow stone bridge (will need to be widened / replaced)</p> <p>1 No at grade railway crossing.</p> <p>3 no. stream crossings</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 2.5 to 3.5 – Maintenance Bracket 2</p> <p>Copy variant used for N63.a.1.T2 and amend attribution as per this sheet.</p>							TOTAL:	13.412	2.014	0.433	2.775
							Any special costs	0.600	0.000	0.000	0.000
							Grand Total	19.234			


PABS Appraisal Summary Table - N63a.1.T2						
Scheme Option: N63 Longford to Lanesborough		Description: 9.212km upgrade to S2 Type 2 standard	Problems Identified:			Budget Cost (million) €9.23
			<ul style="list-style-type: none"> <li>Approx 50% of this corridor has lane width less than 3m and approx 55% less than 3.5m wide.</li> <li>Section of poor visibility either side of where the corridor crosses the royal Canal.</li> <li>There is some indication of accidents occurring in the vicinity of the crossing of the Grand Canal, west of Longford in corridor N63a.</li> </ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		44 households affected in 2025 2 tonnes of carbon saved in 2025	€0.015 €0.000	No	4.1
	Noise and vibration Landscape and visual quality		44 households affected in 2025	€0.003	No	4.0
		Not assessed			Not assessed	4.0
	Biodiversity	Proposed realignment could indirectly impact on the Royal Canal pNHA (002103). There is also potential for direct impacts on Lough Bannow pNHA (000449).			No	2.5
	Cultural Heritage / archaeology	Realignment of road will come close to a Castle – Tower House and some NIAH sites (SURV018), which are all within 100m of the route.			No	3.0
Landuse		The proposed realignments will be primarily within Artificial Areas but also some Wetland Areas.			No	4.0
	Water resources	Proposed realignment could indirectly impact on the Royal Canal pNHA (002103). There is also potential for direct impacts on Lough Bannow pNHA (000449).			No	2.5
	Accident reduction		0.2 accidents saved in 2025	€4.182		6.6
Safety	Security	No additional facility for walkers and cyclists is to be provided.				4.0
Economy	Transport Efficiency and Effectiveness		40 vehicle-hours per day in travel time saved in 2025	Non-work Work €2.226 €0.292		4.3
				Active travel €0.000		
				PVC Residual €12.760 €0.879		
Other economic impacts			Imperfect competition and shadow price of labour effects	€0.816		6.6
	Funding	Not assessed				4.0
	Vulnerable groups Deprived geographic areas	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
Accessibility and Social Inclusion			2 CLAR zones experience improved access to Hub/Gateway			4.3
Integration	Transport integration					5.0
	Land-use integration					4.6
	Geographical integration					4.4
	Integration with other government policies					4.1
				NPV	-€4.347	Total
				BCR	0.66	Red Flagged
						4.6
						No

N63.r.1.T1			Name: Longford Relief Road					Type: S2 Type 1		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120116	2.929	N/A	N/A	0.0	3301	2.929	9.080	2.636	0.381	0.879
Longford Relief Road						Total 2.929				
<p>Notes:</p> <p>This route passes to the west of Longford town from the N63 junction with the R397 and connects the N63 with the N5 at a proposed roundabout that is part of the N5 Longford Bypass scheme. This scheme is currently at Preliminary Design stage. However, it should be noted that the N5 Longford Bypass scheme does not currently provide linkage with the N63.</p> <p>There are no environmentally designated areas in the vicinity of this route other than the Longford town spur of the Royal Canal which is an NHA.</p> <p>1 No junction with the N5</p> <p>1 No Royal Canal crossing</p> <p>Possible boggy areas exist over much of the route (e.g. at Mullagh Bog; visible from aerial photography) (Add costs).</p> <p>High Traffic Poor Subgrade – Maintenance Category 4</p> <p>New Link 120116 joins existing nodes 485620 and 48514.</p>						TOTAL:	9.080	2.636	0.381	0.879
						Any special costs	1.816 0.300	0.000	0.000	0.000



PABS Appraisal Summary Table - N63r.1.T1						
Scheme Option: N63 Longford Relief Road		Description: 2.929km upgrade to S2 Type 1 standard	Problems Identified:			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		0 households affected in 2025	€0.000	No	4.0
	Noise and vibration		0 tonnes of carbon saved in 2025	€0.000	No	
	Landscape and visual quality		0 households affected in 2025	€0.000	No	4.0
	Biodiversity	Not assessed			Not assessed	4.0
			Realignment of road will directly cross the Royal Canal pNHA (002103). There is also potential for indirect impacts on Brown Bog SAC (002345) and pNHA (000442).			Yes
	Cultural Heritage / archaeology	The relief road will come closer to a Castle, two Enclosures, four Ringforts, a Road-Tougher, two ritual sites a graveyard and a church which are within 100m of the route.			No	3.0
	Landuse	The proposed realignments will run primarily through Agricultural Areas.			No	4.0
	Water resources	Realignment of road will directly cross the Royal Canal pNHA (002103).			No	3.0
Safety	Accident reduction		0.6 accidents saved in 2025	€2.922		6.1
	Security	No additional facility for walkers and cyclists is to be provided.				4.0
Economy	Transport Efficiency and Effectiveness		13 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel	€2.495 €2.307 €0.000	4.6
				PVC Residual value	€11.142 €0.866	
			Imperfect competition effects	€0.231		4.8
		Other economic impacts	Not assessed			4.0
		Funding	Some of the route corridor is within 4km of a settlement of 1,500 people or more.			
Accessibility and Social Inclusion	Vulnerable groups		2 CLAR zones experience improved access to Hub/Gateway			4.5
	Deprived geographic areas					
Integration	Transport integration					5.0
	Land-use integration					4.6
	Geographical integration					4.4
	Integration with other government policies					4.1
				NPV	Total	
				BCR	0.79	Red Flagged
						4.6
						Yes



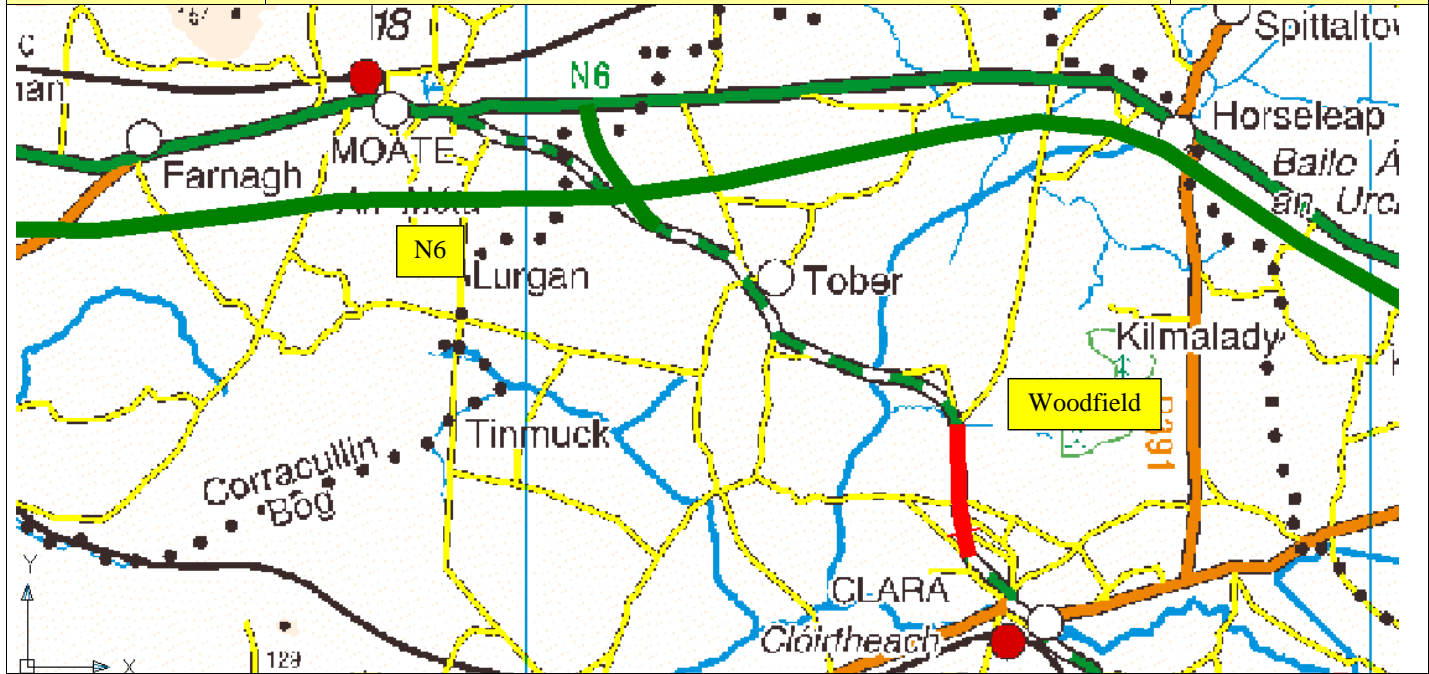
N63.r.2.T2			Name: Killashee Relief Road					Type: S2 Type 2			
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
118735	1.145	N/A	N/A	0.0	3303	1.145	2.634	0.802	0.149	0.344	
Killashee Relief Road						Total 1.145					
<p>Notes:</p> <p>This route passes to the north of Kilashee and would bypass 2 No. very bad bends within Kilashee village.</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>1 No local road junction.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>Split link 118735</p> <p>Split 1 @ 207,680   270,060 Western end</p> <p>Split 2: @ 208,625.   270,450.</p> <p><u>Must also split link @ 207,995.   270,140 as cannot have two links between same nodes.</u></p> <p>Add new link between Split 1 and Split 2</p>						TOTAL:	2.634	0.802	0.149	0.344	
						Any special costs	0.000	0.000	0.000	0.000	
						Grand Total					3.929

PABS Appraisal Summary Table - N63r.2.T2						
Scheme Option: N63 Killashee Relief Road		Description: 1.145km upgrade to S2 Type 2 standard		Problems Identified:		Budget Cost (million) €3.93
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		0 households affected in 2025 0 tonnes of carbon saved in 2025	€0.000	No	4.0
	Noise and vibration Landscape and visual quality		0 households affected in 2025	€0.000	No	4.0
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	Realignment of road has potential to indirectly impact on the Royal Canal pNHA (002103).			No	3.0
	Landuse	Realignment of road will come close to a Church and a NIAH site (SURV018) which are within 100m of the route			No	3.0
	Water resources	The proposed realignments will run primarily through Agricultural Areas.			No	4.0
		Realignment of road has potential to indirectly impact on the Royal Canal pNHA (002103).			No	3.0
Safety	Accident reduction		0.5 accidents saved in 2025	€1.510		7.0
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0
	Transport Efficiency and Effectiveness		118 vehicle-hours per day in travel time saved in 2025	Non-work Work €7.427 €4.286		7.0
				Active travel €0.000		
				PVC €3.341 Residual €0.233 value		
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	€0.429		7.0
	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				
	Deprived geographic areas		2 CLAR zones experience improved access to Hub/Gateway			7.0
Integration	Transport integration					
	Land-use integration					5.0
	Geographical integration					4.6
	Integration with other government policies					4.4
						4.1
				NPV	€10.543	Total
				BCR	4.16	Red Flagged
						5.6
						No

N80.a.1.T1

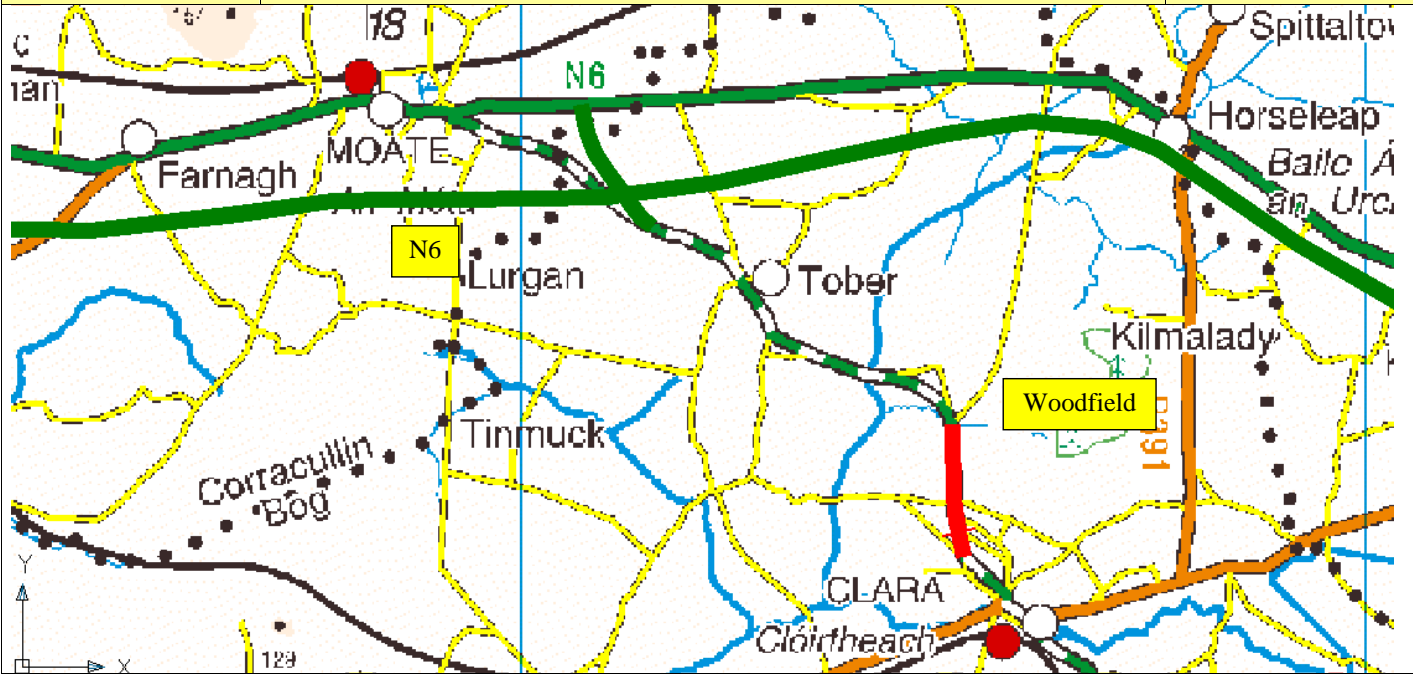
Name: Woodfield to Clara

Type: S2 Type 1



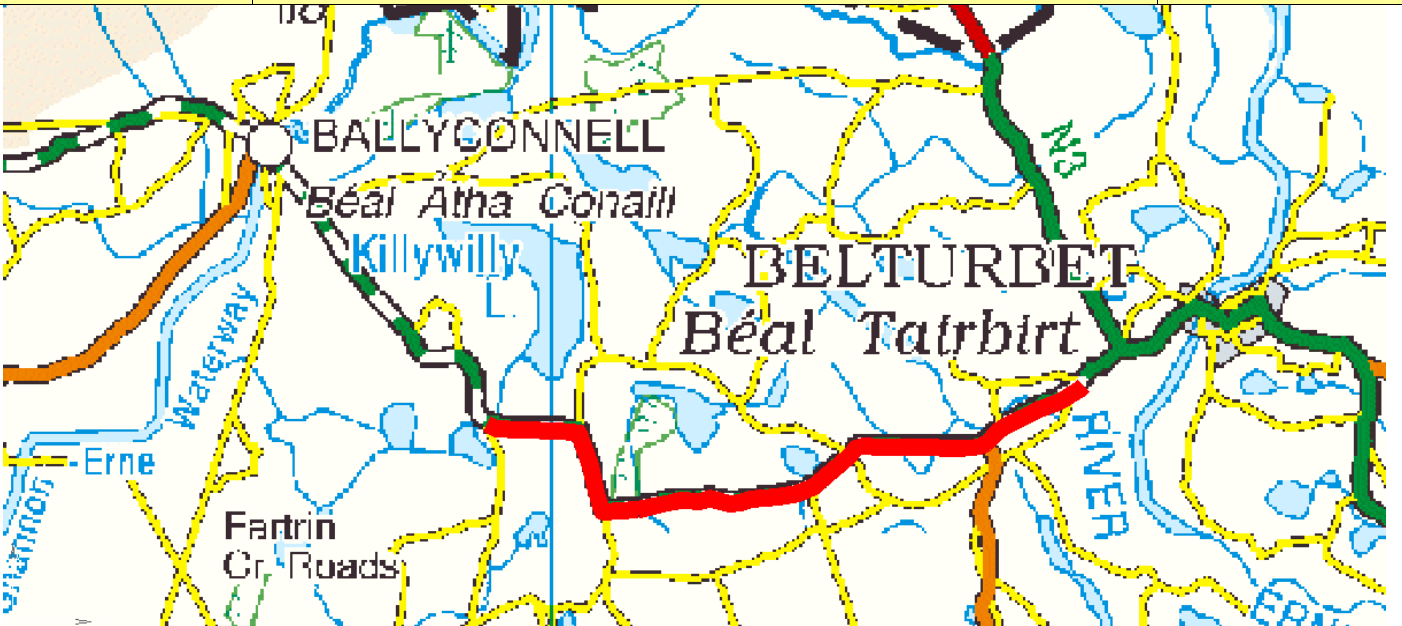
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
120041	1.269	76.5	N/A	0.0	3301	1.269	3.934	1.142	0.165	0.381	
101406	0.010	76.5	N/A	0.0	3301	0.01	0.031	0.009	0.001	0.003	
101405	0.290	76.5	N/A	0.0	3301	0.29	0.899	0.261	0.038	0.087	
Moate (Woodfield) to Clara	Total 1.569					Total 1.569					
<div>Notes:</div> <div>Some of this route has been upgraded as part of the M6 and the new interchange east of Moate. The existing route from the tie-in to N6 interchange until Woodfield is already to between Type 2 and Type 1 standard, has some short overtaking sections and is therefore not proposed to be upgraded here. The 1.569km section proposed to be upgraded here is narrower than the rest of this corridor and is therefore proposed for upgrade.</div> <div>There are no environmentally designated areas in the vicinity of this route.</div> <div>1 No. stream crossing.</div> <div>Low Traffic Good Subgrade – Maintenance Category 1</div> <div>IRI 2.6 to 3.5 – Maintenance Bracket 2</div> <div>Edits made in base network since this time: Link 119326 destroyed, split and replaced with 120904. Following links upgraded to 3303 as these existing links did not reflect the reality on the ground: 120905, 119327 due to change in road network since basis of quality score measured.</div>							TOTAL:	4.864	1.412	0.204	0.471
							Any special costs	0.000	0.000	0.000	0.000
							Grand Total	6.951			

PABS Appraisal Summary Table - N80a.1.T1								
Scheme Option: N80 Woodfield to Clara		Description: 1.569km upgrade to S2 Type 1 standard	Problems Identified: · Lane width data suggests that the appropriate width is generally available except in the vicinity of Clara and on the immediate approach to Moate · For this corridor, 23% has lane widths less than 3.0m and 28% less than 3.5m. · Sight distances are reasonably good throughout this corridor. · Junction proliferation approximately 1 per km. · The rate for fatal accidents is greater than the average for the NSRN · The section of the route is generally uniform with general consistency of standard. · Accident problem evident between Clara and Tullamore. · Poor pavement condition with approximately 25% of the route with IRI > 4.					Budget Cost (million) €6.95
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score		
Environment	Air Quality		19 households affected in 2025 -1 tonnes of carbon saved in 2025	-€0.013 €0.000	No	3.7	3.2	
	Noise and vibration		19 households affected in 2025	-€0.176	No	1.0		
	Landscape and visual quality	Not assessed			Not assessed	4.0		
	Biodiversity	The proposed realignment may indirectly impact on Woodfield Bog pNHA (000586).			No	3.0		
	Cultural Heritage / archaeology	The proposed realignment will come close to an Enclosure and a Rinfort – Rath site already within 100m of the route.			No	3.0		
	Landuse	The proposed realignments will be primarily within Agricultural Areas with a smaller section through existing Artificial Surfaces.			No	4.0		
	Water resources	The proposed realignments in this section of the N80 does not cross or impact on any water bodies.			No	4.0		
Safety	Accident reduction		0.7 accidents saved in 2025	€5.905		7.0	6.7	
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0		
	Transport Efficiency and Effectiveness		169 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €7.922 €5.005 €0.000		7.0	7.0	
				PVC Residual €4.817 €0.419 value				
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	€0.501		7.0		
	Funding	Not assessed				4.0		
	Vulnerable groups	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0	4.2	
Integration	Deprived geographic areas		0 CLAR zones experience improved access to Hub/Gateway			4.4		
	Transport integration							
	Land-use integration					5.0	6.3	
	Geographical integration					7.0		
	Integration with other government policies					4.2		
						5.3		
				NPV	€14.746	Total	6.1	
				BCR	4.06	Red Flagged	No	

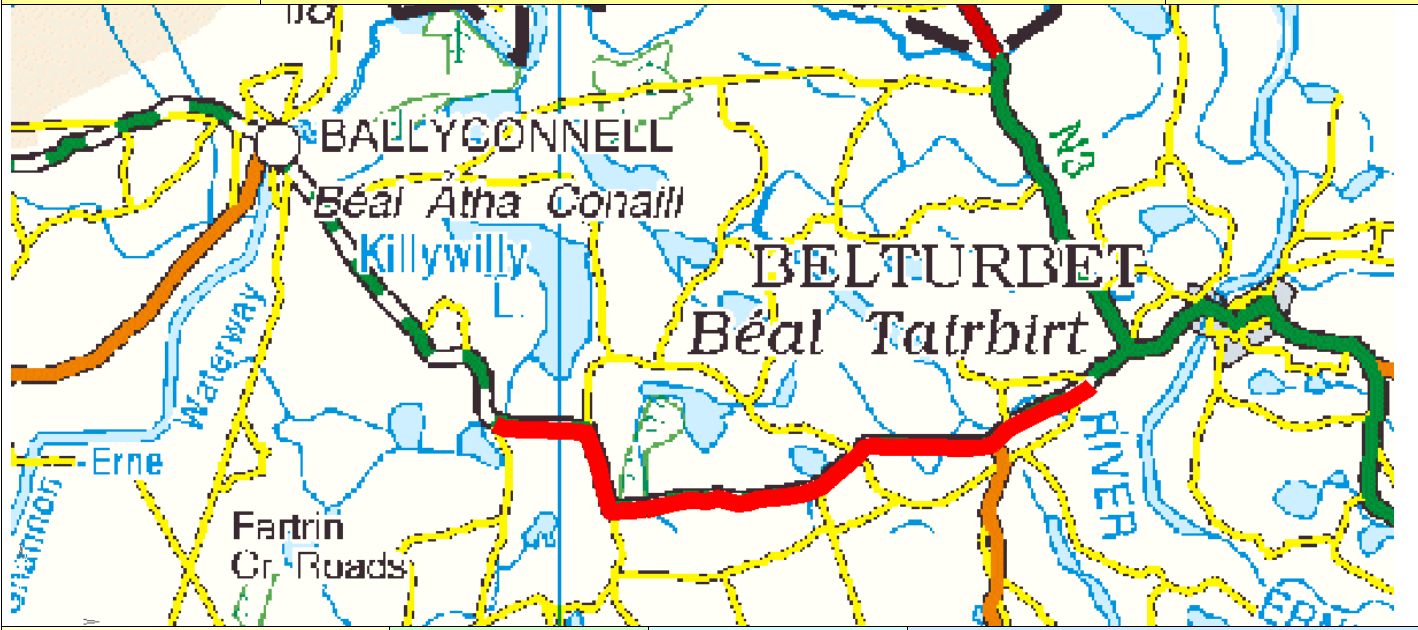
N80.a.1.T2			Name: Woodfield to Clara					Type: S2 Type 2			
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
120041	1.269	76.5	1.8	0.4	3303	1.264	1.765	0.232	0.051	0.381	
101406	0.010	76.5	1.8	0.4	3303	0.010	0.014	0.002	0.000	0.003	
101405	0.290	76.5	1.8	0.4	3303	0.289	0.403	0.053	0.012	0.087	
Moate (Woodfield) to Clara	Total 1.569					Total 1.563					
<p>Notes:</p> <p>Some of this route has been upgraded as part of the M6 and the new interchange east of Moate. The existing route from the tie-in to N6 interchange until Woodfield is already to between Type 2 and Type 1 standard, has some short overtaking sections and is therefore not proposed to be upgraded here. The 1.569km section proposed to be upgraded here is narrower than the rest of this corridor and is therefore proposed for upgrade. There is some overtaking along this section and so this upgrade is mainly proposed to improve the width along this section and may be better classified as a local widening scheme. There are no environmentally designated areas in the vicinity of this route.</p> <p>1 No. stream crossing.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 2.6 to 3.5 – Maintenance Bracket 2</p> <p>Edits made in base network since this time: Link 119326 destroyed, split and replaced with 120904. Following links upgraded to 3303 as these existing links did not reflect the reality on the ground: 120905, 119327 due to change in road network since basis of quality score measured.</p>						TOTAL:	2.182	0.287	0.063	0.471	
						Any special costs	0.000	0.000	0.000	0.000	
						Grand Total					3.003

PABS Appraisal Summary Table - N80a.1.T2								
Scheme Option: NN80 Woodfield to Clara		Description: 1.563km upgrade to S2 Type 2 standard	Problems Identified: · Lane width data suggests that the appropriate width is generally available except in the vicinity of Clara and on the immediate approach to Moate · For this corridor, 23% has lane widths less than 3.0m and 28% less than 3.5m. · Sight distances are reasonably good throughout this corridor. · Junction proliferation approximately 1 per km. · The rate for fatal accidents is greater than the average for the NSRN · The section of the route is generally uniform with general consistency of standard. · Accident problem evident between Clara and Tullamore. · Poor pavement condition with approximately 25% of the route with IRI > 4.				Budget Cost (million) €3.00	
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score		
Environment	Air Quality		19 households affected in 2025	-€0.002	No	3.9		
	Noise and vibration		0 tonnes of carbon saved in 2025	€0.000				
	Landscape and visual quality		19 households affected in 2025	-€0.033	No	2.1		
	Biodiversity				Not assessed	4.0		
	Cultural Heritage / archaeology		The proposed realignment may indirectly impact on Woodfield Bog pNHA (000586).		No	3.0		
	Landuse		The proposed realignment will come close to an Enclosure and a Rinfort – Rath site already within 100m of the route.		No	3.0		
Safety	Water resources		The proposed realignments will be primarily within Agricultural Areas with a smaller section through existing Artificial Surfaces.		No	4.0		
	Accident reduction		The proposed realignments in this section of the N80 does not cross or impact on any water bodies.		No	4.0		
	Security		0.3 accidents saved in 2025	€2.860		7.0		
			No additional facility for walkers and cyclists is to be provided.			4.0		
Economy	Transport Efficiency and Effectiveness		83 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €5.983 €3.135 €0.000		7.0		
				PVC Residual value €2.103 €0.133				
	Other economic impacts		Imperfect competition effects	€0.314		7.0		
	Funding		Not assessed			4.0		
Accessibility and Social Inclusion	Vulnerable groups		Some of the route corridor is within 4km of a settlement of 1,500 people or more.			4.1		
	Deprived geographic areas		0 CLAR zones experience improved access to Hub/Gateway			4.1		
Integration	Transport integration							
	Land-use integration					5.0		
	Geographical integration					7.0		
	Integration with other government policies					4.2		
						5.3		




N87.a.1.T2			Name: Belturbet to Ballyconnell				Type: S2 Type 2			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120069 (Former link no. 64621)	1.075 (Former link length1.490)	72.5	4.2	1.4	3304	1.060	1.800	0.376	0.077	0.323
119520	3.479	72.5	4.2	1.4	3304	3.430	5.826	1.218	0.249	1.044
120070 (Former link no. 119522)	1.973 (Former link length3.288)	66	6.2	3.5	3306	1.904	3.945	1.057	0.206	0.592
Belturbet to Ballyconnell	Total 6.527					Total 6.394				
<p>Notes:</p> <p>The NRA scheme, N87 Belturbet to Ballyconnell, in this area is currently at Constraints Study Stage. The scheme involves a realignment of approx 6.5km of the scheme from Lisnamaine townland to Cranaghan townland. (No scheme layout map available for this scheme).</p> <p>This first 450m of this route from the roundabout at the outskirts of Belturbet is to approx S2 Type 1 standard and is therefore not considered here. The route is generally bendy and narrow with a very poor vertical alignment, consequently there are few overtaking opportunities. There are number of very bad bends along the route. There are a number of very short overtaking opportunities but many of these are hampered by the vertical alignment. From Cranaghan Bridge to Ballyconnell the road is to Type 3 or Type 2 standard, is or relatively recent construction and there is s footpath present on the south side from the entrance to the Slieve Russell Hotel to Ballyconnell. It is therefore not proposed to look at further upgrading this section even though overtaking is somewhat limited.</p> <p>There are a number of small lakes to the north of this route and they are environmentally designated as SAC's and NHA's. The route passes close to one of these lakes, Killynaher Lough which is listed as an SAC.</p> <p>3 No stream crossings.</p> <p>Forest area to the south of the route for approx 300m</p> <p>3 No. very bad bends.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p> <p>Link 64621 split @ (235008, 316395) resulting link 120069</p> <p>Link 119522 split @ (229387, 316033) resulting link 120070.</p>						TOTAL:	11.570	2.652	0.532	1.958
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	16.712			

PABS Appraisal Summary Table - N87a.1.T2							
Scheme Option: N87 Belturbet to Ballyconnell		Description: 6.394km upgrade to S2 Type 2 standard	Problems Identified: · Lane width < 3m for majority of this section of the route with some section less than 2.75m. · Intermittent poor visibilities to V=85kph and V=100kph design standards but visibility is not substandard over substantial lengths. · Relatively high incidence of accidents · Visibility drops into the 20 to 120m range for approximately 5km between the junction with the road to Milltown west to Ballyhugh and on for a further approx 3km towards Ballyconnell. · Approximately 1km either side of Ballyconnell the visibility is poor and in the 20 to 120m range predominantly; · There is an apparent accident cluster located approximately 2km west of Belturbet near the junction with the road to Milltown. This accident cluster corresponds to an area of relatively good visibility however the lane widths at this section are between 2.75 and 3.0m. · The second accident cluster along this route is located approximately 3km north west of Ballyhugh close to the junction with the road to Ardrougher. This location does correspond to a stretch with poor visibility with visibility dropping into the 20 to 120m range in places. The lane widths are also substandard at this location as they are consistently in the 2.75 to 3.0m. · The final accident cluster occurs just within the urban speed zone south of Ballyconnell. At this location visibility appears to be to standard however once again the lane widths are in the 2.75 to 3.0m range.		Budget Cost (million) €6.71		
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score	
Environment	Air Quality		54 households affected in 2025 3 tonnes of carbon saved in 2025	€0.039 €0.000	No	4.4	
	Noise and vibration		54 households affected in 2025	-€0.114	No	2.8	
	Landscape and visual quality	Not assessed			Not assessed	4.0	
	Biodiversity	The proposed realignment will impact directly and indirectly on the Lough Oughter & Associated Loughs SAC & pNHA (000007).			Yes	1.0	
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including a Stone Row.			No	3.0	
	Landuse	The proposed realignments will primarily be within Agricultural Areas.			No	4.0	
Safety	Water resources	The proposed realignment will impact directly and indirectly on the Lough Oughter & Associated Loughs SAC & pNHA (000007).			Yes	1.0	
	Accident reduction		0.2 accidents saved in 2025	€1.273		4.9	
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0	
	Transport Efficiency and Effectiveness		47 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €2.443 €0.714 €0.000		4.4	
Accessibility and Social Inclusion	Other economic impacts			PVC Residual value €11.180 €0.884			
	Funding	Not assessed	Imperfect competition effects	€0.071		4.3	
Integration	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0	
	Deprived geographic areas		4 CLAR zones experience improved access to Hub/Gateway			4.9	
Integration	Transport integration					6.0	
	Land-use integration					4.3	
	Geographical integration					4.8	
	Integration with other government policies					4.2	
				NPV	-€5.870	Total	4.3
				BCR	0.47	Red Flagged	Yes


N87.a.1.T3			Name: Belturbet to Ballyconnell				Type: S2 Type 3			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120069 (Former link no. 64621)	1.075 (Former link length 1.490)	72.5	1.6	0.1	3306	1.074	1.110	0.104	0.031	0.323
119520	3.479	72.5	1.6	0.1	3306	3.477	3.594	0.336	0.101	1.044
120070 (Former link no. 119522)	1.973 (Former link length 3.288)	66	2.8	0.7	3309	1.959	2.405	0.384	0.109	0.592
Belturbet to Ballyconnell	Total 6.527					Total 6.510				
<p>Notes:</p> <p>The NRA scheme, N87 Belturbet to Ballyconnell, in this area is currently at Constraints Study Stage. The scheme involves a realignment of approx 6.5km of the scheme from Lisnamaine townland to Cranaghan townland. (No scheme layout map available for this scheme).</p> <p>This first 450m of this route from the roundabout at the outskirts of Belturbet is to approx S2 Type 1 standard and is therefore not considered here. The route is generally bendy and narrow with a very poor vertical alignment, consequently there are few overtaking opportunities. There are number of very bad bends along the route. There are a number of very short overtaking opportunities but many of these are hampered by the vertical alignment. From Cranaghan Bridge to Ballyconnell the road is to Type 3 or Type 2 standard, is or relatively recent construction and there is s footpath present on the south side from the entrance to Slieve Russell Hotel to Ballyconnell. It is therefore not proposed to look at further upgrading this section even though overtaking is somewhat limited. There are a number of small lakes to the north of this route and they are environmentally designated as SAC's and NHA's. The route passes close to one of these lakes, Killynaher Lough which is listed as an SAC.</p> <p>3 No stream crossings.</p> <p>Forest area to the south of the route for approx 300m</p> <p>3 No. very bad bends.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p> <p>Link 64621 split @ (235008, 316395) resulting link 120069</p> <p>Link 119522 split @ (229387, 316033) resulting link 120070.</p>						TOTAL:	7.109	0.824	0.241	1.958
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	10.132			

F01

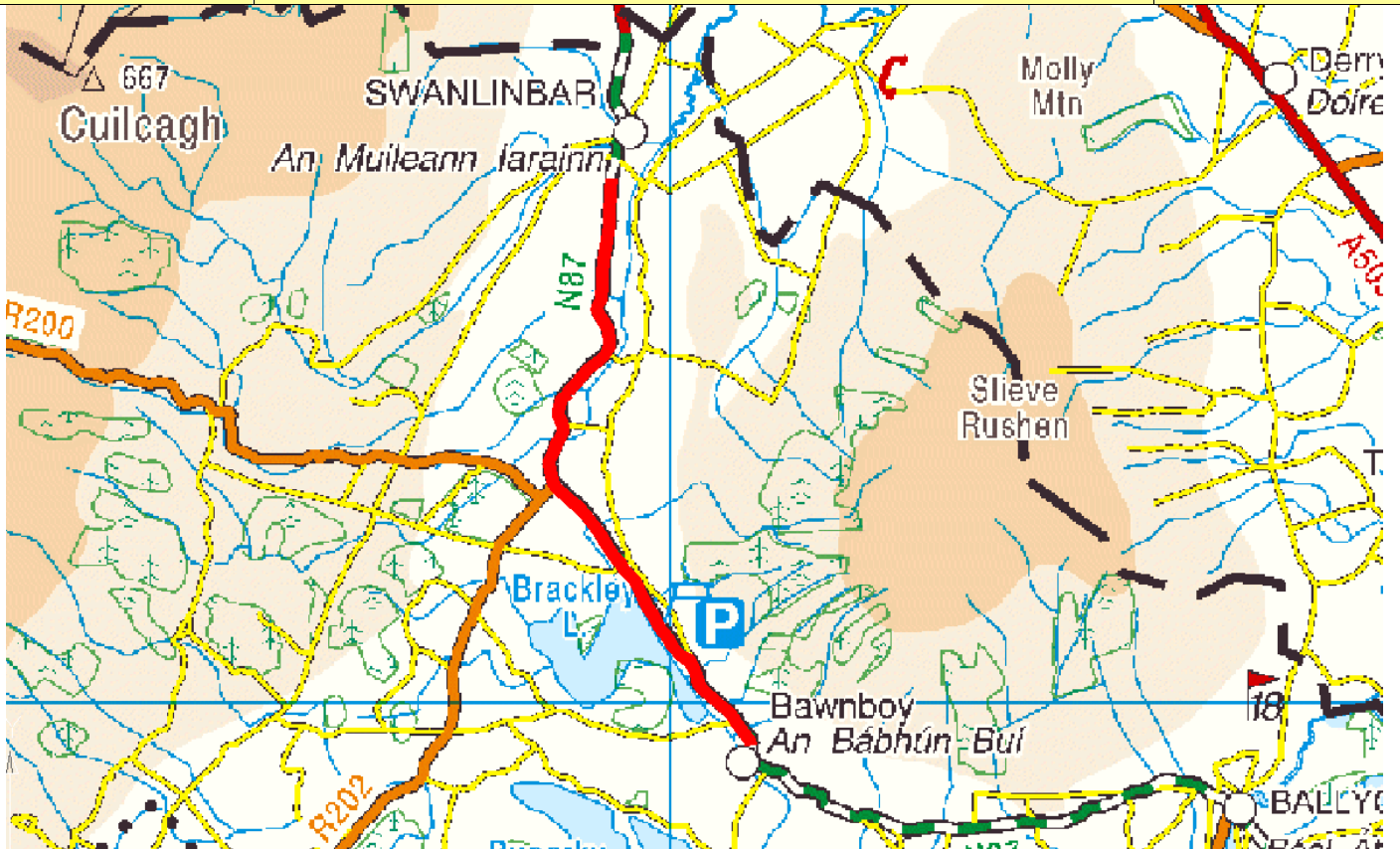
N87.b.1.T2			Name: Ballyconnell to Bawnboy				Type: S2 Type 2			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
119523	4.283	71.5	3.4	1.0	3305	4.242	6.447	1.000	0.335	1.285
119526	1.748	65.5	7.8	5.0	3304	1.660	1.906	0.516	0.100	0.284
Ballyconnell to Bawnboy	Total 6.031					Total 5.902				
<p>Notes:</p> <p>The first 1.704km out of Ballyconnell is approximately to S2 Type 3 standard widths but remains in a full non overtaking zone and has a wide road reservation. Therefore the construction and land costs are reduced for this section. There is one short overtaking section along this route. The majority of this section is narrow and bendy and has a very poor vertical alignment. The final 500m into Bawnboy is to approx Type 3 and has a wide road reservation but is a non-overtaking zone and so is proposed to be upgraded here. There are no environmentally designated areas in the vicinity of this route. 2.5km bendy and narrow section with poor VA from Munlough North to Corrasmongan. 5 No. stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p>						TOTAL:	8.353	1.516	0.435	1.569
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	11.873			

PABS Appraisal Summary Table - N87b.1.T2							
Scheme Option: N87 Ballyconnell to Bawnboy		Description: 5.902km upgrade to S2 Type 2 standard	Problems Identified:		Budget Cost (million) €1.87		
			<ul style="list-style-type: none"><li>· Lane width &lt; 3m for majority of this section of the route and many sections are less than 2.75m. From Bawnboy to the Northern Ireland Border north of Swanilbar is particularly poor. The lane widths east of Bawnboy and around Ballyhugh are also poor.</li><li>· Intermittent poor visibilities to V=85kph and V=100kph design standards but visibility is not substandard over substantial lengths.</li><li>· Between Ballyconnell and Bawnboy the approx 5km nearest Bawnboy has a number of locations where the visibility drops into the 20 to 120m range;</li><li>· North of Bawnboy there is a section approximately 2km in length adjacent to Brackley Lough where the visibility is consistently in the 20 to 120m range;</li><li>· For approximately 2km north of Swanilbar the visibility once again is in the 20 to 120m range.</li><li>· 47% of the corridor has a pavement condition index, IRI &gt;4.</li></ul>				
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score	
Environment	Air Quality		44 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.006 €0.000	No	3.9	
	Noise and vibration		44 households affected in 2025	-€0.118	No	2.1	
	Landscape and visual quality	Not assessed			Not assessed	4.0	
	Biodiversity	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No	4.0	
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including three Ringforts, a Sheela-Na-Gig and a Castle.			No	3.0	
	Landuse	The proposed realignments will primarily be within Agricultural Areas.			No	4.0	
Safety	Water resources	The proposed realignments in this section of the N87 will cross the Drumane River and Templeport Lake Stream.			No	3.0	
	Accident reduction		0.1 accidents saved in 2025	€0.747		4.8	
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0	
	Transport Efficiency and Effectiveness		26 vehicle-hours per day in travel time saved in 2025	Non-work Work €1.379 €0.788 €0.000		4.4	
				PVC Residual €7.542 €0.575			
	Other economic impacts		Imperfect competition effects	€0.079		4.4	
	Funding	Not assessed				4.0	
Accessibility and Social Inclusion	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0	
	Deprived geographic areas		3 CLAR zones experience improved access to Hub/Gateway			4.8	
Integration	Transport integration					5.0	
	Land-use integration					4.3	
	Geographical integration					4.8	
	Integration with other government policies					4.2	
				NPV BCR	-€4.059 0.46	Total Red Flagged	4.3 No



N87.b.1.T3			Name: Ballyconnell to Bawnboy					Type: S2 Type 3		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120073 (Former link no. 119523)	2.641 (Former link length 4.283)	71.5	1.1	0.0	3307	2.641	3.574	0.734	0.196	0.792
120074 (Former link no. 119526)	1.245 (Former link length 1.748)	65.5	3.9	1.2	3308	1.230	1.685	0.346	0.092	0.374
Ballyconnell to Bawnboy	Total 3.886					Total 3.871				
<p>Notes:</p> <p>The first 1.705km out of Ballyconnell is approximately to S2 Type 3 standard in width but remains a non overtaking zone and has a wide road reservation. It is therefore not proposed to upgrade this section to Type 3 standatd. There is one short overtaking section along this route. The majority of this section is narrow and bendy and has a very poor vertical alignment. The final 500m into Bawnboy is to approx Type 3 width and has a wide road reservation. It is therefore not proposed to upgrade this last section to Type 3 standard.</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>2.5km bendy and narrow section with poor VA from Munlough North to Corrasmongan.</p> <p>4 No. stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p> <p>Link 119523 split @ (225422, 318636) resulting link 120073</p> <p>Link 119526 spltd @ (221776, 318865) resulting link 120074.</p>						TOTAL:	5.259	1.080	0.288	1.166
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	7.793			

PABS Appraisal Summary Table - N87b.1.T3						
Scheme Option: N87 Ballyconnell to Bawnboy		Description: 3.871km upgrade to S2 Type 3 standard	Problems Identified:	Budget Cost (million) €7.79		
			<ul style="list-style-type: none"><li>· Lane width &lt; 3m for majority of this section of the route and many sections are less than 2.75m. From Bawnboy to the Northern Ireland Border north of Swanlibar is particularly poor. The lane widths east of Bawnboy and around Ballyhugh are also poor.</li><li>· Intermittent poor visibilities to V=85kph and V=100kph design standards but visibility is not substandard over substantial lengths.</li><li>· Between Ballyconnell and Bawnboy the approx 5km nearest Bawnboy has a number of locations where the visibility drops into the 20 to 120m range;</li><li>· North of Bawnboy there is a section approximately 2km in length adjacent to Brackley Lough where the visibility is consistently in the 20 to 120m range;</li><li>· For approximately 2km north of Swanlibar the visibility once again is in the 20 to 120m range.</li><li>· 47% of the corridor has a pavement condition index, IRI &gt;4.</li></ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		44 households affected in 2025 3 tonnes of carbon saved in 2025	€0.044 €0.000	No	5.1
	Noise and vibration		44 households affected in 2025	-€0.043	No	2.9
	Landscape and visual quality	Not assessed			Not assessed	4.0
	Biodiversity	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including three Ringforts, a Sheela-Na-Gig and a Castle.			No	3.0
	Landuse	The proposed realignments will primarily be within Agricultural Areas.			No	4.0
	Water resources	The proposed realignments in this section of the N87 will cross the Drumane River and Templeport Lake Stream.			No	3.0
Safety	Accident reduction		0.0 accidents saved in 2025	€0.364		4.6
	Security	No additional facility for walkers and cyclists is to be provided.				4.0
Economy	Transport Efficiency and Effectiveness		7 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €0.492 €0.240 €0.000		4.2
				PVC Residual €4.842 €0.382		
	Other economic impacts		Imperfect competition effects	€0.024		4.2
	Funding	Not assessed				4.0
Accessibility and Social Inclusion	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		3 CLAR zones experience improved access to Hub/Gateway			4.4
Integration	Transport integration					5.0
	Land-use integration					4.3
	Geographical integration					4.8
	Integration with other government policies					4.2
				NPV	Total	4.3
				BCR	0.31	No
					Red Flagged	No

N87.b.2.T2			Name: Bawnboy to Swanlinbar				Type: S2 Type 2			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
119530	2.763	65.5	7.8	5.0	3304	2.625	5.574	1.508	0.293	0.829
119529	1.515	68.5	5.9	2.7	3304	1.474	2.870	0.723	0.143	0.455
64625	1.270	68.5	5.9	2.7	3304	1.236	2.406	0.606	0.120	0.381
119532	0.777	68.5	5.9	2.7	3304	0.756	1.472	0.371	0.073	0.233
119535	2.254	70	4.9	1.7	3304	2.216	4.101	0.979	0.196	0.676
Bawnboy to Swanlinbar	Total 8.579					Total 8.307				
<b>Notes:</b> The existing route is generally very bendy and narrow and has a very poor vertical alignment. There are 5 very short overtaking sections but in reality overtaking may not be possible at many of these locations. There are no environmentally designated areas in the vicinity of this route. 1 No narrow stone bridge on bad bend at Killaghduff (yellow bar markings at the approach), to be replaced. 1 No narrow stone bridge over the Owensallagh River, to be widened / replaced. 1 No narrow stone bridge at Moherloon, to be widened / replaced. 1 No narrow stone bridge at approach to Bawnboy, to be widened / replaced. Forest area with route tree lined for approx 2km at Brackley. A number of bad bends along the route. Low Traffic Good Subgrade – Maintenance Category 1 IRI 3.6 to 5 – Maintenance Bracket 3						TOTAL:	16.422	4.185	0.825	2.574
						Any special costs	0.300	0.000	0.000	0.000
						Grand Total	24.306			

PABS Appraisal Summary Table - N87b.2.T2						
Scheme Option: N87 Bawnboy to Swanlibar		Description: 8.307km upgrade to S2 Type 2 standard		Problems Identified:		Budget Cost (million) €4.31
				<ul style="list-style-type: none"><li>· Lane width &lt; 3m for majority of this section of the route and many sections are less than 2.75m. From Bawnboy to the Northern Ireland Border north of Swanlibar is particularly poor. The lane widths east of Bawnboy and around Ballyhugh are also poor.</li><li>· Intermittent poor visibilities to V=85kph and V=100kph design standards but visibility is not substandard over substantial lengths.</li><li>· Between Ballyconnell and Bawnboy the approx 5km nearest Bawnboy has a number of locations where the visibility drops into the 20 to 120m range;</li><li>· North of Bawnboy there is a section approximately 2km in length adjacent to Brackley Lough where the visibility is consistently in the 20 to 120m range;</li><li>· For approximately 2km north of Swanlibar the visibility once again is in the 20 to 120m range.</li><li>· 47% of the corridor has a pavement condition index, IRI &gt;4.</li></ul>		
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		28 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.005 €0.000	No	4.0
	Noise and vibration Landscape and visual quality		28 households affected in 2025	-€0.056	No	3.6
		Not assessed			Not assessed	4.0
	Biodiversity	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including a Ritual Site – Holy Well and a Ringfort.			No	3.0
	Landuse	The proposed realignments will primarily be within Agricultural Areas but one section is through a Water Body.			No	4.0
	Water resources	The proposed realignments in this section of the N87 will cross the Bawnboy River and the Owensallagh River.			No	3.0
	Accident reduction		0.1 accidents saved in 2025	€0.414		4.2
	Security	No additional facility for walkers and cyclists is to be provided.				4.0
Economy	Transport Efficiency and Effectiveness		23 vehicle-hours per day in travel time saved in 2025	Non-work Work €1.172 €0.775 €0.000		4.2
Accessibility and Social Inclusion	Other economic impacts			PVC Residual value €15.579 €1.333		
	Funding	Not assessed	Imperfect competition effects	€0.077		4.2
	Vulnerable groups Deprived geographic areas	None of the route corridor is within 4km of a settlement of 1,500 people or more.	2 CLAR zones experience improved access to Hub/Gateway			4.0
Integration						4.3
	Transport integration					5.0
	Land-use integration					4.3
	Geographical integration					4.8
	Integration with other government policies					4.2
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**Budget Cost (million) €4.31**

- Problems Identified:**
- Lane width < 3m for majority of this section of the route and many sections are less than 2.75m. From Bawnboy to the Northern Ireland Border north of Swanlibar is particularly poor. The lane widths east of Bawnboy and around Ballyhugh are also poor.
  - Intermittent poor visibilities to V=85kph and V=100kph design standards but visibility is not substandard over substantial lengths.
  - Between Ballyconnell and Bawnboy the approx 5km nearest Bawnboy has a number of locations where the visibility drops into the 20 to 120m range;
  - North of Bawnboy there is a section approximately 2km in length adjacent to Brackley Lough where the visibility is consistently in the 20 to 120m range;
  - For approximately 2km north of Swanlibar the visibility once again is in the 20 to 120m range.
  - 47% of the corridor has a pavement condition index, IRI >4.

N87.b.2.T3			Name: Bawnboy to Swanlinbar					Type: S2 Type 3		
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
119530	2.763	65.5	3.9	1.2	3308	2.730	3.398	0.555	0.157	0.829
119529	1.515	68.5	2.7	0.4	3307	1.509	1.752	0.244	0.070	0.455
64625	1.270	68.5	2.7	0.4	3307	1.265	1.469	0.205	0.059	0.381
119532	0.777	68.5	2.7	0.4	3307	0.774	0.899	0.125	0.036	0.233
119535	2.254	70	2.1	0.2	3307	2.249	2.511	0.312	0.091	0.676
Bawnboy to Swanlinbar	Total 8.579					Total 8.527				
<b>Notes:</b> The existing route is generally very bendy and narrow and has a very poor vertical alignment. There are 5 very short overtaking sections but in reality overtaking may not be possible at many of these locations. There are no environmentally designated areas in the vicinity of this route. 1 No narrow stone bridge on bad bend at Killaghduff (yellow bar markings at the approach), to be replaced. 1 No narrow stone bridge over the Owensallagh River, to be widened / replaced. 1 No narrow stone bridge at Moherloon, to be widened / replaced. 1 No narrow stone bridge at approach to Bawnboy, to be widened / replaced. Forest area with route tree lined for approx 2km at Brackley. A number of bad bends along the route. Low Traffic Good Subgrade – Maintenance Category 1 IRI 3.6 to 5 – Maintenance Bracket 3						TOTAL:	10.029	1.442	0.412	2.574
						Any special costs	0.200	0.000	0.000	0.000
						Grand Total	14.657			



PABS Appraisal Summary Table - N87b.2.T3						
Scheme Option: N87 Bawnboy to Swanlibar		Description: 8.527km upgrade to S2 Type 3 standard	Problems Identified:		Budget Cost (million) €4.66	
			<ul style="list-style-type: none"><li>· Lane width &lt; 3m for majority of this section of the route and many sections are less than 2.75m. From Bawnboy to the Northern Ireland Border north of Swanlibar is particularly poor. The lane widths east of Bawnboy and around Ballyhugh are also poor.</li><li>· Intermittent poor visibilities to V=85kph and V=100kph design standards but visibility is not substandard over substantial lengths.</li><li>· Between Ballyconnell and Bawnboy the approx 5km nearest Bawnboy has a number of locations where the visibility drops into the 20 to 120m range;</li><li>· North of Bawnboy there is a section approximately 2km in length adjacent to Brackley Lough where the visibility is consistently in the 20 to 120m range;</li><li>· For approximately 2km north of Swanlibar the visibility once again is in the 20 to 120m range.</li><li>· 47% of the corridor has a pavement condition index, IRI &gt;4.</li></ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		28 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.003 €0.000	No	4.0
	Noise and vibration Landscape and visual quality		28 households affected in 2025	-€0.038	No	3.5
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No	4.0
	Landuse	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including a Ritual Site – Holy Well and a Ringfort.			No	3.0
	Water resources	The proposed realignments will primarily be within Agricultural Areas but one section is through a Water Body.			No	4.0
Safety	Accident reduction	The proposed realignments in this section of the N87 will cross the Bawnboy River and the Owensallagh River.	0.0 accidents saved in 2025	-€0.644	No	3.0
	Security	No additional facility for walkers and cyclists is to be provided.				3.4
Economy	Transport Efficiency and Effectiveness		10 vehicle-hours per day in travel time saved in 2025	Non-work Work €0.360 €0.379 €0.000		4.1
				PVC Residual €8.960 €0.637		
	Other economic impacts	Imperfect competition effects		€0.038		4.2
	Funding	Not assessed				4.0
Accessibility and Social Inclusion	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		2 CLAR zones experience improved access to Hub/Gateway			4.3
Integration	Transport integration					5.0
	Land-use integration					4.3
	Geographical integration					4.8
	Integration with other government policies					4.2
				NPV	Total	4.1
				BCR	Red Flagged	No
					0.08	



N87.b.3.T2

Name: Swanlinbar to N.I. Border

Type: S2 Type 2



Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
119533	1.199	70	4.9	1.7	3304	1.179	2.181	0.521	0.104	0.360
Swanlinbar to N.I. Border	Total 1.199					Total 1.179				
Notes: This route is relatively short and has a good overtaking section. It joins up with the A32 at the Northern Ireland border. The existing pavement condition is poor in some places. There are no environmentally designated areas in the vicinity of this route. Low Traffic Good Subgrade – Maintenance Category 1 IRI 3.6 to 5 – Maintenance Bracket 3						TOTAL:	2.181	0.521	0.104	0.360
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	3.166			

PABS Appraisal Summary Table - N87b.3.T2					
Scheme Option: N87 Swanlibar to N.I. Border	Description: 1.179km upgrade to S2 Type 2 standard	Problems Identified:	Budget Cost (million) €1.17		
			<ul style="list-style-type: none"> <li>· Lane width &lt; 3m for majority of this section of the route and many sections are less than 2.75m. From Bawnboy to the Northern Ireland Border north of Swanlibar is particularly poor. The lane widths east of Bawnboy and around Ballyhugh are also poor.</li> <li>· Intermittent poor visibilities to V=85kph and V=100kph design standards but visibility is not substandard over substantial lengths.</li> <li>· Between Ballyconnell and Bawnboy the approx 5km nearest Bawnboy has a number of locations where the visibility drops into the 20 to 120m range;</li> <li>· North of Bawnboy there is a section approximately 2km in length adjacent to Brackley Lough where the visibility is consistently in the 20 to 120m range;</li> <li>· For approximately 2km north of Swanlibar the visibility once again is in the 20 to 120m range.</li> <li>· 47% of the corridor has a pavement condition index, IRI &gt;4.</li> </ul>		
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Score
Environment	Air Quality		6 households affected in 2025 0 tonnes of carbon saved in 2025	€0.000 €0.000	No 4.0
	Noise and vibration Landscape and visual quality		6 households affected in 2025	-€0.007	No 3.6
	Biodiversity	Not assessed			Not assessed 4.0
	Cultural Heritage / archaeology	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No 4.0
	Landuse	No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned sections of the route.			No 4.0
	Water resources	The proposed realignments will primarily be within Agricultural Areas.			No 4.0
	Accident reduction	The proposed realignments in this section of the N87 will not directly cross as rivers.			No 4.0
Safety	Security		0.0 accidents saved in 2025	€0.010	4.0
Economy	Transport Efficiency and Effectiveness	No additional facility for walkers and cyclists is to be provided.			4.0
			0 vehicle-hours per day in travel time saved in 2025	Non-work Work €0.008 €0.008	4.0
				Active travel PVC €2.015 Residual €0.170	
	Other economic impacts		Imperfect competition effects	€0.001	4.0
Accessibility and Social Inclusion	Funding	Not assessed			4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.			4.0
	Deprived geographic areas		0 CLAR zones experience improved access to Hub/Gateway		4.0
	Transport integration				
Integration	Land-use integration				5.0
	Geographical integration				4.3
	Integration with other government policies				4.8
					4.2
				NPV BCR	Total Red Flagged
				-€1.841 0.09	4.1 No

N87.b.3.T3

Name: Swanlinbar to N.I. Border

Type: S2 Type 3



Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
119533	1.199	70	2.1	0.2	3307	1.197	1.336	0.166	0.048	0.360
Swanlinbar to N.I. Border	Total 1.199					Total 1.197				
Notes: This route is relatively short and has a good overtaking section. It joins up with the A32 at the Northern Ireland border. The existing pavement condition is poor in some places. There are no environmentally designated areas in the vicinity of this route. Low Traffic Good Subgrade – Maintenance Category 1 IRI 3.6 to 5 – Maintenance Bracket 3						TOTAL:	1.336	0.166	0.048	0.360
						Any special costs	0.000	0.000	0.000	0.000
						Grand Total	1.910			

PABS Appraisal Summary Table - N87b.3.T3						
Scheme Option: N87 Swanlibar to N.I. Border		Description: 1.197km upgrade to S2 Type 3 standard	Problems Identified:			
			<ul style="list-style-type: none"> <li>· Lane width &lt; 3m for majority of this section of the route and many sections are less than 2.75m. From Bawnboy to the Northern Ireland Border north of Swanlibar is particularly poor. The lane widths east of Bawnboy and around Ballyhugh are also poor.</li> <li>· Intermittent poor visibilities to V=85kph and V=100kph design standards but visibility is not substandard over substantial lengths.</li> <li>· Between Ballyconnell and Bawnboy the approx 5km nearest Bawnboy has a number of locations where the visibility drops into the 20 to 120m range;</li> <li>· North of Bawnboy there is a section approximately 2km in length adjacent to Brackley Lough where the visibility is consistently in the 20 to 120m range;</li> <li>· For approximately 2km north of Swanlibar the visibility once again is in the 20 to 120m range.</li> <li>· 47% of the corridor has a pavement condition index, IRI &gt;4.</li> </ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		6 households affected in 2025 0 tonnes of carbon saved in 2025	€0.000 €0.000	No	4.0
	Noise and vibration Landscape and visual quality		6 households affected in 2025	-€0.007	No	3.3
		Not assessed			Not assessed	4.0
	Biodiversity	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned sections of the route.			No	4.0
	Landuse	The proposed realignments will primarily be within Agricultural Areas.			No	4.0
Safety	Water resources	The proposed realignments in this section of the N87 will not directly cross as rivers.			No	4.0
	Accident reduction		0.0 accidents saved in 2025	-€0.005		4.0
Economy	Security	No additional facility for walkers and cyclists is to be provided.				4.0
	Transport Efficiency and Effectiveness		0 vehicle-hours per day in travel time saved in 2025	Non-work Work €0.010 €0.000		4.0
				PVC Residual €1.154 €0.080		
	Other economic impacts		Imperfect competition effects	€0.001		4.0
Accessibility and Social Inclusion	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		0 CLAR zones experience improved access to Hub/Gateway			4.0
	Transport integration					
Integration	Land-use integration					5.0
	Geographical integration					4.3
	Integration with other government policies					4.8
						4.2
				NPV	-€1.071	Total
				BCR	0.07	Red Flagged
						4.1
						No

## 8 RECOMMENDATIONS FOR THE NSR NETWORK

### 8.1 APPROACH

Having appraised each individual scheme option identified by the study, there was then a process of bringing these together into a coherent programme for development of the NSR network that could be taken forward by the NRA.

This process involved three steps:

- In the first instance, options which are mutually exclusive (i.e. a Type 2 and Type 3 design standard for the same section of route) were compared using an incremental analysis,
- Then in the second stage schemes were ranked by their Multiple Criteria Analysis (MCA) score.
- Thirdly, those schemes with scores above a threshold value were recommended to be taken forward.

The following sections describe the process in more detail.

### 8.2 CHOICE BETWEEN MUTUALLY-EXCLUSIVE OPTIONS

A standard economic approach would compare the increase in benefits - from moving from a lower-cost option (e.g. a Type 3 design standard) to a higher-cost option (e.g. a Type 2 design standard) – with the corresponding increase in cost. If the ratio of the marginal benefit to the marginal cost compares favourably with a threshold BCR, then the higher-cost option is justified.

Ideally the threshold BCR should be set so as to reflect the BCR of a marginal scheme within the programme as a whole. This is because, given any particular level of budget constraint, in effect the decision to be made is whether better value for money is obtained by building a smaller number of schemes to a higher standard or more schemes to a lowest-cost standard.

For this study, the same general principle was followed, but the incremental analysis employed was based on MCA scores, in order to take full account of the non-monetisable impacts of each scheme.

For each scheme with multiple options, an incremental MCA score was derived, taking account of the change in economic performance of the scheme and the changes in scores for all the other criteria which result from a shift from the lower to the higher standard.

Where this incremental MCA score was greater than 5.5, which represents the threshold score above which the top 50% of good schemes lies – then the higher cost option (e.g. the Type 2 design standard) was selected as the preferred option for a particular improvement scheme. If the incremental MCA score was less than this threshold, then the lower cost option was preferred.

This gave a sound basis for assessing the likely contribution of each individual scheme to the cost of the overall programme, for the purposes of NRA strategic planning. The appropriate road standard for different sections of route is a question that will as a matter of course be reconsidered for each individual scheme at Preliminary Design stage.

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8.3 SCHEME RANKINGS

Once all the mutually-exclusive scheme options had been reduced to a single preferred scheme option for each length of route, these schemes were divided into two groups - rural routes and bypasses of urban settlements. These two groups were considered as (in effect) separate sub-programmes, as they would be subject to different management arrangements by the NRA.

Prioritisation between schemes was undertaken on the basis of the highest project score. The project score was derived by deriving a weighted average of the different sub-criteria scores as follows:

- The scores for each sub-criterion are combined into a weighted average for that criterion. These weightings are based on a view of the likely importance of each impact in decision-makers eyes. In some instances monetary values are used as a proxy for decision-makers preferences.
- The criteria scores are then combined into a project score using another weighted averaging process.

The results from the appraisal of 405 individual scheme options were analysed using a spreadsheet, which carries out the mutual exclusion and ranks the schemes based on the MCA score.

The results of the mutual exclusion are summarised in Tables 8.1 and 8.2, which have a total of 265 schemes, split into two groups. Table 8.1 contains the 182 rural schemes and Table 8.2 contains the 83 possible bypass or relief roads (for this study the terms were used interchangeably).

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**Table 8.1: Preferred Options for Each Route Length ordered by Route Number – Rural Schemes**

Ref Number	Description	Road Standard	Budget Cost (May 09) €m	AADT 2025	Red Flag
N51a.1.T2	Drogheda (M1) to Slane (N2)	T2	27.240	13601	Yes
N51b.1.T3	Slane (N2) to Navan (N3)	T3	8.487	10256	Yes
N51c.1.T3	Navan (N3) to Athboy	T3	15.265	15151	Yes
N51d.1.T3	Athboy to Delvin (N52)	T3	21.358	8390	Yes
N52b.1.T2	M1 to Ardee (N2)	T2	28.450	4304	Yes
N52c.1.T2	Ardee (N2) to Kells	T2	50.519	13290	Yes
N52d.1.T2	Kells (N3) to Delvin (N51)	T2	40.000	5605	Yes
N52e.1.T1	Delvin (N51) to Mullingar (N4)	T1	60.253	14891	Yes
N52f.1.T1	Mullingar(N4) Tyrrellspass (N6)	T1	26.013	13127	Yes
N52g.1.T1	Kilbeggan (N6) to Tullamore Bypass	T1	17.586	17796	No
N52i.1.T3	Birr (N62) to Borrisokane (N65)	T3	19.070	6597	No
N52j.1.T2	Borrisokane (N65) to Nenagh Bypass	T2	20.457	13457	Yes
N53a.1.T2	Dundalk (tie-in to M1 interchange) to Northern Ireland Border	T2	11.567	8544	Yes
N54a.1.T2	Monaghan Town to Smithborough	T2	14.170	11339	No
N54a.2.T2	Smithborough to Clones	T2	7.051	6091	No
N54b.1.T3	Northern Ireland border to Butlers Bridge	T3	10.454	7296	Yes
N55a.1.T2	Bellanagh to Granard	T2	34.776	5346	No
N55c.1.T3	Edgeworthstown (N4) to Ballymahon	T3	21.102	6665	No
N55c.2.T3	Ballymahon to Glassan	T3	16.157	13387	Yes
N55c.3.T2	Glassan to Ballykeeran	T2	5.230	13924	Yes
N56a.1.T2	Coolboy to Kilmacrenan	T2	8.853	14980	Yes
N56a.2.T3	Kilmacrenan to Creeslough	T3	16.229	5838	Yes
N56a.3.T2	Creeslough to Portnablathy	T2	9.701	2732	Yes
N56b.1.T3	Dunfanaghy to Gortahork (break at Falcarragh)	T3	22.383	4085	Yes
N56b.2.T3	Gortahork to Crolly (Gweedore)	T3	13.994	4243	Yes
N56c.1.T3	Crolly to Dunglow (break at Loughanure)	T3	16.471	4255	Yes
N56d.1.T3	Dunglow to Lettermacaward	T3	21.323	4711	Yes
N56d.2.T3	Lettermacaward to Glenties	T3	24.119	2885	Yes
N56e.1.T3	Glenties to Ardara	T3	9.349	3623	Yes
N56e.2.T3	Ardara to Killybegs (R263 junction)	T3	22.514	2698	Yes
N56f.1.2.T1	Killybegs (Junction with R263) to Inver	T1	40.755	5006	No
N56f.2.T1	Inver to Mountcharles	T1	12.192	10097	No
N58a.1.T2	Bellavary to Foxford	T2	21.075	6799	Yes
N59a.1.T2	Ballysadare to Dromore West	T2	36.619	5750	Yes
N59a.2.T2	Dromore West to Ballina	T2	36.742	4878	Yes
N59b.1.T2	Ballina to Crossmolina	T2	11.688	5434	Yes
N59b.2.T3	Crossmolina to Bellacorrick	T3	25.884	2051	Yes
N59b.3.T3	Bellacorrick to Bangor	T3	20.676	2050	Yes
N59c.1.T3	Bangor to Ballycroy	T3	26.607	1756	Yes
N59c.2.T3	Ballycroy to Mallaranny	T3	24.501	1756	Yes
N59c.3.T3	Mallaranny to Newport	T3	17.093	3401	Yes
N59c.4.T3	Newport to Westport	T3	18.662	2746	Yes
N59d.1.T3	Westport to Leenaun	T3	53.611	3854	Yes
N59d.2.T3	Leenaun to Letterfrack	T3	37.945	663	Yes

Ref Number	Description	Road Standard	Budget Cost (May 09) €m	AADT 2025	Red Flag
N59d.3.T3	Letterfrack to Cliften	T3	24.771	3088	Yes
N59e.1.T3	Cliften to Maam Cross	T3	45.368	3326	Yes
N59e.2.T2	Maam Cross to Oughterard	T2	40.383	7200	Yes
N59e.3.T1	Oughterard to Moycullen	T1	56.655	14814	Yes
N59e.4.T1	Moycullen to Galway	T1	11.115	18677	Yes
N60a.1.T2	Balla to Claremorris	T2	8.356	10464	Yes
N60b.1.T2	Claremorris to Ballyhaunis	T2	29.324	3528	No
N60c.1.T2	Ballyhaunis to Ballinlough	T2	12.768	4034	No
N60c.2.T2	Ballinlough to Castlerea	T2	9.993	3915	Yes
N60d.1.T3	Castlerea to Ballymoe	T3	7.691	4613	Yes
N60d.2.T3	Ballymoe to Roscommon	T3	13.589	6690	No
N61a.1.T3	Boyle to Tusk	T3	28.387	3383	No
N61b.1.T2	Tusk to Roscommon	T2	31.030	6470	Yes
N61c.1.1.T1	Roscommon to south of Knockcroghery	T1	39.880	12962	Yes
N62a.1.T3	Athlone (N6) to Ferbane	T3	13.947	7353	Yes
N62a.2.T3	Ferbane to Birr	T3	21.737	3860	Yes
N62b.1.T2	Birr to Roscrea (N7)	T2	18.946	7178	No
N62c.1.T2	Roscrea (N7) to Templemore	T2	19.846	6206	Yes
N62d.1.T3	Templemore to Thurles	T3	12.436	6321	No
N62e.1.T2	Thurles to Horse & Jockey (N8)	T2	8.015	12737	Yes
N63a.1.T2	Longford to Lanesborough	T2	19.234	4846	No
N63b.1.T2	Lanesborough to the crossroads at Moneen	T2	5.301	5975	Yes
N63c.1.T3	Roscommon to Ballygar	T3	14.391	4263	Yes
N63c.2.1.T3	Ballygar to Moylough (with Newbridge Relief Road)	T3	23.966	6114	Yes
N63c.3.T3	Moylough to Abbey	T3	19.188	8030	Yes
N63c.4.T2	Abbey to Ardnasodan (approx tie-in to N17/N18 Gort to Tuam proposed scheme)	T2	10.772	8102	Yes
N63c.5.T3	Ardnasodan (approx tie-in to N17/N18 Gort to Tuam proposed scheme) to Turloughmore	T3	3.112	5238	No
N63c.6.T3	Turloughmore to Carnoneen (Lackagh)	T3	2.301	5238	Yes
N65a.1.T3	Borrisokane to Portumna	T3	16.077	7038	Yes
N65b.1.T3	Portumna to Killimor	T3	8.869	3877	No
N65b.2.T3	Killimor to Loughrea (N6)	T3	4.450	4793	Yes
N66a.1.T3	Gort to Kilchreest	T3	21.027	3381	Yes
N66a.2.T3	Kilchreest to Loughrea	T3	6.894	2042	Yes
N67a.1.T3	Kilcolgan to Kinvara	T3	4.767	7307	Yes
N67a.2.T3	Kinvara to Ballyvaghan	T3	31.317	2155	Yes
N67a.3.1.T3	Ballyvaghan to Lisdoonvarna (break at Corkscrew Hill)	T3	29.317	1618	Yes
N67b.1.T3	Lisdoonvarna to Ennistimon	T3	17.448	3130	Yes
N67c.1.T3	Ennistimon to Milltown Malbay	T3	17.762	2787	Yes
N67d.1.T3	Milltown Malbay to Doonbeg	T3	25.691	2891	Yes
N67d.2.T3	Doonbeg to Kilkee	T3	13.429	1254	Yes
N67e.1.T2	Kilkee to Kilrush	T2	13.285	3472	Yes
N67f.1.T3	Kilrush to Tarbert	T3	9.865	35	Yes
N68a.1.T3	Kilrush to Lissycasey	T3	4.137	4783	No

Ref Number	Description	Road Standard	Budget Cost (May 09) €m	AADT 2025	Red Flag
N68a.2.T2	Lissycasey to Ennis	T2	8.730	8526	No
N69a.1.T1	Mungret to west of Kilcornan (with bypasses of Clarina, New Kildimo & Kilcornan)	T1	64.115	13000	Yes
N69a.2.T2	Kilcornan to Askeaton Bypass	T2	7.810	9300	Yes
N69b.1.T2	Askeaton Bypass to Foynes	T2	12.380	6050	Yes
N69c.1.T3	Foynes to Loghill	T3	10.438	3200	Yes
N69c.2.T3	Loghill to Glin	T3	8.237	3150	Yes
N69c.3.T3	Glin to Tarbert	T3	8.079	2750	Yes
N69d.1.T3	Tarbert to Listowel	T3	17.855	6150	Yes
N69e.1.T2	Listowel to Tralee	T2	38.826	9700	Yes
N70a.1.T1	Tralee to Castlemaine	T1	59.232	6800	Yes
N70a.2.T2	Castlemaine To Milltown	T2	4.178	9000	Yes
N70a.3.T2	Milltown to Killorglin	T2	14.012	8400	Yes
N70b.1.T2	Killorglin to Glenbeigh	T2	26.316	11000	Yes
N70b.2.T3	Glenbeigh to Cahersiveen	T3	47.406	7300	Yes
N70c.1.T3	Cahersiveen to Waterville	T3	19.736	1400	Yes
N70d.1.T3	Waterville to Caherdaniel	T3	31.682	2200	Yes
N70d.2.T3	Caherdaniel to Castlecove	T3	11.846	2200	Yes
N70d.3.T3	Castlecove to Sneem	T3	26.510	2200	Yes
N70e.1.1.T3	Sneem to Kenmare (without major Blackwater Bridge)	T3	47.180	2900	Yes
N71b.1.T1 D	N28 to existing N71 Dualling	T1 D	12.885	24804	No
N71b.2.T2 D	Overbridge west of Ballynoe to Roundabout at Halfway	T2 D	29.792	20455	No
N71c.1.T1	Innishannon to Bandon	T1	7.531	13558	No
N71d.1.T2	Bandon to Ballinascarty	T2	23.596	9658	No
N71e.1.T2	Clonakilty to Lissavard	T2	8.896	10416	Yes
N71e.2.T2	Lissavard to Ross Carbery	T2	10.798	8930	No
N71e.3.T2	Ross Carbery to Connonagh (tie in to climbing lane outside of Connonagh)	T2	6.005	4632	No
N71e.4.T2	Connonagh to Leap	T2	2.640	4630	No
N71e.5.T2	Leap to Skibbereen	T2	16.050	8982	Yes
N71f.1.T2	Skibbereen to Aghadown	T2	26.476	5133	No
N71f.2.T2	Ballydehob to Junction with R586	T2	35.154	6007	No
N71g.1.T3	Bantry to Ballylicky	T3	5.146	3326	No
N71g.2.T3	Ballylicky to Glengarriff	T3	15.375	2522	Yes
N71g.3.T3	Glengarriff to Kenmare	T3	49.440	1040	Yes
N71h.1.T3	Kenmare to Killarney	T3	60.346	3890	Yes
N72a.1.T2	Junction with N25 (Dungarvan) to Cappoquin	T2	28.924	8710	Yes
N72b.1.T2	Lismore to Fermoy (with bypass of bad hairpin at Tallowbridge)	T2	57.172	6843	Yes
N72c.1.T3	Fermoy to Ballyhooly	T3	10.898	2612	Yes
N72c.2.T3	Ballyhooly to Castletownroche	T3	7.822	2591	Yes
N72c.3.T3	Castletownroche to Junction with N73	T3	16.236	2630	Yes
N72c.4.T2	Junction with N73 to Mallow	T2	7.902	12160	Yes
N72d.1.T2	Mallow to Dromagh	T2	44.842	8589	Yes
N72d.2.T2	Lislehane to Rathmore	T2	16.389	4526	Yes
N72d.3.T2	Church View to Barraduff	T2	21.467	5400	Yes
N72d.4.T2	Barraduff to Junction with N22	T2	12.612	4035	Yes
N72e.1.T2	Beaufort to Killorglin	T2	22.374	12579	Yes

Ref Number	Description	Road Standard	Budget Cost (May 09) €m	AADT 2025	Red Flag
N73a.1.T2	Junction with N72 to Kildorrery (incorporating Farahy Relief Road)	T2	45.400	8605	Yes
N73b.1.T2	Kildorrery to Glennahulla	T2	3.833	6916	Yes
N73b.2.T2	Glennahulla to Michelstown Relief Road	T2	10.282	6923	Yes
N74a.1.T3	Tipperary to Golden	T3	16.319	6710	Yes
N74b.1.T2	Golden to Cashel (ties in to N74 Link Road at Tipperary Road Roundabout)	T2	11.362	5270	Yes
N75a.1.T2	Thurles to M8/N8 Interchange	T2	7.799	8939	Yes
N76a.1.T2	Kilkenny Ring Road to Callan Bypass	T2	13.728	9193	Yes
N76a.2.T2	Callan Bypass (R692 junction) to Ninemilehouse	T2	12.153	5626	No
N76a.3.T2	Ninemilehouse to Clonmel (junction with N24)	T2	23.365	5910	Yes
N77a.1.T1	Kilkenny Ring Road Extension to the junction with the N78	T1	15.027	21587	Yes
N77a.2.T2	Junction with the N78 to Durrow	T2	22.923	17022	Yes
N78a.1.T2	Kilcullen to Rock	T2	13.110	10703	No
N78b.1.T2	Athy to N80	T2	10.839	5994	Yes
N78c.1.T3	N80 to Newtown	T3	8.494	1620	No
N78c.2.T3	Coolbaun to Castlecomer	T3	2.492	3463	Yes
N78d.1.T3	Castlecomer to N77 near Kilkenny	T3	14.428	5516	Yes
N80a.1.T1	Woodfield to Clara	T1	6.951	18608	No
N80b.1.T1	Killeigh to Mountmellick	T1	58.416	16722	Yes
N80b.2.T1	Mountmellick to Portlaoise (M7)	T1	19.223	19058	No
N80c.1.T2	Portlaoise (M7) to Stradbally	T2	7.194	10657	No
N80c.2.T2	Stradbally to N78	T2	17.315	5155	Yes
N80d.1.T2	N78 to Carlow	T2	22.436	7127	Yes
N80e.1.T2	Carlow to Ballon	T2	6.241	9448	No
N80f.1.T2	Ballon to Bunclody (Kildavin)	T2	12.684	11793	Yes
N81d.1.T1	Blessington to Hollywood Cross	T1	43.912	8028	Yes
N81d.2.T3	Hollywood Cross to Baltinglass	T3	17.034	5442	Yes
N81e.1.T3	Baltinglass to Tullow	T3	21.020	2279	Yes
N81f.1.T3	Tullow to N80 junction near Ballon	T3	7.337	2747	Yes
N83a.1.T3	Knock (N17) to Tooreen	T3	9.761	585	Yes
N83a.2.T3	Tooreen to Ballyhaunis (proposed N60/N83 Ballyhaunis Outer Bypass)	T3	5.504	550	Yes
N83b.1.T3	Ballyhaunis (proposed N60/N83 Ballyhaunis Outer Bypass) to Cloonfad	T3	9.781	997	Yes
N83b.2.T3	Cloonfad to Dunmore	T3	9.506	1641	Yes
N83b.3.T3	Dunmore to Tuam	T3	14.320	3300	Yes
N84a.1.T2	N6 Galway City Outer Bypass to Cloonboo	T2	10.539	15396	Yes
N84a.2.T2	Cloonboo to Headford	T2	19.968	7925	Yes
N84a.3.T3	Headford to Shrule	T3	8.173	3356	Yes
N84a.4.T3	Shrule to Kilmaine	T3	8.564	3275	Yes
N84a.5.T3	Kilmaine to Ballinrobe	T3	8.322	4259	Yes
N84b.1.T3	Ballinrobe to Partry	T3	5.226	5715	Yes
N84b.2.T2	South of Ballyhean (Creevagh) to Castlebar	T2	10.900	3513	No

Ref Number	Description	Road Standard	Budget Cost (May 09) €m	AADT 2025	Red Flag
<b>N85a.1.T2</b>	Ennis to Inagh	T2	22.745	7033	<b>Yes</b>
<b>N85a.2.T2</b>	Inagh to Ennistimon	T2	24.069	8018	<b>Yes</b>
<b>N86a.1.T3</b>	Blennerville to Camp	T3	17.077	5750	<b>Yes</b>
<b>N86a.2.T3</b>	Camp to Anascaul	T3	24.447	1450	<b>Yes</b>
<b>N86a.3.T3</b>	Anascaul to Lispole	T3	14.789	2300	<b>No</b>
<b>N86a.4.T3</b>	Lispole to Dingle	T3	10.682	2600	<b>No</b>
<b>N87a.1.T3</b>	Belturbet to Ballyconnell	T3	10.132	3024	<b>Yes</b>
<b>N87b.1.T3</b>	Ballyconnell to Bawnboy	T3	7.793	2094	<b>No</b>
<b>N87b.2.T3</b>	Bawnboy to Swanlibar	T3	14.657	1380	<b>No</b>
<b>N87b.3.T3</b>	Swanlibar to N.I. Border	T3	1.910	128	<b>No</b>

**Table 8.2: Preferred Options Ordered by Route Number – Bypass Schemes**

Ref Number	Description	Road Standard	Budget Cost (May 09) €m	AADT 2025	Red Flag
N51r.1.T2	Slane Relief Road	T2	11.347	6153	Yes
N51r.2.T2	Athboy Relief Road	T2	14.433	2403	Yes
N52r.1.T2	Ardee Relief Road	T2	17.653	3061	No
N52r.2.T2	Carlanstown Relief Road	T2	4.635	6545	Yes
N52r.3.T2	Clonmellon Relief Road	T2	3.981	4719	Yes
N52r.4.T2	Delvin Relief Road	T2	8.354	6656	Yes
N52r.5.T2	Kilcormac Relief Road	T2	9.492	6067	No
N54r.1.T1	Monaghan Town Relief Road (south)	T1	18.406	1874	No
N54r.2.T2	Smithborough Relief Road	T2	10.762	6091	No
N54r.3.T2	Clones Relief Road	T2	10.530	4005	Yes
N55r.1.T2	Bellanagh Relief Road	T2	6.314	8612	No
N55r.2.T2	Granard Relief Road	T2	8.115	3345	No
N55r.3.T1	Edgworthstown Relief Road	T1	4.740	2460	No
N55r.4.T3	Ballymahon Relief Road	T3	5.811	6603	No
N55r.5.T1	Glassan Relief Road	T1	7.504	13934	Yes
N55r.6.T1	Ballykeeran Relief Road	T1	6.327	13941	Yes
N56r.1.T2	Creelough Relief Road	T2	7.213	3844	Yes
N56r.2.T2	Dunglow Relief Road	T2	5.353	1662	Yes
N58r.1.T2	Foxford Relief Road (West)	T2	6.245	5126	Yes
N59r.1.2.T2	Ballina Relief Road (south - connecting N26)	T2	40.987	4806	Yes
N59r.3.T2	Westport Relief Road	T2	22.113	2228	Yes
N59r.4.T1	Oughterard Relief Road	T1	22.007	4747	Yes
N59r.5.T1	Moycullen Relief Road	T1	16.435	12396	Yes
N59r.6.T3 D	Oughterard to Galway Relief Road	T3 D	105.688	15709	Yes
N60r.1.T2	Castlerea Relief Road	T2	10.493	2048	Yes
N60r.2.T2	Ballymoe Relief Road	T2	6.493	4623	Yes
N61r.1.T2	Boyle Relief Road N61 Boyle Town Bypass – NRA scheme (Preliminary Design Stage)	T2	13.192	5473	No
N61r.2.T2	Roscommon Relief Road	T2	36.207	14192	Yes
N62r.1.T2	Ferbane Relief Road	T2	9.047	7480	Yes
N62r.2.T1	Birr Relief Road	T1	16.992	7732	No
N62r.3.T1	Roscrea Relief Road	T1	8.879	5064	No
N62r.4.T1	Templemore Relief Road	T1	22.770	2800	No
N62r.5.T1	Thurles Relief Road	T1	30.544	696	Yes
N63r.1.T1	Longford Relief Road	T1	15.092	2466	Yes
N63r.2.T2	Killashee Relief Road	T2	3.929	4930	No
N63r.3.T2	Athleague Relief Road	T2	7.776	5792	Yes
N63r.4.T2	Newbridge Relief Road	T2	5.023	4762	No
N63r.5.T3	Mountbellew Relief Road	T3	7.129	42	Yes
N63r.6.T3	Abbey Relief Road	T3	6.765	5135	Yes
N65r.1.T3	Borrisokane Relief Road	T3	10.973	8246	Yes
N65r.2.T2	Portumna Relief Road	T2	7.187	6062	No
N66r.1.T2	Loughrea Relief Road (N66 Gort Link)	T2	5.961	969	No
N69r.1.T2	Listowel Relief Road	T2	12.353	4100	Yes
N70r.1.T2	Castlemaine Relief Road	T2	10.462	9500	Yes
N70r.2.T2	Milltown Relief Road	T2	8.318	8400	No
N70r.3.T2	Castlemaine/Milltown Relief Road	T2	19.494	8400	Yes



Ref Number	Description	Road Standard	Budget Cost (May 09) €m	AADT 2025	Red Flag
N70r.4.T2	Killorglin Relief Road	T2	21.232	8700	Yes
N71r.1.T1	Innishannon Relief Road	T1	8.911	14357	No
N71r.2.T2	Clonakilty Relief Road	T2	19.092	1716	Yes
N71r.3.T2	Killarney Relief Road	T2	12.196	674	Yes
N72r.1.1.T2	Cappoquin Relief Road	T2	13.508	6650	Yes
N72r.3.T3	Tallowbridge Relief Road	T3	6.352	1176	Yes
N72r.4.T3	Castletownroche Relief Road	T3	9.594	3401	Yes
N72r.5.T2	Mallow Relief Road	T2	16.231	3883	Yes
N72r.6.T2	Dromagh Relief Road	T2	13.137	4986	Yes
N72r.7.T2	Rathmore Relief Road	T2	15.283	1607	Yes
N72r.8.T3	Barraduff Relief Road	T3	12.977	4448	Yes
N72r.9.T2	Killorglin East Relief Road	T2	11.491	7945	Yes
N74r.1.T2	Tipperary Relief Road	T2	17.395	5191	No
N74r.2.T3	Golden Relief Road	T3	4.276	5303	Yes
N77r.1.T2	Ballyragget Relief Road	T2	6.973	13148	Yes
N78r.1.T1	Athy Relief Road	T1	21.250	3782	Yes
N78r.2.T2	Castlecomer Relief Road	T2	20.301	2988	Yes
N80r.1.T2	Clara Relief Road	T2	15.440	10084	No
N80r.2.T2	Killeigh Relief Road	T2	5.404	15977	No
N80r.3.T1	Mountmellick Relief Road	T1	15.015	18389	Yes
N80r.4.T2	Portlaoise Northern Relief Road	T2	19.025	1652	No
N80r.5.T2	Stradbally Relief Road	T2	20.208	5609	Yes
N80r.6.T2	Ardless and Ballickmoyler Relief Road	T2	12.554	4892	Yes
N80r.7.T1	Ballon Relief Road	T1	12.621	10147	Yes
N80r.8.T2	Bunclody Relief Road	T2	14.064	4078	Yes
N81r.1.T2	Baltinglass Relief Road	T2	16.116	1192	Yes
N81r.2.T3	Rathvilly Relief Road	T3	5.305	2408	Yes
N81r.3.T2	Tullow Relief Road	T2	17.379	4381	Yes
N83r.1.T2	N60 / N83 Ballyhaunis Outer Bypass	T2	19.145	1107	Yes
N83r.2.T2	Dunmore Relief Road	T2	5.162	318	Yes
N84r.1.T1	Cloonboo Relief Road	T1	10.858	190	Yes
N84r.2.T2	Headford Relief Road	T2	10.900	5034	Yes
N84r.3.T3	Shrulle Relief Road	T3	6.251	3770	Yes
N84r.4.T3	Kilmaine Relief Road	T3	2.927	4410	No
N84r.5.T2	Ballinrobe Relief Road East	T2	19.630	1144	No
N84r.6.T2	Partry Relief Road	T2	4.997	3501	Yes
N86r.1.T2	Blennerville Relief Road (to connect to N70)	T2	17.609	5300	Yes

## 8.4 RECOMMENDATIONS

It should be noted that a project whose average score is 4.0 has an overall impact of zero, despite the expenditure of capital on construction and maintenance. This clearly represents poor value for money.

With a weighted MCA it is not possible to identify a definitive threshold above which value for money is achieved. It is however estimated that an overall score in excess of 5.2 is needed to achieve value for money, based on an analysis of typical MCA scores corresponding with different levels of economic score.

Therefore the rural scheme options recommended for the Priority 1 basket of schemes in the National Secondary Road Network investment programme are those schemes where the MCA score is greater than 5.2 as these schemes represent value for money to the public sector. The remainder of the rural scheme options will be part of the Priority 2 basket of schemes.

### 8.4.1 Priority 1 Rural Schemes

Of the 182 rural schemes, 65 schemes have an MCA score greater than 5.2. The 16 schemes listed in Table 8.3 in ascending order of route number are the Priority 1 Schemes identified for the North Region.

**Table 8.3: Recommended Priority 1 Schemes in North Region Ordered by Route Number**

Ref Number	Scheme Name	Road Standard	Budget Cost (May 09) €m	Red Flag
N52d.1.T2	Kells (N3) to Delvin (N51)	T2	40.000	Yes
N52e.1.T1	Delvin (N51) to Mullingar (N4)	T1	60.253	Yes
N52f.1.T1	Mullingar(N4) Tyrrellspass (N6)	T1	26.013	Yes
N52g.1.T1	Kilbeggan (N6) to Tullamore Bypass	T1	17.586	No
N55a.1.T2	Bellanagh to Granard	T2	34.776	No
N55c.2.T3	Ballymahon to Glassan	T3	16.157	Yes
N55c.3.T2	Glassan to Ballykeeran	T2	5.230	Yes
N56a.1.T2	Coolboy to Kilmacrenan	T2	8.853	Yes
N56a.2.T3	Kilmacrenan to Creeslough	T3	16.229	Yes
N56c.1.T3	Crolly to Dunglow (break at Loughanure)	T3	16.471	Yes
N56d.1.T3	Dunglow to Lettermacaward	T3	21.323	Yes
N56d.2.T3	Lettermacaward to Glenties	T3	24.119	Yes
N56f.1.2.T1	Killybegs (Junction with R263) to Inver	T1	40.755	No
N56f.2.T1	Inver to Mountcharles	T1	12.192	No
N59a.1.T2	Ballysadare to Dromore West	T2	36.619	Yes
N80a.1.T1	Woodfield to Clara	T1	6.951	No

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dations**Cycling &  
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### 8.4.2 Possible Relief Road Schemes

Of the 83 relief road schemes identified, there are 50 schemes with an MCA score greater than 5.2, with an estimated total cost of implementation of €0.683 billion.

These 50 bypass schemes are recommended for inclusion in the major projects programme of the NRA. The management and prioritisation of that programme is beyond the remit of this study; different budget constraints and different relative weighting of impacts may be

appropriate. Thus it does not follow that all such schemes would automatically be Priority 1 within that programme. Like all proposed road improvements, these would be subject to more detailed analysis as the scheme progresses.

The 10 bypass schemes in the North Region are listed in Table 8.4 in order of Route Number.

**Table 8.4: Possible Relief Roads for Consideration as Major Projects in North Region – Ordered by Route Number**

Ref Number	Scheme Name	Road Standard	Budget Cost (May 09) €m	Red Flag
<b>N52r.3.T2</b>	Clonmellon Relief Road	T2	3.981	<b>Yes</b>
<b>N52r.4.T2</b>	Delvin Relief Road	T2	8.354	<b>Yes</b>
<b>N55r.1.T2</b>	Bellanagh Relief Road	T2	6.314	<b>No</b>
<b>N55r.2.T2</b>	Granard Relief Road	T2	8.115	<b>No</b>
<b>N55r.4.T3</b>	Ballymahon Relief Road	T3	5.811	<b>No</b>
<b>N55r.5.T1</b>	Glassan Relief Road	T1	7.504	<b>Yes</b>
<b>N55r.6.T1</b>	Ballykeeran Relief Road	T1	6.327	<b>Yes</b>
<b>N56r.1.T2</b>	Creeslough Relief Road	T2	7.213	<b>Yes</b>
<b>N56r.2.T2</b>	Dunglow Relief Road	T2	5.353	<b>Yes</b>
<b>N63r.2.T2</b>	Killashee Relief Road	T2	3.929	<b>No</b>

### 8.4.3 Priority 2 Schemes

Those schemes with an MCA score less than or equal to 5.2 do not represent value for money under this analysis, which assumes an opening year of 2015. These Priority 2 schemes are therefore not recommended for immediate entry to the programme of improvements being taken forward by the NRA.

Over time, the economic case for taking forward these schemes will improve, due to a combination of deteriorating condition of the present road, rising traffic levels, and rising values of time with economic growth. They should therefore be seen as longer-term improvements.

In the shorter term it is recommended that the NRA consider:

- more localised remedial measures to address existing major deficiencies (such as sections with a history of road accidents)
- localised improvements to address deficiencies in width or alignment, as a possible condition of NRA approval for appropriate development, as part of a strategy for responding to development proposals along NSRs that distinguishes urban and rural locations
- Safeguarding from development any proposed alignments where land-take would be required

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**Table 8.5: Priority 2 Schemes in North Region Ordered by Route Number**

Ref Number	Description	Road Standard	Budget Cost (May 09) €m	Red Flag
N51d.1.T3	Athboy to Delvin (N52)	T3	21.358	Yes
N54a.1.T2	Monaghan Town to Smithborough	T2	14.170	No
N54a.2.T2	Smithborough to Clones	T2	7.051	No
N54b.1.T3	Northern Ireland border to Butlers Bridge	T3	10.454	Yes
N55c.1.T3	Edgeworthstown (N4) to Ballymahon	T3	21.102	No
N56a.3.T2	Creelough to Portnablathy	T2	9.701	Yes
N56b.1.T3	Dunfanaghy to Gortahork (break at Falcarragh)	T3	22.383	Yes
N56b.2.T3	Gortahork to Crolly (Gweedore)	T3	13.994	Yes
N56e.1.T3	Glenties to Ardara	T3	9.349	Yes
N56e.2.T3	Ardara to Killybegs (R263 junction)	T3	22.514	Yes
N59a.2.T2	Dromore West to Ballina	T2	36.742	Yes
N62a.1.T3	Athlone (N6) to Ferbane	T3	13.947	Yes
N63a.1.T2	Longford to Lanesborough	T2	19.234	No
N87a.1.T3	Belturbet to Ballyconnell	T3	10.132	Yes
N87b.1.T3	Ballyconnell to Bawnboy	T3	7.793	No
N87b.2.T3	Bawnboy to Swanlibar	T3	14.657	No
N87b.3.T3	Swanlibar to N.I. Border	T3	1.910	No

## 8.5 CONCLUSION – EMERGING NSR PROGRAMME

### 8.5.1 Programme Size

The overall size of the recommended National Secondary Road Priority 1 investment programme comprises 65 rural schemes with an estimated cost of €1.558 billion excluding VAT.

### 8.5.2 Programme Risk

A risk workshop was held which identified and quantified risks associated with the NSR Investment Programme. A simulation model was carried out and quantified to produce a range of values with commensurate % levels of confidence, known as probability levels or P values. These P values identify costs in addition to the estimated cost of €1.558 billion for the Priority 1 Schemes. The summary outputs are:

- P50 output value is €199.0m
- P80 output value €263.7m
- P90 output value is €299.2m.

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8.5.3 Geographical Distribution of Programme

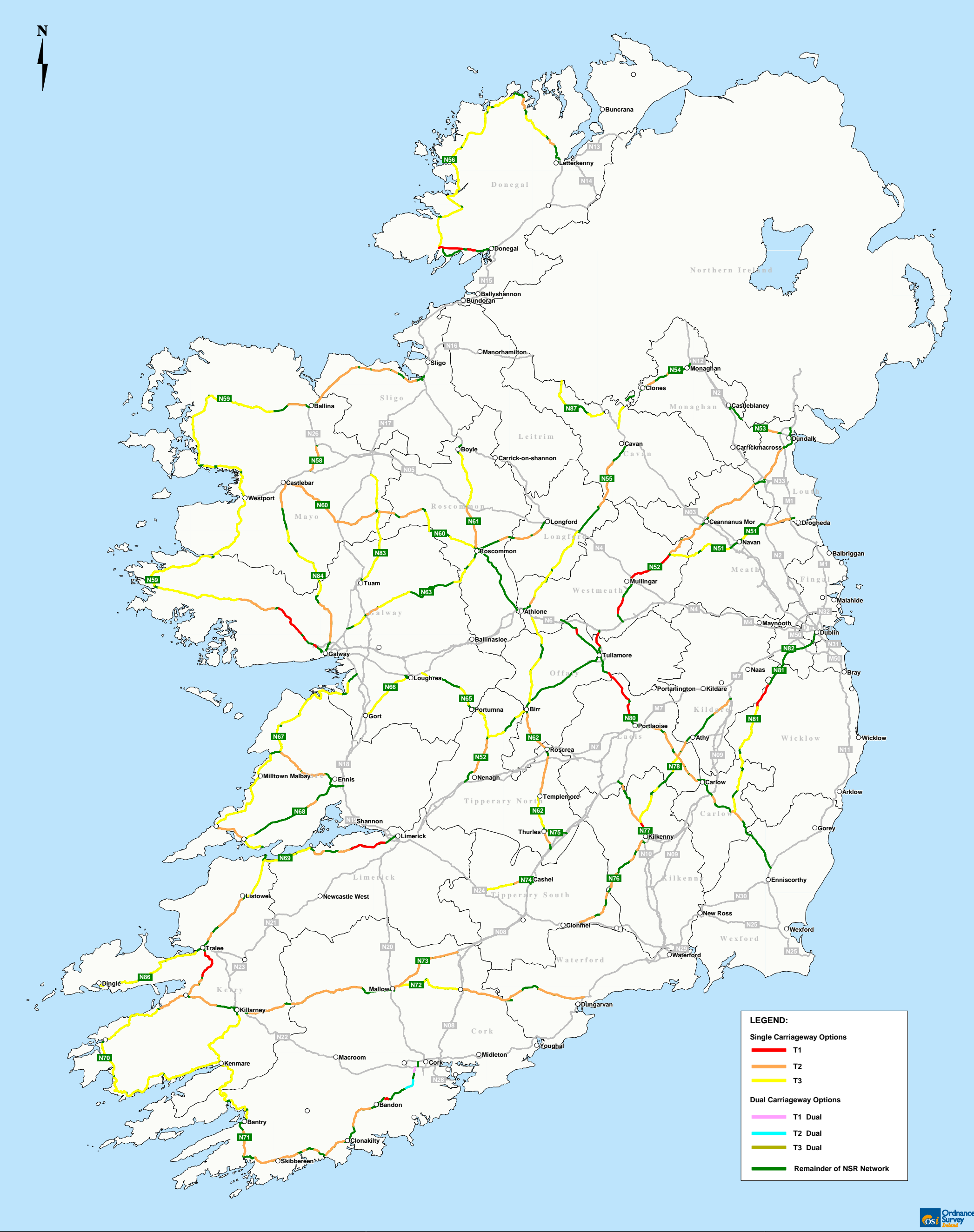
Figure 8.1 maps all of the 182 rural scheme options on the NSR network.



Figure 8.2 maps all of the 182 rural scheme options under three categories:

- Those with an MCA score greater than 5.2, that comprise the Priority 1 programme
- Those with an MCA score equal to or less than 5.2, that comprise the Priority 2 programme
- The remainder of the NSR network, consisting of urban links, and those links which have recently been improved and were therefore not considered for further improvement.

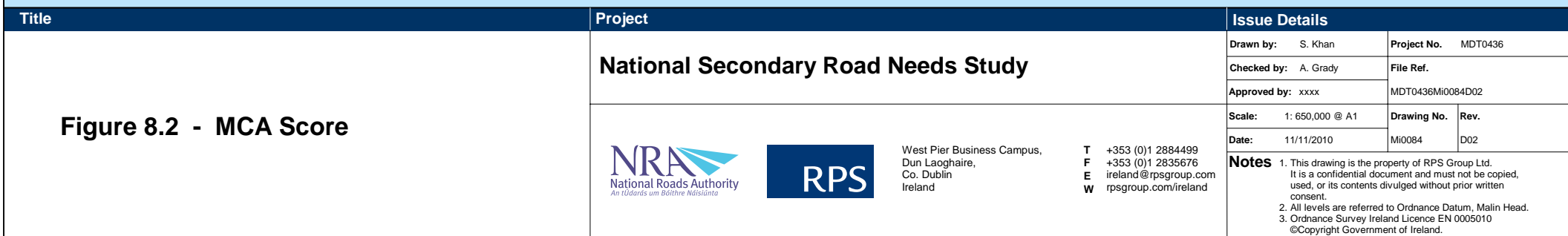
The Priority 1 programme - all of the schemes with an MCA score greater than 5.2 only - are indicated on Figure 8.3, with those schemes with an MCA score less than or equal to 5.2 mapped on Figure 8.4

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Title	Project	Issue Details			
Figure 8.1 - National Secondary Roads Options	National Secondary Road Needs Study	Drawn by: S. Khan	Project No. MDT0436		
		Checked by: A. Grady	File Ref.		
	Approved by: xxx	MDT0436M0087D03			
	<div><div></div><div>West Pier Business Campus, Dun Laoghaire, Co. Dublin Ireland</div><div>T +353 (0)1 2884499 F +353 (0)1 2835676 E ireland@rpsgroup.com W rpsgroup.com/ireland</div></div>	Scale: 1: 650,000 @ A1	Drawing No. M0087	Rev. D03	
		Date: 11/11/2010	Notes		
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Title	Project	Issue Details			
<div>Figure 8.3</div> <div>Priority 1 - MCA Score greater than 5.2</div>	National Secondary Road Needs Study	Drawn by: S. Khan		Project No. MDT0436	
		Checked by: A. Grady		File Ref.	
		Approved by: xxxx		MDT0436Mi0083D02	
	<div><div><div><div>NRA</div><div>National Roads Authority</div><div>An Údarás um Béithre Náisiúnta</div></div><div><div>RPS</div></div><div>West Pier Business Campus, Dun Laoghaire, Co. Dublin Ireland</div><div>T +353 (0)1 2884499 F +353 (0)1 2835676 E ireland@rpsgroup.com W rpsgroup.com/ireland</div></div></div>	Scale: 1: 650,000 @ A1		Drawing No.	Rev.
		Date: 11/11/2010		Mi0083	D02
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Title	Project	Issue Details			
Figure 8.4  Priority 2 - MCA Score less than or equal to 5.2	National Secondary Road Needs Study	Drawn by: S. Khan		Project No. MDT0436	
		Checked by: A. Grady		File Ref.	
	Approved by: xxxx		MDT0436Mi0089D01		
	Scale: 1: 650,000 @ A1		Drawing No.	Rev.	
	Date: 11/11/2010		Mi0089	D01	
	<div><div><div><div>NRA National Roads Authority <small>An Údarás um Boilíní Náisiúnta</small></div></div><div><div>RPS</div></div><div>West Pier Business Campus, Dun Laoghaire, Co. Dublin Ireland</div><div>T +353 (0)1 2884499 F +353 (0)1 2835676 E ireland@rpsgroup.com W rpsgroup.com/ireland</div></div></div>	<div>Notes</div> <div>1. This drawing is the property of RPS Group Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent.</div> <div>2. All levels are referred to Ordnance Datum, Malin Head.</div> <div>3. Ordnance Survey Ireland Licence EN 0005010 ©Copyright Government of Ireland.</div>			

## 9 APPRAISAL OF CYCLING & WALKING

### 9.1 POLICY CONTEXT

In response to government “Smarter Travel” policy to increase the amount of walking and cycling in Ireland, the NRA asked the National Secondary Road (NSR) Needs Study to considering the merits of rural NSR improvement scheme options that would include a footpath and cycleway.

This analysis was carried out as an add-on to the initial identification and appraisal of NSR improvement schemes, and builds on the conclusions from the previous chapter.

### 9.2 SCHEMES TO BE APPRAISED

It was not considered necessary to re-appraise the full list of 405 scheme options that had been identified. This was for three reasons:

- The Type 1 single carriageway standard includes a wide verge within which a footpath and cycleway could easily be included. Since inclusion of a footpath and cycleway would not significantly increase the cost of such schemes (if designed in from the beginning), the decision as to whether to include such a facility was considered to be a policy / design issue for the NRA that did not require detailed appraisal. The same was taken to apply to dual-carriageway schemes.
- Where the previous appraisal had included more than one upgrade option for the same stretch of National Secondary Road, the marginal costs and benefits of footpath and cycleway provision were considered to be fairly similar, whether the proposed standard was Type 2 or Type 3. Therefore the decision on appropriate road standard and the decision on whether to provide a footpath and cycleway can be taken as independent decisions. It follows that appraisal of footpath and cycleway provision can be applied to the preferred standard emerging from the previous analysis.
- Some of the schemes identified are bypasses, with the function of removing through traffic from towns and villages. Such schemes of themselves improve conditions for walkers and cyclists within the bypassed settlement, which is likely to be an origin or destination of many of the local walking and cycling trips. They offer environmental and safety benefits relating to the separation of the main traffic flows from the activity within the town or village. It was therefore considered that it would not be appropriate to provide for walking and cycling along such bypass schemes.

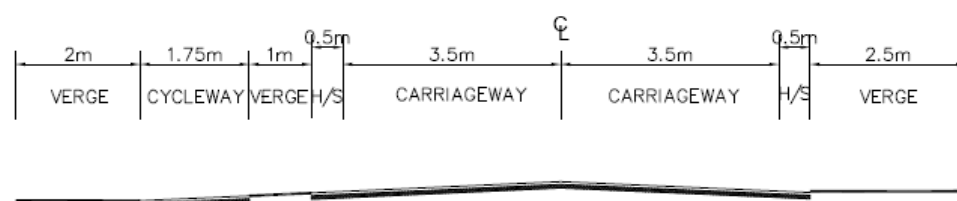
Appraisal of footpath and cycleway schemes was therefore restricted to the preferred options for non-bypass single-carriageway schemes to Type 2 or Type 3 standard.

### 9.3 FOOTPATH & CYCLEWAY STANDARD

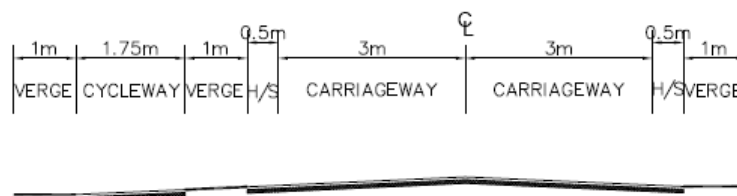
The study considered the type of footpath and cycleway provision likely to be appropriate for rural areas. In a few locations there will be a disused railway track or quiet lane running parallel to the NSR. In these cases, an off-road footpath and cycle trail may be able to be constructed along this parallel alignment, offering a more attractive route for walkers and cyclists at a low cost.

However, in the majority of locations, the design option likely to offer best value for money was considered to be a two-way footpath and cycleway on one side of the carriageway and separated from it by a grass verge.

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**Figure 9.1: Type 2 and 3 Single Carriageway with Cycleway Cross Sections**

Type 2 Single Carriageway With Cycleway



Type 3 Single Carriageway With Cycleway

**Figure 9.1**

Type 2 and 3 Single Carriageway with Cycleway Cross Sections



This type of provision was therefore assumed for appraisal purposes; other options might be considered at scheme design stage.

Having regard to likely additional land requirements for such a footpath and cycleway, and drawing on cost information from current schemes, the estimated marginal cost of provision was considered to be of the order of €235,000 per km.

For simplicity, the option of footpath and cycleway provision was taken to apply to the full length of each scheme option. Clearly there are cases where an improvement scheme (which might be of considerable length) has an urban area at one end with correspondingly higher walking and cycling demand for a part of the length of the scheme. Options of partial provision would be appropriately considered at scheme design stage.

9.4 APPRAISAL CRITERIA

The application of the appraisal framework to reflect cycling and walking impacts was as follows:

**Environment** – no change. It was considered that the environmental impacts from changes in traffic level from mode-switching to cycling and walking are negligible at the level of accuracy of a strategic study such as this.

**Safety** – the change in accident rates for existing and new cyclists and walkers is included in the mortality rates that are part of a calculation of health benefits. These health benefits are monetised, and included under the Economy criterion, so in order to minimise double counting it was considered appropriate not to alter the accident calculation.

There is a potential additional benefit to do with fear of accidents, which it is appropriate to take account of under the “security” heading of the appraisal framework. There are no monetised values available for this. For simplicity, each scheme was scored as 7.0 for options where a facility is provided and 4.0 where no facility is provided. This subcriterion was given a small but non-zero weight in the overall appraisal calculation.

**Economy** - five economic impacts of footpath and cycleway provision are identified in the WebTAG guidance - health benefits, reduction in absenteeism, improvements to journey ambience, de-congestion benefits and journey time savings to walkers and cyclists. De-congestion benefits were not modelled, being considered to be negligible within the accuracy of the traffic model. The other four impacts were taken account of in a cycling and walking appraisal spreadsheet developed for the purpose.

There may be an unavoidable element of double counting here, as journey ambience is likely to include some element of reduction in perceived danger. Journey ambience is derived from the “value” that survey respondents gave cycle facilities (compared to no facilities) and people often cite “safety” as a problem that cycle facilities might address (so they might reasonably be taking this into account in their valuation).

Provision of walking and cycling facilities affects both the cost and benefit elements of the Transport Economic Efficiency of the scheme.

**Accessibility** – under the heading of “vulnerable groups” there was considered to be a benefit from provision of a footpath and cycleway, accruing to non-car-available people who live within walking/cycling distance of a settlement. For simplicity, each with-cycleway scheme option was scored as 7.0 under this criterion if it served a town (taken to be a settlement of 1500+ population) and 5.0 otherwise. This sub-criterion is not assessed for options without cycling and walking facilities and is therefore scored neutral (4.0).

**Integration** – an additional question was introduced under “Transport Policy Integration” according to whether the route section in question is identified in the National Cycle Policy.

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This sub-criterion then has 3 questions, so a positive response to each question increases the MCA score by 1.0.

**Table 9.1: Example of Comparative Appraisal with and without Footpath / Cycleway**

		Initial Appraisal Score	With-cycleway Appraisal Score	
<b>Environment</b>	<b>Air Quality and climate</b>	4.6	4.6	
	<b>Noise</b>	4.0	4.0	
	<b>Landscape</b>	4.0	4.0	
	<b>Biodiversity</b>	3.0	3.0	
	<b>Cultural Heritage</b>	3.0	3.0	
	<b>Landuse</b>	4.0	4.0	
	<b>Water</b>	4.0	4.0	
<b>Safety</b>	<b>Accident reduction</b>	4.03	4.03	
	<b>Security</b>	4.0	7.0	(1)
<b>Economy</b>	<b>Transport Efficiency and Effectiveness</b>	5.4	5.2	(2)
	<b>Wider Impacts</b>	5.0	5.0	
	<b>Funding</b>	4.0	4.0	
<b>Accessibility &amp; Social Inclusion</b>	<b>Vulnerable Groups</b>	4.0	5.0	(3)
	<b>Deprived geographic areas</b>	4.9	4.9	
<b>Integration</b>	<b>Transport Interchange</b>	5.0	6.0	(4)
	<b>Land-Use Policy</b>	7.0	7.0	
	<b>Geographical</b>	4.1	4.1	
	<b>Other Govt Policies</b>	4.05	4.05	

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Notes:

- 1) Security score is an automatic 7.0 for all with-cycleway options
- 2) TEE score may go down as well as up, depending on the balance of costs and benefits
- 3) Score for a scheme where the facility does not provide access to a settlement of 1500+ population
- 4) The transport integration subcriterion has three questions, one of which refers to integration with the National Cycle Policy. So any scheme with no cycle facilities has a score of 4, 5, or 6; any scheme with such facilities has a score of 5, 6, or 7 under this heading

Greyed-out cells indicate an automatic nominal score of 4 for sub-criteria which are considered not to be of use in differentiating between schemes.

All numbers are illustrative.

9.5 MODELLING DEMAND FOR WALKING & CYCLING

The calculation of economic benefit requires quantification of the numbers of walkers and cyclists likely to benefit from provision of facilities.

9.5.1 Initial approach

The approach initially adopted for estimating demand was based on Census POWCAR data, being the best existing data source on levels of cycling and how these vary across Ireland. The POWCAR dataset covers cycling for commuting purposes only.

A high-level strategic cycling model was constructed, allocating POWCAR cycle trips to NSR corridors depending on whether the corridor could be said to connect the origin and destination Enumeration Districts (EDs).

Use of NSRs for commuter cycling was then factored up by a series of factors in order to estimate use for cycling for all trip purposes combined.

In order to validate this approach, a more detailed model was constructed of the N86 corridor, dividing EDs into smaller zones, linking each zone to the road network, and assigning each POWCAR cycling trip to the shortest route.

This exercise indicated that the high-level approach was not suitable for scheme appraisal purposes. In the high-level approach, the N86 corridor came out as having relatively high levels of cycling. But looked at in greater geographical detail, it became clear that there are significant amounts of cycling in and around Tralee, but that little of it uses the N86, and cycling levels along most of the route are low.

An alternative approach was therefore adopted.

9.5.2 Survey-based approach

9.5.2.1 Surveys

The aim of the surveys was to collect data which could be used to derive a demand model for cycling and walking and also to estimate the “value” that people attach to such facilities (this was used in the calculations of improvements to journey ambience). Data was collected from three different locations, two of which had existing walking and cycling facilities similar to the type of facilities proposed. A questionnaire was used to carry out both household surveys and intercept surveys on the walking and cycling facilities themselves. The questionnaire asked about:

- Household cycling and walking trips on the facility if one existed. In the case where a facility did not exist, more general questions about walking and cycling trips were asked and also whether these would change if a facility did exist
- How the household’s walking and cycling trip making behaviour has or might change in response to the new facility
- The respondent’s propensity to walk and cycle for different types of trip
- For every respondent who stated that they do or would gain a benefit from the facility, their maximum willingness to pay, per trip, for the use of the facility. This was immediately followed by a question about their certainty about the value they have given
- Personal and socio economic details of the respondent

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An analysis of the socio-economic details of the 607 respondents showed that they represented a reasonable cross section of the population, apart from under representation from the extreme ends of the social class spectrum and a slight under-representation of non-car owners. Outlying responses with very large numbers of trips or unreported trip purposes were removed (53 cases) which left 554 cases.

### 9.5.2.2 Household-based models

Three different types of model were used to study the relationship between the factors collected as part of the survey which might affect demand and the actual number of household walking and cycling trips in both summer and winter.

An Ordinary Least Squares (OLS) regression model was found to perform better than a Poisson model and a Negative Binomial regression model. The OLS model was developed by including all possible variables, then repeatedly dropping the least significant coefficient and re-estimating the model until all the remaining coefficients of the variables were statistically significant at the 5% level. The four resulting parsimonious models are shown in Table 9.2. For each mode the range of significant variables were found to be similar, except for small differences (the models were adjusted to ensure comparability). The models for walking and cycling are only slightly different. Demand is given in terms of household trips per month.

**Table 9.2: Regression Models Used**

	<b>Walking summer</b>	<b>Walking winter</b>	<b>Cycling summer</b>	<b>Cycling winter</b>
<b>Constant</b>	12.76	8.742	4.384	0.489
<b>Sample area dummy Tullamore</b>	18.497	16.238	4.925	4.549
<b>3 or more cars in the household (percentage)</b>	16.405	12.652	8.985	6.56
<b>Number of children between 4 and 17</b>	8.042	6.608	3.952	3.879
<b>In a city or large town</b>	13.958	13.416	0	0
<b>In a small town or village</b>	0	0	7.294	5.362
<b>Within walking distance of a small town or village</b>	35.524	18.497	8.714	2.322
<b>Distance from nearest town</b>	-2.168	-1.82	-1.34	-0.491

### 9.5.2.3 Application

These household-based models were applied to each scheme option using GIS techniques. The average of summer and winter levels was used.

Geodirectory data was used to select for each scheme the set of buildings within a radius of 250m from the scheme. This radius was chosen because the survey data had indicated that the majority of people using the surveyed cycling and walking facilities lived within one quarter of a kilometre of the facility. An uplift factor was applied to the results to account for the small proportion of users living further away.

Buildings which according to the Geodirectory dataset were vacant or derelict or had no residential delivery points were discarded. Each selected dwelling was weighted according to the number of residential delivery points; for dwellings flagged as holiday homes this weight was then halved.

Each dwelling was then given three attributes by a process of GIS matching of datasets:

- the ED in which the dwelling is located
- the distance from the nearest town (settlement of 1500+ population)
- a category variable representing type of area (whether the dwelling was within or within walking distance of two different sizes of settlement)

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The distance variable was capped at a maximum of 10km, this being the effective maximum distance observed in the survey data.

Using the ED variable, average household characteristics for the ED (number of children, likelihood of having 3+ cars) were imputed to the household, taken from 2006 Census data.

This enabled the above models to be applied individually to each household. Numbers of walking and cycling trips were summed over all households within 250m of the scheme, to give estimates of what cycling and walking demand would be with a footpath and cycleway facility in place, and these demands were used in the calculation of economic benefits.

9.5.2.4 Validation

The estimates of demand from this approach were also validated against the detailed N86 corridor model based on POWCAR data.

Based on results from other questions in the survey, the survey-based estimates of total cycling demand were scaled back to represent without-facility levels of cycling, and factored down to represent commuting trips only, so as to be comparable with the results from the local N86 model.

The results of this comparison showed the survey-based models to be giving answers of the correct order of magnitude.

The survey-based models give figures of 1.7 and 1.9 commuter cycling trips per day for schemes in the central part of the N86 corridor, rising to 6.3 commuter cycling trips per day for the scheme nearest to Tralee. The POWCAR-based model gives figures of 2.0 for the rural sections, rising to 4.6 near Tralee.

These figures all represent very small volumes of cycling. But the surveys – a combination of observed usage where similar facilities exist and stated likely usage along NSR corridors – indicate that provision of such facilities induces significant proportions of trips, and that commuting use is only a small proportion of the total.

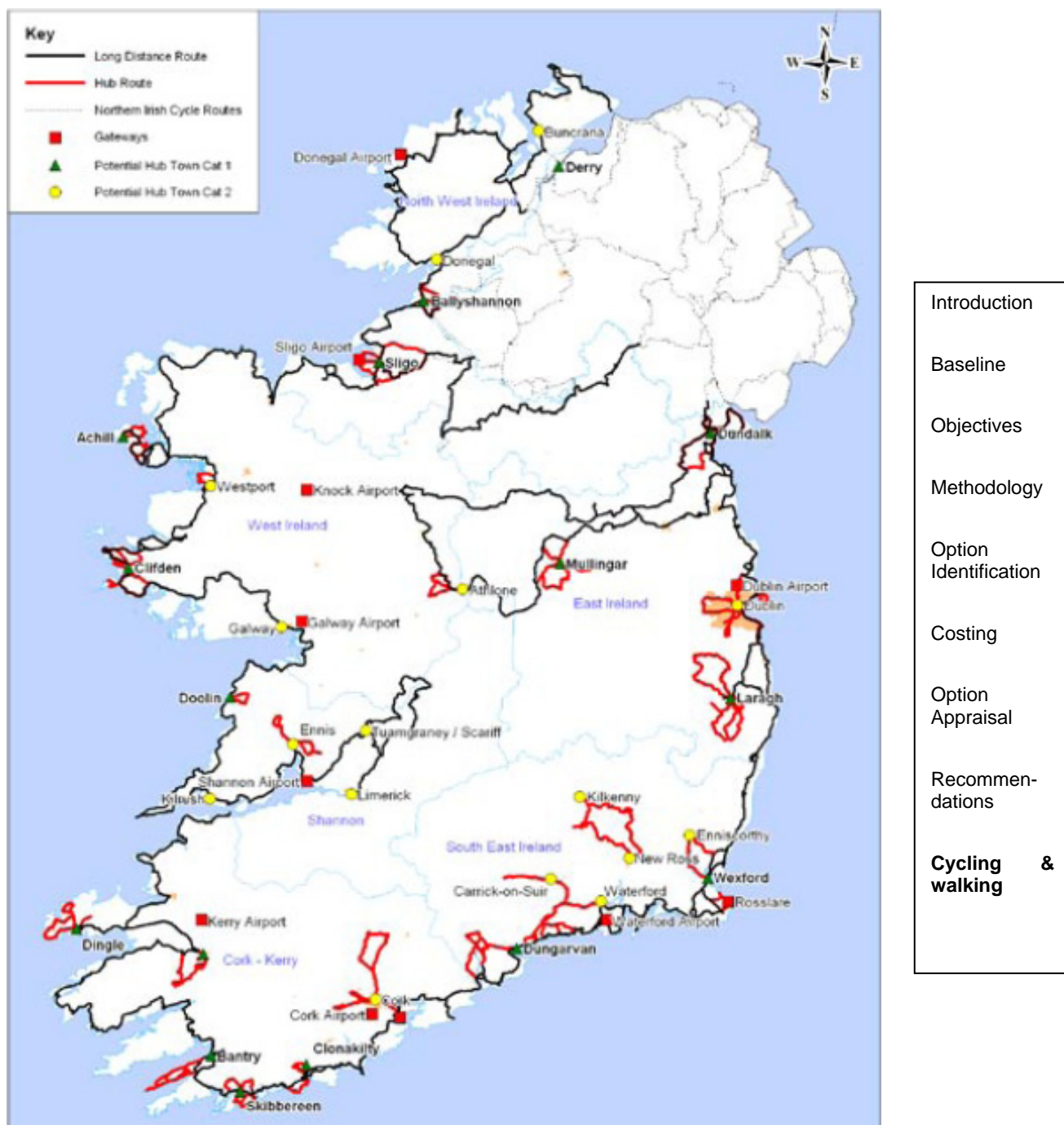
9.5.2.5 Cycle Tourism

Failte Ireland<sup>19</sup> estimate that there are 114,000 cycling visitors to Ireland each year, and that on average they cycle for two-thirds of a two-week holiday. Based on this information, a broad estimate was derived of the additional cycling demand from non-residents of the area around each NSR. Assuming that one-quarter of this demand is longer-distance cycling along the proposed 2905km of long-distance cycle routes, which amounts to around 20 trips per day on those NSRs that serve attractive tourist areas.

This additional component of cycling demand was added to the survey-based estimate of demand for walking and cycling by residents, and was considered to apply to the N56, N59, N67, N70, N71 and N86.

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<sup>19</sup> See <http://www.failteireland.ie/Business-Supports/Tourism-Sector-Development/> Activities/Cycling



**Figure 9.2: Proposed Long-Distance Cycle Routes** (source: "A strategy for the development of Irish Cycle Tourism", Sustrans, March 2007)

9.6 APPRAISAL RESULTS

With this approach, modelled demand for cycling and walking is strongly related to the number of occupied dwellings along each route corridor, and also related to proximity of the route to urban settlements.

Under the multi-criteria assessment, all schemes scored more highly with walking and cycling facilities included. But in many cases the gain in MCA score was marginal.

All of the cycling/walking options considered are presented on a scheme sheet and Project Appraisal Balance Sheet (PABS) in Appendix C. The scheme sheets are similar to those in Chapter 7 for the non-cycling options, but provide the additional costs associated with the proposed cycleway. The appraisal results are presented as a one-page tabular summary for each option, based on the Project Appraisal Balance Sheet (PABS). Each row of the PABS table corresponds to one of the appraisal subcriteria. Where an estimate of the monetised value of the impact is available, this is presented, with such qualitative or quantitative supporting information as can reasonably be fitted into a small space. The right-hand columns give the score for that scheme option against each subcriterion.

In a similar way to the treatment of choice between alternative carriageway standards, the scheme option with walking and cycling facilities provided was selected as the preferred option for the purposes of the study only where the gain in MCA score exceeded a certain threshold, corresponding to an improvement in value for money for the programme as a whole.

Of the 265 schemes assessed, this test was met for 141 schemes. For these schemes, the assessment scores carried forward were the with-cycleway scores. For the remaining schemes, the assessment scores carried forward to inform decision-making were the without-cycleway scores.

For all schemes, decisions on the extent of provision of such facilities will be taken at scheme design stage. The concern here was to take appropriate account of the costs and benefits of such facilities in assessing the value for money of the proposed programme.

The schemes for which – at this strategic level – it seems likely that walking and cycling facilities would be economically justified are shown in Table 9.3 below.

Of the 182 rural schemes, 81 schemes now have an MCA score greater than 5.2, which is an additional 16 schemes for the Priority 1 Programme, relative to the set identified in Chapter 8. The additional 16 schemes are listed in Table 9.4. These are schemes with scores that were close to the threshold for Priority 1 status in the previous analysis, so that the small additional benefit from cycling and walking provision improves the overall case enough to bring them into the higher priority category.

The estimated budget cost of implementing these schemes is €2.039 billion. This cost comprises the €1.558 billion for the Priority 1 schemes identified in Chapter 8, the additional cost of €0.154 billion for providing cycleways and €0.327 billion for the cost of the additional 16 schemes which now have an MCA score greater than 5.2.

Figure 9.3 maps all of the schemes with an MCA score greater than 5.2 and distinguishes between those with and without cycleways.

The relevant schemes in the North Region are listed in Table 9.5 ordered by Route number.

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**Table 9.3: Schemes Reassessed with Walking and Cycling Facilities ordered by Route Number**

Scheme Identification data		Incremental Cost (€m)
N51a.1.C2	Drogheda (M1) to Slane (N2)	1.964
N51b.1.C3	Slane (N2) to Navan (N3)	1.395
N52b.1.C2	M1 to Ardee (N2)	3.134
N52c.1.C2	Ardee (N2) to Kells	5.07
N52d.1.C2	Kells (N3) to Delvin (N51)	3.705
N52i.1.C3	Birr (N62) to Borrisokane (N65)	2.657
N52j.1.C2	Borrisokane (N65) to Nenagh Bypass	3.133
N54a.1.C2	Monaghan Town to Smithborough	1.426
N55a.1.C2	Ballanagh to Granard	4.517
N55c.2.C3	Bilymahon to Glassan	2.759
N55c.3.C2	Glassan to Ballykeeran	0.583
N56a.1.C2	Coolboy to Kilmacrenan	0.662
N56a.2.C3	Kilmacrenan to Creeslough	2.784
N56c.1.C3	Crolly to Dunglow (break at Loughanure)	2.208
N56d.1.C3	Dunglow to Lettermacaward	2.657
N56d.2.C3	Lettermacaward to Glenties	2.739
N59a.1.C2	Bayysadare to Dromore West	5.56
N59a.2.C2	Dromore West to Ballina	4.85
N59b.1.C2	Ballina to Crossmolina	1.486
N59c.4.C3	Newport to Westport	2.289
N59d.3.C3	Letterfrack to Clifden	2.922
N59e.2.C2	Maam Cross to Oughterard	3.673
N60a.1.C2	Balla to Claremorris	1.03
N61a.1.C3	Boyle to Tulsk	5.076
N61b.1.C2	Tulsk to Roscommon	3.853
N62a.1.C3	Athlone (N6) to Ferbane	2.43
N62b.1.C2	Birr to Roscrea (N7)	3.614
N62e.1.C2	Thurles to Horse & Jockey (N8)	0.963
N67a.1.C3	Kilcolgan to Kinvara	0.871
N67e.1.C2	Kilkee to Kilrush	2.518
N68a.1.C3	Kilrush to Lissycasey	0.61
N68a.2.C2	Lissycasey to Ennis	0.916
N69e.1.C2	Listowel to Tralee	3.983
N70a.2.C2	Castlemaine To Milltown	0.368
N70a.3.C2	Milltown to Killorglin	1.28
N70b.1.C2	Killorglin to Glenbeigh	2.494
N70b.2.C3	Glenbeigh to Caharsiveen	5.875
N70d.1.C3	Waterville to Caherdaniel	2.742
N70e.1.1.C3	Sneem to Kenmare (without Blackwater Bridge)	5.586
N71d.1.C2	Bandon to Ballinascarty	2.626
N71e.1.C2	Clonakilty to Lissavard	0.999
N71e.2.C2	Lissavard to Ross Carbery	1.015
N71e.3.C2	Ross Carbery to Connonagh (tie in to climbing lane outside of Connonagh)	0.435
N71e.4.C2	Coonagh to Leap	0.23
N71e.5.C2	Leap to Skibbereen	1.789
N71f.1.C2	Skibbereen to Aghadown	2.129
N71f.2.C2	Ballydehob to Junction with R586	2.379
N71g.1.C3	Bantry to Ballylicky	0.587

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Scheme Identification data		Incremental Cost (€m)
N71h.1.C3	Kenmare to Kilaarney	6.556
N72c.4.C2	Junction with N73 to Mallow	0.589
N72d.3.C2	Church View to Barraduff	1.563
N72e.1.C2	Beaufort to Killorglin	2.41
N73a.1.C2	Junction with N72 to Kildorrery (incorporating Farahy Relief Road)	4.174
N76a.1.C2	Kilkenny Ring Road to Callan Bypass	1.483
N76a.3.C2	Ninemilehouse to Clonmel (junction with N24)	2.396
N77a.2.C2	Junction with the N78 to Durrow	2.218
N78a.1.C2	Kilcullen to Rock	1.779
N80c.1.C2	Portlaoise (M7) to Stradbally	0.736
N80d.1.C2	N78 to Carlow	2.125
N80e.1.C2	Carlow to Ballon	0.554
N80f.1.C2	Ballon to Bunclody (Kildavin)	1.213
N85a.1.C2	Ennis to Inagh	2.161
N85a.2.C2	Inagh to Ennistimon	2.394
N86a.1.C3	Blennerville to Camp	2.905
		<b>153.83</b>

**Table 9.4: Additional 16 Schemes with MCA Score >5.2 as a result of the Provision of Walking and Cycling Facilities – ordered by Route Number**

Ref Number	Scheme Name	Road Standard	Cycle facilities	Red Flag	Budget Cost Without Cycling €m
N51b.1.C3	Slane (N2) to Navan (N3)	C3	Yes	Yes	8.487
N52b.1.C2	M1 to Ardee (N2)	C2	Yes	Yes	28.45
N52i.1.C3	Birr (N62) to Borrisokane (N65)	C3	Yes	No	19.07
N54a.1.C2	Monaghan Town to Smithborough	C2	Yes	No	14.17
N59a.2.C2	Dromore West to Ballina	C2	Yes	Yes	36.742
N59c.4.C3	Newport to Westport	C3	Yes	Yes	18.662
N62a.1.C3	Athlone (N6) to Ferbane	C3	Yes	Yes	13.947
N62b.1.C2	Birr to Roscrea (N7)	C2	Yes	No	18.946
N62e.1.C2	Thurles to Horse & Jockey (N8)	C2	Yes	Yes	8.015
N68a.1.C3	Kilrush to Lissycasey	C3	Yes	No	4.137
N70e.1.1.C3	Sneem to Kenmare (without major Blackwater Bridge)	C3	Yes	Yes	47.18
N71g.1.C3	Bantry to Ballylicky	C3	Yes	No	5.146
N71h.1.C3	Kenmare to Killarney	C3	Yes	Yes	60.346
N76a.1.C2	Kilkenny Ring Road to Callan Bypass	C2	Yes	Yes	13.728
N78a.1.C2	Kilcullen to Rock	C2	Yes	No	13.11
N86a.1.C3	Blennerville to Camp	C3	Yes	Yes	17.077
Total					<b>325.213</b>

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**Table 9.5: Schemes with MCA Score >5.2 including those with Walking and Cycling Facilities in North Region ordered by Route Number**

Ref Number	Scheme Name	Road Standard	Cycle facilities	Red Flag
<b>N52d.1.C2</b>	Kells (N3) to Delvin (N51)	C2	Yes	<b>Yes</b>
<b>N52e.1.T1</b>	Delvin (N51) to Mullingar (N4)	T1	No	<b>Yes</b>
<b>N52f.1.T1</b>	Mullingar(N4) Tyrrellspass (N6)	T1	No	<b>Yes</b>
<b>N52g.1.T1</b>	Kilbeggan (N6) to Tullamore Bypass	T1	No	<b>No</b>
<b>N54a.1.C2</b>	Monaghan Town to Smithborough	C2	Yes	<b>No</b>
<b>N55a.1.C2</b>	Bellanagh to Granard	C2	Yes	<b>No</b>
<b>N55c.2.C3</b>	Ballymahon to Glassan	C3	Yes	<b>Yes</b>
<b>N55c.3.C2</b>	Glassan to Ballykeeran	C2	Yes	<b>Yes</b>
<b>N56a.1.C2</b>	Coolboy to Kilmacrenan	C2	Yes	<b>Yes</b>
<b>N56a.2.C3</b>	Kilmacrenan to Creeslough	C3	Yes	<b>Yes</b>
<b>N56c.1.C3</b>	Crolly to Dunglow (break at Loughanure)	C3	Yes	<b>Yes</b>
<b>N56d.1.C3</b>	Dunglow to Lettermacaward	C3	Yes	<b>Yes</b>
<b>N56d.2.C3</b>	Lettermacaward to Glenties	C3	Yes	<b>Yes</b>
<b>N56f.1.2.T1</b>	Killybegs (Junction with R263) to Inver	T1	No	<b>No</b>
<b>N56f.2.T1</b>	Inver to Mountcharles	T1	No	<b>No</b>
<b>N59a.1.C2</b>	Ballysadare to Dromore West	C2	Yes	<b>Yes</b>
<b>N59a.2.C2</b>	Dromore West to Ballina	C2	Yes	<b>Yes</b>
<b>N62a.1.C3</b>	Athlone (N6) to Ferbane	C3	Yes	<b>Yes</b>
<b>N80a.1.T1</b>	Woodfield to Clara	T1	No	<b>No</b>

Introduction

Baseline

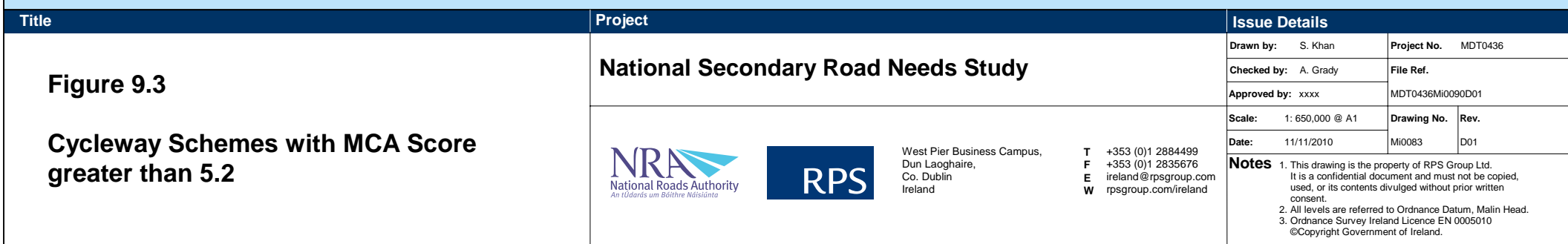
Objectives

Methodology

Option  
Identification

Costing

Option  
AppraisalRecommen-  
dations**Cycling &  
walking**





## **APPENDIX A**

### **Figures and Summary of Baseline Data**





**Table A.1: Lane Width Standards on National Secondary Roads**

WIDTH <3m			WIDTH <3m			WIDTH <3m		
Route	Length (m)	%	Route	Length (m)	%	Route	Length (m)	%
N51	58,588	53.3%	N63	117,656	62.0%	N75	426	2.4%
N52	139,826	35.0%	N65	46,514	57.3%	N76	7,670	8.8%
N53	7,270	20.0%	N66	35,999	73.0%	N77	10,999	20.2%
N54	15,919	22.4%	N67	208,553	80.6%	N78	15,665	12.6%
N55	72,776	45.9%	N68	45,349	55.5%	N80	44,353	16.0%
N56	180,127	57.6%	N69	45,255	22.4%	N81	45,217	26.4%
N58	9,972	44.2%	N70	224,092	78.5%	N82		0.0%
N59	397,989	66.7%	N71	140,358	36.9%	N83	71,000	78.5%
N60	45,292	24.5%	N72	102,989	31.1%	N84	74,674	50.4%
N61	54,940	32.5%	N73	36,310	64.5%	N85	34,987	54.2%
N62	85,071	90.5%	N74	10,054	25.0%	N86	66,173	52.0%
						N87	43,318	77.2%
						<b>TOTAL</b>	<b>2,495,379</b>	<b>46.8%</b>

**Table A.2: Skid Resistance on National Secondary Roads**

<b>MSSC_40 in 2008</b>		
<b>Route</b>	<b>MSSC_40 (%)</b>	<b>Length (m)</b>
N51	5	72,795
N51	6	2,401
N51	10	38,987
N51	11	2,597
N51	14	3,400
N51	15	26,396
N51	16	1,001
N51	19	3,400
N51	20	18,404
N51	21	1,599
N51	24	2,200
N51	25	14,999
N51	29	1,999
N51	30	11,603
N51	33	3,601
N51	35	7,599
N51	40	8,198
N51	42	1,003
N51	45	6,400
N51	48	1,001
<b>N51</b>	<b>55</b>	<b>4,598</b>
<b>N51</b>	<b>65</b>	<b>4,004</b>
<b>N51</b>	<b>75</b>	<b>2,599</b>
<b>N51</b>	<b>79</b>	<b>200</b>
N52	7	1,800
N52	8	2,200
N52	12	2,000
N52	22	799
N52	31	600
N52	32	1,000
N52	39	201
N52	44	599
N52	47	1,001
N52	50	4,000
<b>N52</b>	<b>60</b>	<b>2,800</b>
<b>N52</b>	<b>62</b>	<b>1,000</b>
<b>N52</b>	<b>80</b>	<b>4,202</b>
<b>N52</b>	<b>81</b>	<b>800</b>
<b>N52</b>	<b>85</b>	<b>801</b>
<b>N52</b>	<b>95</b>	<b>1,402</b>
<b>N52</b>	<b>100</b>	<b>4,597</b>
<b>N54</b>	<b>53</b>	<b>400</b>
N55	36	202
N55	43	1,000

<b>MSSC_40 in 2007</b>		
<b>Route</b>	<b>MSSC_40 (%)</b>	<b>Length (m)</b>
N62	5	50,217
N62	7	1,000
N62	10	24,803
N62	15	12,606
N62	19	2,001
N62	25	9,203
N62	30	5,403
<b>N62</b>	<b>50</b>	<b>2,399</b>
<b>N62</b>	<b>55</b>	<b>2,399</b>
<b>N62</b>	<b>60</b>	<b>2,001</b>
<b>N62</b>	<b>75</b>	<b>1,401</b>
<b>N62</b>	<b>100</b>	<b>6,201</b>
N65	27	200
<b>N65</b>	<b>58</b>	<b>199</b>
<b>N65</b>	<b>63</b>	<b>200</b>
<b>N65</b>	<b>70</b>	<b>2,803</b>
<b>N65</b>	<b>94</b>	<b>200</b>
N66	31	200
<b>N66</b>	<b>86</b>	<b>200</b>
N67	8	400
N67	18	200
N67	24	1,001
N67	26	200
N67	33	1,000
N67	46	200
<b>N67</b>	<b>52</b>	<b>400</b>
<b>N67</b>	<b>90</b>	<b>1,202</b>
N68	32	401
N69	22	200
<b>N69</b>	<b>78</b>	<b>200</b>
N70	9	800
N70	16	600
<b>N74</b>	<b>56</b>	<b>401</b>
<b>N74</b>	<b>83</b>	<b>200</b>
N76	48	800
<b>N76</b>	<b>65</b>	<b>1,802</b>
N77	17	801
N78	12	399
N78	14	1,401
N78	45	3,600
<b>N78</b>	<b>84</b>	<b>200</b>
N80	11	1,599
N80	13	799
N80	29	1,201

MSSC_40 in 2008		
Route	MSSC_40 (%)	Length (m)
<b>N55</b>	<b>56</b>	<b>799</b>
<b>N55</b>	<b>70</b>	<b>1,999</b>
<b>N55</b>	<b>90</b>	<b>1,797</b>
N56	9	200
N56	17	600
N56	18	599
N56	23	601
N56	26	796
N56	27	1,002
N56	38	1,802
N56	46	400
<b>N56</b>	<b>52</b>	<b>200</b>
<b>N56</b>	<b>57</b>	<b>1,399</b>
<b>N56</b>	<b>71</b>	<b>400</b>
<b>N56</b>	<b>82</b>	<b>200</b>
<b>N56</b>	<b>86</b>	<b>600</b>
<b>N56</b>	<b>88</b>	<b>200</b>
<b>N58</b>	<b>67</b>	<b>600</b>
N59	13	401
N59	37	400
N59	41	201
<b>N59</b>	<b>58</b>	<b>200</b>
<b>N59</b>	<b>68</b>	<b>200</b>
<b>N59</b>	<b>76</b>	<b>399</b>
<b>N59</b>	<b>78</b>	<b>201</b>
<b>N60</b>	<b>54</b>	<b>400</b>
<b>N84</b>	<b>63</b>	<b>200</b>
<b>N84</b>	<b>83</b>	<b>200</b>
<b>Total</b>		<b>289,380</b>

MSSC_40 in 2007		
Route	MSSC_40 (%)	Length (m)
N80	38	800
<b>N80</b>	<b>53</b>	<b>401</b>
<b>N80</b>	<b>62</b>	<b>800</b>
<b>N80</b>	<b>71</b>	<b>200</b>
<b>N80</b>	<b>73</b>	<b>200</b>
<b>N80</b>	<b>80</b>	<b>1,600</b>
<b>N80</b>	<b>95</b>	<b>1,600</b>
N81	6	1,199
N81	20	9,602
N81	21	1,001
N81	35	4,401
N81	37	599
N81	40	3,802
<b>N81</b>	<b>57</b>	<b>400</b>
<b>N81</b>	<b>67</b>	<b>600</b>
<b>N81</b>	<b>81</b>	<b>200</b>
<b>N81</b>	<b>85</b>	<b>799</b>
N85	43	200
<b>Total</b>		<b>172,050</b>

**Table A.3: Roughness on National Secondary Roads**

IRI >=4		IRI >=4		IRI >=4	
Route	Length (m)	Route	Length (m)	Route	Length (m)
N51	19,437	N63	25,401	N75	2,404
N52	37,197	N65	14,214	N76	10,602
N53	1,391	N66	16,601	N77	6,800
N54	2,401	N67	76,936	N78	8,599
N55	12,608	N68	13,798	N80	10,001
N56	63,206	N69	18,630	N81	8,713
N58	4,400	N70	79,694	N82	200
N59	155,795	N71	101,212	N83	23,640
N60	34,798	N72	65,734	N84	44,804
N61	9,404	N73	18,005	N85	4,673
N62	23,754	N74	5,200	N86	22,601
				N87	6,199

**Table A.4 – Number of junctions per road and frequency per km**

ROAD	Junction Number	Junction / km	ROAD	Junction Number	Junction / km	ROAD	Junction Number	Junction / km
N51	78	1.42	N63	146	1.54	N75	14	1.56
N52	304	1.52	N65	47	1.16	N76	54	1.24
N53	37	2.04	N66	30	1.22	N77	44	1.62
N54	74	2.08	N67	183	1.42	N78	104	1.67
N55	129	1.63	N68	52	1.27	N80	227	1.64
N56	166	1.06	N69	129	1.28	N81	186	2.17
N58	13	1.15	N70	166	1.16	N82	17	6.69
N59	314	1.05	N71	279	1.47	N83	49	1.08
N60	115	1.24	N72	173	1.05	N84	86	1.16
N61	119	1.41	N73	35	1.24	N85	32	0.99
N62	135	2.87	N74	27	1.34	N86	53	0.83
						N87	56	2.00
						<b>Total</b>	<b>3,673</b>	

## **APPENDIX B**

### **Illustration of Problems and Illustration of Possible Solutions**





## **APPENDIX C**

### **Scheme Sheets & PABS for Cycling and Walking**


N51.d.1.C3			Name: Athboy to Delvin (N52)					Type: S2 Type 3		
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118357	5.666	67.5	3.1	0.9	3308	5.615	6.703	0.993	0.284	1.700
118362	5.031	70	2.2	0.4	3307	5.011	6.808	1.399	0.373	1.509
Athboy to Delvin (N52)	Total 10.697					Total 10.626				
<p>Notes:</p> <p>The horizontal and vertical alignment is extremely poor over this section and most of the corridor operates under a speed limit of 80kph. The route is extremely bendy and is very narrow in places. There are a number of very bad bends and chicanes. The route is also hilly in places and is sometimes hilly on bad bends. There is no overtaking opportunity of note along this section. There is a speed limit restriction north of Stonestown but it is proposed to continue this upgrade through this speed restricted area. There is an accident black spot east of Clonmaskill.</p> <p>This route crosses the Stoneyford River to the east of Delvin. This river is environmentally designated as a Special Area of Conservation. The existing bridge is wide enough to accommodate this upgrade.</p> <p>3 No. stream crossings.</p> <p>Add premium of 10 to construction and land costs to take some account of extremely bendy nature if this section.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p>						TOTAL:	13.511	2.392	0.656	3.209
						Any special costs	1.351	0.239	0.000	0.000
						Sub Total	21.358			
						Cycling	+2.497			
Grand Total	23.855									

PABS Appraisal Summary Table - N51d.1.C3						
Scheme Option: N51 Athboy to Delvin (N52)	Description: 10.626km upgrade to S2 Type 3 standard	Problems Identified: • Lane width < 3m for majority of the corridor • Sight distances are poor throughout corridor for both 85kph and 100kph design standards.	Quantitative assessment	Monetised (million 30 yrs)	Score	
					Red Flag	Score
Environment	Air Quality		65 households affected in 2025 -5 tonnes of carbon saved in 2025	-€0.071 €0.000	No	3.5
	Noise and vibration Landscape and visual quality		65 households affected in 2025	-€0.078	No	3.4
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will impact directly on the River Boyne and River Black Water SAC (002299). No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including three Earthworks, a Castle – Tower House, a Mill, a Ringfort and five NIAH Structures.			Yes	2.5
	Landuse	The proposed realignments will primarily be within Agricultural Areas.			No	3.0
	Water resources	The proposed realignments in this section of the N51 will cross the Stonyford River which is designated under the River Boyne and River Black Water SAC (002299).			No Yes	4.0 2.5
Safety	Accident reduction Security		-0.9 accidents saved in 2025	-€10.351		1.0 7.0
Economy	Transport Efficiency and Effectiveness	A facility for walkers and cyclists is to be provided where none previously existed.		Non-work Work Active travel PVC Residual value		4.8
	Other economic impacts Funding			€3.526 €3.153 €1.629 €15.618 €1.175		
	Vulnerable groups Deprived geographic areas	Not assessed Some of the route corridor is within 4km of a settlement of 1,500 people or more.	Imperfect competition effects	€0.315		4.8 4.0
Accessibility and Social Inclusion	Transport integration Land-use integration Geographical integration Integration with other government policies		0 CLAR zones experience improved access to Hub/Gateway			7.0 4.0
						6.0 4.3 4.2 4.0
				NPV	Total	4.2
				BCR	Red Flagged	Yes
				-€16.320 -0.04		

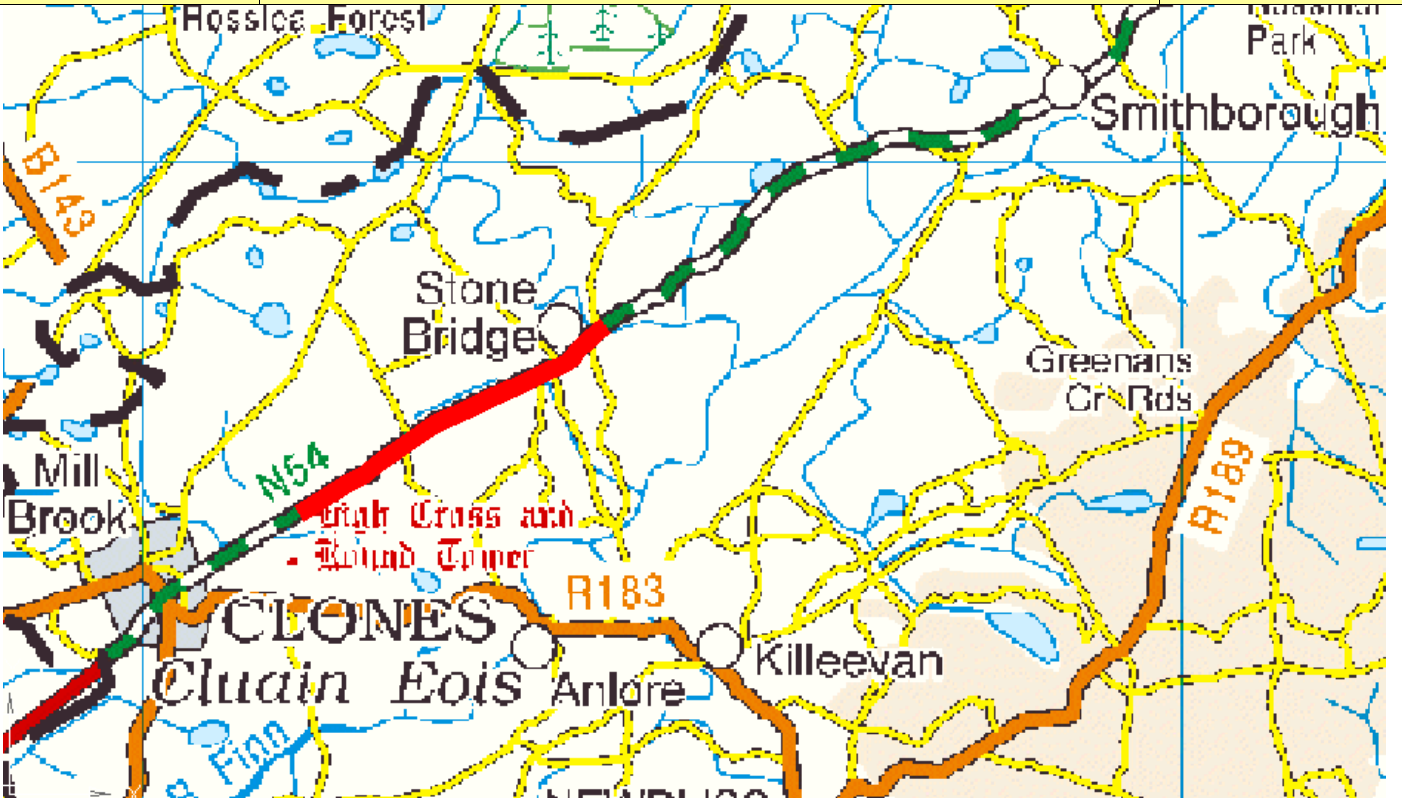
N52.d.1.C2			Name: Kells (N3) to Delvin (N51)					Type: S2 Type 2		
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118380	3.797	70	4.4	2.6	3305	3.698	6.908	1.648	0.330	1.139
118379	1.877	75	2.3	0.4	3304	1.869	2.824	0.470	0.100	0.563
118385	3.191	75	2.3	0.4	3304	3.178	4.802	0.799	0.169	0.957
Break at Clonmellon						0.000				
118388	0.256	75	2.3	0.4	3304	0.255	0.385	0.064	0.014	0.077
118387	6.917	70.5	4.9	2.2	3304	6.765	12.398	2.895	0.582	2.075
Kells (N3) to Delvin (N51)	Total 16.038					Total 15.765				
<p>Notes:</p> <p>This Route is tree lined for the majority of its length and generally to Type 3 width or better however it is very bendy and hilly in places. While there are several overtaking sections, south of Kilrush Lower and either side of Johnsbrook Cross Roads, they would be greatly improved by improving the vertical alignment.</p> <p>The existing stone bridge south of Clonmellon is narrow but should be adequate for this upgrade.</p> <p>There is one NHA south of this Route at Drewstown Great and another north of this Route at Newtown.</p> <p>This route crosses the Stonyford and Athboy Rivers to the east of Delvin. These rivers are environmentally designated as a Special Area of Conservation. The existing bridges are wide enough to accommodate this upgrade.</p> <p>The existing stone Bridge over the stream to the south of Clonmellon is narrow and will need to be widened / replaced (add cost).</p> <p>The existing Stonyford Bridge over the Stonyford River appears to be wide enough for this upgrade.</p> <p>The existing stone Burkes Bridge over the Tributary to the Stonyford River is narrow and will need to be widened / replaced (add cost).</p> <p>5 No stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 2.6 to 3.5 – Maintenance Bracket 2</p>						TOTAL:	27.318	5.877	1.194	4.811
						Any special costs	0.800	0.000	0.000	0.000
						Sub Total	40.000			
						Cycling	+3.705			
						Grand Total	43.705			

PABS Appraisal Summary Table - N52d.1.C2						
Scheme Option: N52 Kells (N3) to Delvin (N51)	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Score	
					Red Flag	Score
<b>Description:</b> 15.765km upgrade to S2 Type 2 standard  <b>Problems Identified:</b> <ul style="list-style-type: none"> <li>• Lane width &lt; 3m for 31% of the corridor and less than 3.5m for 68% of the corridor. These deficiencies occur west of Kells and from the R154 junction to Delvin.</li> <li>• Intermittent sightline problems along the route for 85kph design standard, particularly west of Kells and from the junction of the R154 to Delvin.</li> <li>• Generally the corridor would not satisfy the sightline requirements for the 100kph design standard.</li> </ul>	Air Quality		79 households affected in 2025 -7 tonnes of carbon saved in 2025	-€0.137 €0.000	No	3.4
	Noise and vibration Landscape and visual quality	Not assessed	79 households affected in 2025	-€0.146	No	3.4
	Biodiversity	The proposed realignment will impact directly on the River Boyne and River Blackwater SAC (002299) when crossing the Ayrbog River and again when crossing the Stonyford River. Potential exists for indirect impacts to Girley Bog NHA (001580) and Lough Sheek pNHA (000556).			Not assessed	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Souterrian, five NIAH Structures, Architectural Fragments and two Earthworks.			Yes	2.5
	Landuse Water resources	The proposed realignments will primarily be within Agricultural Areas. The proposed realignment will impact directly on the River Boyne and River Blackwater SAC (002299) when crossing the Ayrbog River and again when crossing the Stonyford River. Potential exists for indirect impacts to Lough Sheek pNHA (000556).			No	3.0
	Accident reduction Security	A facility for walkers and cyclists is to be provided where none previously existed.	1.3 accidents saved in 2025	€9.177	No	4.0
	Transport Efficiency and Effectiveness		225 vehicle-hours per day in travel time saved in 2025	€5.719	Yes	2.5
	Other economic impacts Funding	Not assessed	Imperfect competition effects	€1.866		6.6
	Vulnerable groups Deprived geographic areas	Some of the route corridor is within 4km of a settlement of 1,500 people or more.		Non-work Work Active travel €18.659 €2.281		7.0
	Transport integration Land-use integration Geographical integration Integration with other government policies			PVC Residual value €28.736 €2.299		5.4
<b>Accessibility and Social Inclusion</b>						6.6
						4.0
<b>Integration</b>			1 CLAR zones experience improved access to Hub/Gateway			7.0
						4.0
						6.0
						7.0
						4.4
				NPV	€10.980	
				BCR	1.38	
				<b>Total</b>	<b>Red Flagged</b>	<b>5.7</b>
						Yes

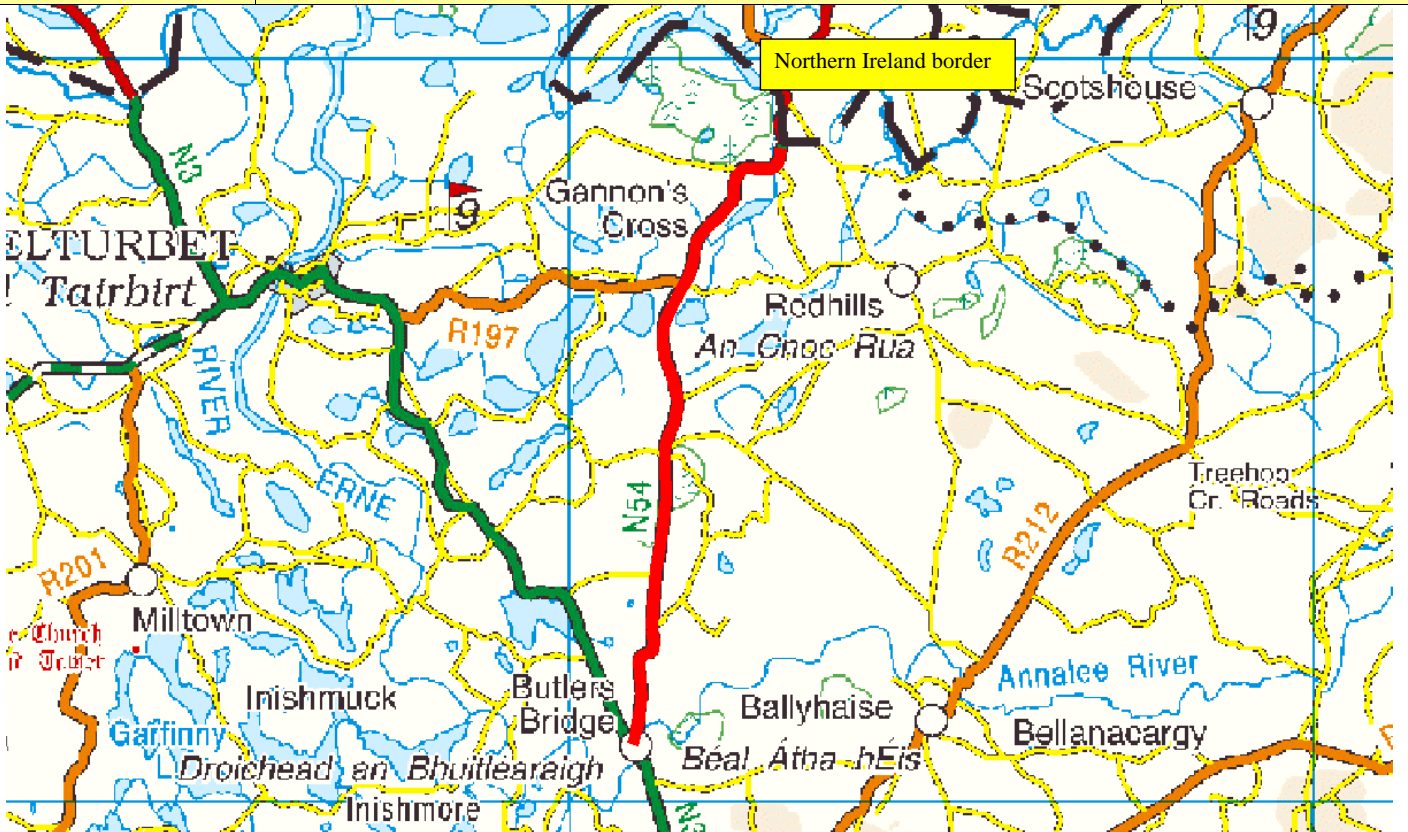


N54.a.1.C2			Name: Monaghan Town to Smithborough				Type: S2 Type 2			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120220 (Former link no. 100956)	2.620 (Former link length3.220)	72	4.7	2.5	3303	2.555	4.468	0.965	0.196	0.786
100776	0.200	72	4.7	2.5	3303	0.195	0.341	0.074	0.015	0.060
118405	0.581	72	4.7	2.5	3303	0.566	0.991	0.214	0.044	0.174
120221 (Former link no. 118409)	2.771 (Former link length3.049)	75	2.1	0.6	3304	2.754	4.170	0.694	0.147	0.831
Monaghan Town to Smithborough	Total 6.127					Total 6.070				
<p>Notes:</p> <p>The first approx 600m of this route out of Monaghan Town (400m past the speed limit restriction into Monaghan Town) is to Type 1 standard. It is therefore not proposed to upgrade this section. In general this route is very bandy and hilly and there are only a few brief overtaking opportunities. The last 300m before the speed limit restriction is though to be to at least Type 2 standard and has a footway. It is therefore not included in this upgrade.</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>2 No. very bad bends at Ballyleck</p> <p>The route parallels the Ulster Canal for approximately 4.5km.</p> <p>Bad bend at Annagola.</p> <p>Very hilly for approx 1km at Thornhill.</p> <p>6 No stream crossings.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p> <p>Split Link 100956 @ approx (264562, 332984)</p> <p>Split Link 118409 @ approx (259367, 331032)</p>						TOTAL:	9.970	1.946	0.402	1.852
						Any special costs	0.000	0.000	0.000	0.000
						Sub Total	14.170			
						Cycling	+1.426			
						Grand Total	15.596			

PABS Appraisal Summary Table - N54a.1.C2					
Scheme Option: N54 Monaghan Town to Smithborough		Description: 6.07km upgrade to S2 Type 2 standard	Problems Identified:		Budget Cost (million) €15.60
			<ul style="list-style-type: none"> <li>• Lane width &gt; 3m for nearly all of this section of the route but there is a significant section where the lane widths are less than 3.5m, particularly west of Monaghan town and east of Clones.</li> <li>• Between Brandrum and Smithborough and again at the approach to Clones the lane widths dip intermittently into the 2.75 to 3.0m range.</li> <li>• Intermittent poor visibilities to V=85kph and V=100kph design standards</li> <li>• Sight problems are identified in and around the junction with the R187 west of Brandrum where the sight distances dip intermittently into the 20 to 120m range.</li> <li>• This section has an accident rate above the national average for fatal accidents but just below the national average for serious accidents.</li> <li>• Accident cluster located at the speed limit restriction south of Monaghan.</li> <li>• Accident cluster located at the junction with the R187 west of Brandrum.</li> <li>• Accident cluster located west of Smithborough at what appears to be a bad bend.</li> <li>• Accident cluster located between two local roads approximately 2.5km north of Clones.</li> <li>• Pavement condition is predominantly good with the majority of the route with IRI &lt; 4.</li> </ul>		
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Score
Environment	Air Quality		30 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.022 €0.000	No 3.8
	Noise and vibration Landscape and visual quality	Not assessed	30 households affected in 2025	€0.088	No 5.0 Not assessed 4.0
Safety	Biodiversity	The proposed realignment will impact directly on the Ulster Canal pNHA (001611) and may impact indirectly on Corcreagh Lake and Woodland pNHA (001783) and Rosefield Lake and Woodland pNHA (001784).			No 2.5
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including Earthwork.			No 3.0
	Landuse Water resources	The proposed realignments will primarily be within Agricultural Areas. The proposed realignments in this section of the N54 will cross the River Magheramey.			No 4.0 No 3.0
Safety	Accident reduction Security		0.5 accidents saved in 2025	€7.838	7.0 7.0
Economy	Transport Efficiency and Effectiveness	A facility for walkers and cyclists is to be provided where none previously existed.	112 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €7.061 €4.161 €0.639	5.7
	Other economic impacts			PVC Residual value €10.674 €0.801	
	Funding	Not assessed	Imperfect competition effects	€0.416	5.6 4.0
	Vulnerable groups Deprived geographic areas	Some of the route corridor is within 4km of a settlement of 1,500 people or more.	2 CLAR zones experience improved access to Hub/Gateway		7.0 4.3
Accessibility and Social Inclusion	Transport Integration				6.0
	Land-use integration				4.6
	Geographical integration				6.1
Integration	Integration with other government policies				4.1
				NPV BCR €10.308 1.97	Total Red Flagged
					5.3 No

N54.a.2.C2			Name: Smithborough to Clones					Type: S2 Type 2			
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
120228 (Former link no. 118414)	1.274 (Former link length4.421)	78	1.2	0.2	3303	1.271	1.616	0.140	0.034	0.382	
120226 (Former link no. 118413)	2.211 (Former link length3.027)	76	2.0	0.3	3303	2.204	3.161	0.456	0.099	0.663	
Smithborough to Clones	Total 3.485					Total 3.475					
<p>Notes:</p> <p>The first approx 2.715km out of Smithborough is to Type 1 standard and so is not recommended for upgrade here. The next approx. 2.020km is to approximately Type 2 standard and is also not recommended for upgrade here. The remainder of this route is narrow and bendy and has a poor vertical alignment in places. The last approx 340m before the speed limit at Clones is to approx Type 3/2 standard and has a footpath on the northern side. It is not proposed to upgrade this section either. There are limited overtaking opportunities along this route. There is a good overtaking opportunity coming out of Smithborough and also at the approach to Clones.</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>1 No Bridge over the Finn River (medium structure)</p> <p>2 No. stream crossings</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p> <p>Split link 118414 @ approx (254446, 328463)</p> <p>Split link 118413 @ approx (251496, 326654)</p>						TOTAL:	4.777	0.596	0.132	1.046	
						Any special costs	0.500	0.000	0.000	0.000	
						Sub Total	7.051				
						Cycling	+0.817				
						Grand Total	7.868				

PABS Appraisal Summary Table - N54a.2.C2						
Scheme Option: N54 Smithborough to Clones		Description: 3.475km upgrade to S2 Type 2 standard	Problems Identified:			Budget Cost (million) €7.87
			<ul style="list-style-type: none"><li>· Lane width &gt; 3m for nearly all of this section of the route but there is a significant section where the lane widths are less than 3.5m, particularly west of Monaghan town and east of Clones.</li><li>· Between Brandrum and Smithborough and again at the approach to Clones the lane widths dip intermittently into the 2.75 to 3.0m range.</li><li>· Intermittent poor visibilities to V=85kph and V=100kph design standards</li><li>· Sight problems are identified in and around the junction with the R187 west of Brandrum where the sight distances dip intermittently into the 20 to 120m range.</li><li>· This section has an accident rate above the national average for fatal accidents but just below the national average for serious accidents.</li><li>· Accident cluster located at the speed limit restriction south of Monaghan.</li><li>· Accident cluster located at the junction with the R187 west of Brandrum.</li><li>· Accident cluster located west of Smithborough at what appears to be a bad bend.</li><li>· Accident cluster located between two local roads approximately 2.5km north of Clones.</li><li>· Pavement condition is predominantly good with the majority of the route with IRI &lt; 4.</li></ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		20 households affected in 2025	-€0.003	No	3.9
	Noise and vibration		0 tonnes of carbon saved in 2025	€0.000	No	4.0
	Landscape and visual quality	Not assessed	20 households affected in 2025	€0.000	Not assessed	4.0
	Biodiversity	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and no sites are within 100m of the realignment.			No	4.0
	Landuse	The proposed realignments will primarily be within Agricultural Areas.			No	4.0
Safety	Water resources	The proposed realignments in this section of the N54 will cross the River Finn.			No	3.0
	Accident reduction		0.1 accidents saved in 2025	€1.888	No	6.9
	Security	A facility for walkers and cyclists is to be provided where none previously existed.				7.0
Economy	Transport Efficiency and Effectiveness		15 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel		4.6
				PVC Residual value		
			Imperfect competition effects	€0.060		4.5
Accessibility and Social Inclusion	Funding	Not assessed				4.0
	Vulnerable groups Deprived geographic areas	Some of the route corridor is within 4km of a settlement of 1,500 people or more.	1 CLAR zones experience improved access to Hub/Gateway			7.0
Integration						4.1
	Transport integration					6.0
	Land-use integration					4.6
	Geographical integration					6.1
	Integration with other government policies					4.1
				NPV	Total	4.9
				BCR	0.85	No

N54.b.1.C3			Name: Northern Ireland border to Butlers Bridge					Type: S2 Type 3					
													
Scheme Definition			Modelled as		OT Input		Scheme Cost €m						
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S			
62210	2.520	71	1.6	0.2	3307	2.515	2.729	0.308	0.091	0.756			
118417	0.672	71	1.6	0.2	3307	0.671	0.728	0.082	0.024	0.202			
118418	4.081	73.5	1.0	0.0	3306	4.081	4.070	0.319	0.098	1.224			
64753	1.660	73.5	1.0	0.0	3306	1.660	1.656	0.130	0.040	0.498			
Northern Ireland border to Butlers Bridge	Total 8.933					Total 8.927							
<p>Notes:</p> <p>This route is generally bendy and is narrow in places. There are a number of intermittent short overtaking opportunities but these are hampered by the vertical alignment and the bendiness.</p> <p>After circa 4km from Butlersbridge the road widths are circa Type 3 standard with reasonable geometry for approx 2.5km towards the NI Border, though some improvements to bendiness and the R197 junction would be beneficial (costs adjusted).</p> <p>There are a number of environmentally designated areas in the vicinity of this route, including Drumlany Lough, Drumgorry Lough, Corrarod Lough, Cloverhill Lough. Kilnaleck Lough and also a forrest area. These are designated as NHA's and SAC's and sometimes both.</p> <p>The route is bendy and hilly from the Northern Ireland Border to the junction with the R197.</p> <p>There are no speed limit restrictions through Cloverhill.</p> <p>The route passes through a forest area for approx 0.75km south of Cloverhill.</p> <p>Very bad bends at Kilnaglare Lower.</p> <p>3 No. stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p>						TOTAL:	9.183	0.839	0.252	2.680			
						Any special costs	-2.500	0.000	0.000	0.000			
						<p>Sub Total</p> <p>Cycling</p> <p>Grand Total</p>					10.454	+2.098	12.552

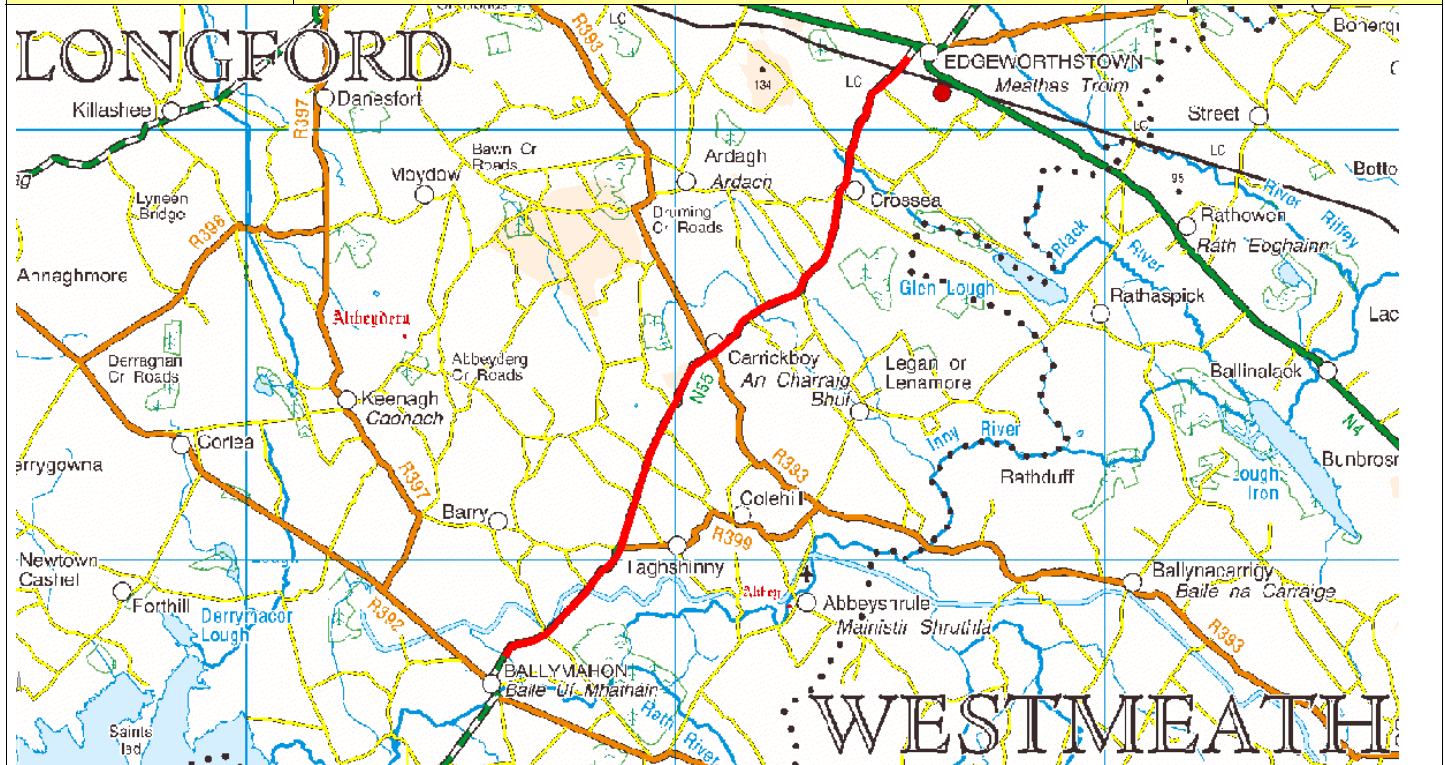


PABS Appraisal Summary Table - N54b.1.C3						
Scheme Option: N54 Northern Ireland border to Butlers Bridge	Description: 8.927km upgrade to S2 Type 3 standard	Problems Identified:	Budget Cost (million) €12.55			
			<ul style="list-style-type: none"> <li>ne width &lt; 3m for significant sections of this section of the route and are mostly less than 3.5m wide.</li> <li>For the isolated 4km section that passes between the looping Northern Ireland Border and also the approximately 4km section between Cloverhill and Butlers Bridge the lane widths dip to the 2.75 to 3.0m range.</li> <li>Intermittent poor visibilities to V=85kph and V=100kph design standards</li> <li>Sight problems are identified for the approximately 3km immediately south of the NI Border north of Cloverhill where the sight distances are predominantly in the 20 to 120m range.</li> <li>Sight problems identified from the junction with the local road to Ballyhalse to Butlers Bridge where the sightlines also dip into the 20 to 120m range.</li> <li>Minor accident cluster located at the junction with the R187.</li> <li>Minor accident cluster located approximately 2km north of Butlers Bridge.</li> <li>Pavement condition is predominantly good with the majority of the route with IRI &lt; 4.</li> </ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		70 households affected in 2025 -1 tonnes of carbon saved in 2025	-€0.025 €0.000	No	3.6
	Noise and vibration Landscape and visual quality	Not assessed	70 households affected in 2025	-€0.053	No	3.2
	Biodiversity	The proposed realignment will impact directly on the Lough Oughter and Associated Loughs SAC & pNHA (000007) at numerous locations. Potential to indirectly impact on Lough Garrow and Lough Gubdoo pNHA (000984).			Not assessed	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Ringfort - Rath.			Yes	1.0
	Landuse	The proposed realignments will primarily be within Agricultural Areas but two sections are through Wetlands and a number of sections are through a Forest Semi Natural Areas.			No	3.0
	Water resources	The proposed realignment will impact directly on the Lough Oughter and Associated Loughs SAC & pNHA (000007) at numerous locations. Potential to indirectly impact on the River Annalee and the Lough Garrow and Lough Gubdoo pNHA (000984).			No	4.0
	Accident reduction	A facility for walkers and cyclists is to be provided where none previously existed.	0.3 accidents saved in 2025	€0.710	Yes	1.0
Safety	Security					4.7
Economy	Transport Efficiency and Effectiveness		18 vehicle-hours per day in travel time saved in 2025	€0.685		7.0
				Non-work Work Active travel €1.265 €1.342		4.6
				PVC Residual value €8.077 €0.537		
	Other economic impacts Funding	Not assessed	Imperfect competition effects	€0.127		4.6
Accessibility and Social Inclusion	Vulnerable groups	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		0 CLAR zones experience improved access to Hub/Gateway			7.0
	Transport integration					3.9
	Land-use integration					
Integration	Geographical integration					6.0
	Integration with other government policies					4.6
						6.1
						4.1
				NPV	-€3.488	Total
				BCR	0.57	Red Flagged
						4.6
						Yes



F01

PABS Appraisal Summary Table - N55a.1.C2							
Scheme Option: N55 Bellanagh to Granard		Description: 18.988km upgrade to S2 Type 2 standard	Problems Identified: · Lane width <3.0m for approximately all of the section. Lane width < 2.75m intermittently. · Intermittent poor visibilities to V=85kph and V=100kph design standards, particularly south of Bellanagh and east of Loughduff. · Very high incidence of accidents. Accident cluster northwest of Carrigan. Accident cluster southeast of Loughduff. Accident cluster east of Cloonagh. Accident cluster east of Dring.				Budget Cost (million) €9.29
Objective	Sub-objective	Qualitative impacts		Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality			132 households affected in 2025	-€0.040	No	3.8
	Noise and vibration			0 tonnes of carbon saved in 2025	€0.000	No	3.7
	Landscape and visual quality			132 households affected in 2025	-€0.070	Not assessed	4.0
	Biodiversity					No	3.0
	Cultural Heritage / archaeology					No	3.0
	Landuse					No	4.0
Safety	Water resources					No	3.0
	Accident reduction			1.1 accidents saved in 2025	€7.498		6.3
	Security						7.0
Economy	Transport Efficiency and Effectiveness			207 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel		5.8
					PVC Residual value		5.9
Accessibility and Social inclusion	Other economic impacts			Imperfect competition effects	€1.680		6.6
	Funding			Not assessed			4.0
	Vulnerable groups			None of the route corridor is within 4km of a settlement of 1,500 people or more.			5.0
Integration	Deprived geographic areas			14 CLAR zones experience improved access to Hub/Gateway			7.0
	Transport integration						5.0
	Land-use integration						4.6
	Geographical integration						5.9
	Integration with other government policies						4.8
				NPV	€15.789	Total	5.3
				BCR	1.61	Red Flagged	No

N55.c.1.C3			Name: Edgeworthstown (N4) to Ballymahon				Type: S2 Type 3			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118425	3.641	72	1.3	0.0	3307	3.641	3.823	0.383	0.114	1.092
118426	2.188	75	0.6	0.0	3305	2.188	2.058	0.107	0.035	0.656
95989	2.99	75	0.6	0.0	3305	2.990	2.812	0.146	0.048	0.897
118427	0.565	75	0.6	0.0	3305	0.565	0.531	0.028	0.009	0.170
118428	2.621	78	0.3	0.0	3304	2.621	2.133	0.000	0.000	0.786
96145	1.94	78	0.3	0.0	3304	1.940	1.579	0.000	0.000	0.582
118430	0.459	78	0.3	0.0	3304	0.459	0.374	0.000	0.000	0.138
118429	3.268	75.5	0.8	0.0	3305	3.268	3.008	0.127	0.043	0.980
Edgeworthstown (N4) to Ballymahon	Total 17.672					Total 17.672				
Notes:							TOTAL:	16.319	0.791	5.302
This route is generally bendy and narrow though some variability in widths are noted, and it is also quite hilly in places. Overtaking along this section is limited to a few short sections. The route appears to have been resurfaced and possibly widened as part of the 'N55 Edgeworthstown to Crossea Contract 2003' and while the carriageway widths may be to Type 3 standard and even Type 2 standard in places, the alignment is still very poor. The 3.6km approx into Carrickboy has a wide road reservation and therefore the land costs are not included for this section. There are speed limit restrictions through Carrickboy but it is proposed to carry out this upgrade through these speed limit restrictions. The first approx 0.575km out of Carrickboy also has a wide road reservation and so the land cost have also been reduced for this section. At Ballintober there is a good straight section but overtaking is hampered by the vertical alignment. At the junction with the R399 a local upgrade to Type 1 standard has taken place for approx 1.07km, this section is not costed for in this upgrade. The route crosses the Royal Canal at Fowland's Bridge and the existing stone crossings should be wide enough for this upgrade. However some realignment either side of the bridge may have to take place as the existing alignment is poor at this location. From the aerial photography it can be seen that a number of local bend improvements have taken place over the years. The alignment for this route is still however very poor.							Any special costs	-0.988	-0.187 -0.048	-0.015 -0.321
The Royal Canal is the only environmentally designated areas of note in the vicinity of this route and it is listed as a NHA. This route crosses the Royal Canal at Fowland's Bridge.							Sub Total Cycling Grand Total			
10 No. stream crossings.										
Low Traffic Good Subgrade – Maintenance Category 1										
IRI 2.6 to 3.5 – Maintenance Bracket 2										
							21.102			
							+4.153			
							25.255			

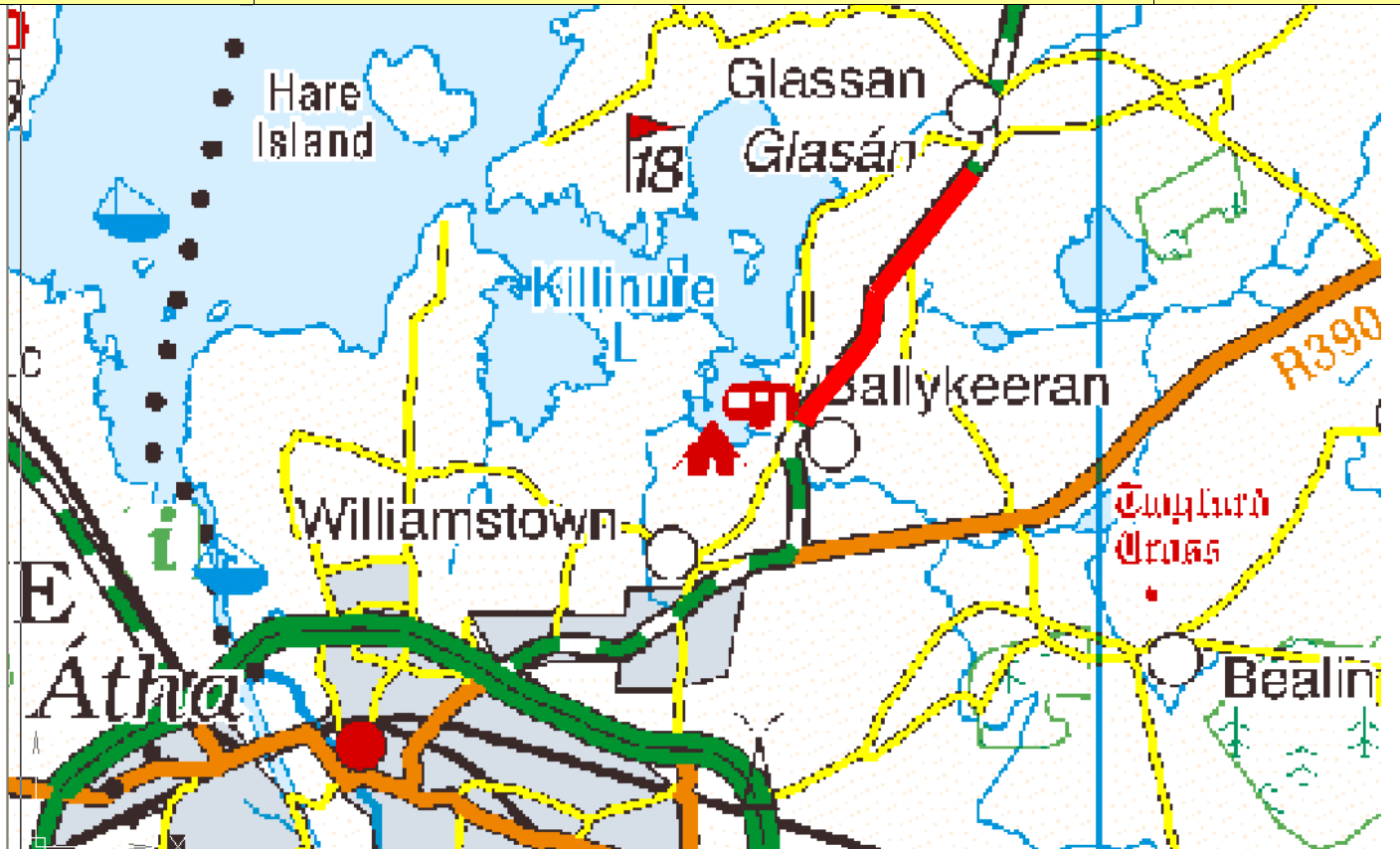
PABS Appraisal Summary Table - N55c.1.C3						
Scheme Option: N55 Edgeworthstown (N4) to Ballymahon		Description: 17.672km upgrade to S2 Type 3 standard		Problems Identified:		Budget Cost (million)  €5.25
				<ul style="list-style-type: none"><li>· Lane widths are poor this corridor. Lane width &lt; 3.5m for 79% of this corridor. Lane width &lt; 3.0m for 58% of this corridor.</li><li>· Sight distances are poor from Edgeworthstown south to east of Ardagh, from east of Barry to Ballymahon, from Tang to The Pigeons and from Glassan to Ballykeeran.</li><li>· High incidence of accidents throughout the corridor with a major cluster of serious accidents south of Ballykeeran.</li><li>· Poor pavement condition between west of Colehill and Tang and from Ballykeeran to Athlone.</li></ul>		
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		66 households affected in 2025 -1 tonnes of carbon saved in 2025	-€0.030 €0.000	No	3.8
	Noise and vibration Landscape and visual quality		66 households affected in 2025	€0.113	No	4.9
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will not impact directly or indirectly on any European designated sites, however, it does directly cross the Royal Canal pNHA (002103).			No	3.0
		No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including seven Ringforts, a Church, an Enclosure and a Castle – Motte and Bailey.			No	3.0
Safety	Landuse	The proposed realignments will primarily be within Agricultural Areas.			No	4.0
	Water resources	The proposed realignments in this section of the N55 will cross the Lenamore stream and the Royal Canal pNHA (002103).			No	3.0
	Accident reduction	A facility for walkers and cyclists is to be provided where none previously existed.	0.2 accidents saved in 2025	€2.162		5.1
Economy	Security					7.0
	Transport Efficiency and Effectiveness		33 vehicle-hours per day in travel time saved in 2025	Non-work Work €0.128 €1.845 €1.598		4.3
				PVC Residual €15.941 €0.971		
	Other economic impacts	Imperfect competition effects		€0.184		4.5
	Funding	Not assessed				4.0
Accessibility and Social Inclusion	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				5.0
	Deprived geographic areas		0 CLAR zones experience improved access to Hub/Gateway			4.0
	Transport integration					6.0
	Land-use integration					4.6
	Geographical integration					6.4
Integration	Integration with other government policies					4.8
				NPV	-€8.971	Total
				BCR	0.44	Red Flagged
						4.6
						No



N55.c.2.C3			Name: Ballymahon to Glassan					Type: S2 Type 3		
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118431	2.547	75.5	0.8	0.0	3305	2.547	2.345	0.099	0.034	0.764
120221 (Former link no. 118434)	0.170 (Former link length3.685)	70	1.7	0.2	3307	0.170	0.189	0.024	0.007	0.051
120230	2.000	N/A		0.0	3305	2.000	3.500	1.000	0.260	0.600
120224 (Former link no. 118434)	1.198 (Former link length3.685)	70	1.7	0.2	3307	1.196	1.334	0.166	0.048	0.359
118436	3.412	76	0.5	0.0	3304	3.412	3.071	0.097	0.035	1.024
118435	0.571	77	0.4	0.0	3305	0.571	0.490	0.004	0.003	0.171
118439	1.888	77	0.4	0.0	3305	1.888	1.620	0.013	0.008	0.566
Ballymahon to Glassan	Total 11.786					Total 11.784				
<p>Notes:</p> <p>This route is generally very bendy and hilly and has very little overtaking opportunity for long stretches. However there is one good overtaking opportunity at the straight section coming out of Ballymahon for 1.6km, after which there is no overtaking for 4.4km until the Type 1 or 2 standard section near The Pigeons. There is a speed limit restriction at Tang and it could be proposed to continue this upgrade through this speed limit restriction. However, realistically, local upgrades through here could be somewhat difficult. Therefore this route option includes for a short section offline at Tang. The section Type 1 or 2 standard near The Pigeons is approx 1.4km in length and is removed from the costs. There are no environmentally designated areas in the vicinity of this route.</p> <p>1 No. New Tang River Crossing (medium structure)</p> <p>1 No. Creggy River Crossing (existing very narrow stone bridge will have to be widened / replaced)</p> <p>2 No. stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 2.6 to 3.5 – Maintenance Bracket 2</p> <p>Split Link @ (213850, 254334) Resulting Link -&gt; 120221</p> <p>Split Link @ (212908, 252618) Resulting Link -&gt; 120224</p>						TOTAL:	12.549	1.402	0.395	3.536
						Any special costs	0.400 -1.491	-0.167	-0.047	-0.420
						Sub Total	16.157			
Cycling	+2.759									
Grand Total	18.916									

PABS Appraisal Summary Table - N55c.2.C3						
Scheme Option: N55 Ballymahon to Glassan		Description: 11.784km upgrade to S2 Type 3 standard		Problems Identified: · Lane widths are poor this corridor. Lane width < 3.5m for 79% of this corridor. Lane width < 3.0m for 58% of this corridor. · Sight distances are poor from Edgeworthstown south to east of Ardagh, from east of Barry to Ballymahon, from Tang to The Pigeons and from Glassan to Ballykeeran. · High incidence of accidents throughout the corridor with a major cluster of serious accidents south of Ballykeeran. · Poor pavement condition between west of Colehill and Tang and from Ballykeeran to Athlone.		Budget Cost (million) €18.92
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		88 households affected in 2025 2 tonnes of carbon saved in 2025	€0.029 €0.000	No	4.3
	Noise and vibration Landscape and visual quality		88 households affected in 2025	€0.119	No	5.1
	Biodiversity	Not assessed			Not assessed	4.0
		The proposed realignments in this section of the N55 will cross the Tang River which discharges to Lough Rea SAC & pNHA (000440) and Lough Rea SPA (004046).			Yes	2.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including a House – Indeterminate date, two Ringforts, an Enclosure, a Windmill and two Earthworks.			No	3.0
	Landuse	The proposed realignments will primarily be within Agricultural Areas with a small proportion through existing Artificial Surfaces.			No	4.0
Safety	Water resources	The proposed realignments in this section of the N55 will cross the Tang River which discharges to Lough Rea SAC & pNHA (000440) and Lough Rea SPA (004046).			No	3.0
	Accident reduction		0.8 accidents saved in 2025	€6.327		7.0
	Security	A facility for walkers and cyclists is to be provided where none previously existed.				7.0
	Transport Efficiency and Effectiveness		228 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel	€13.734 €17.082 €1.933	7.0
Economy				PVC Residual value	€12.615 €0.834	
	Other economic impacts		Imperfect competition effects		€1.708	7.0
	Funding	Not assessed				4.0
	Vulnerable groups Deprived geographic areas	None of the route corridor is within 4km of a settlement of 1,500 people or more.		1 CLAR zones experience improved access to Hub/Gateway		5.0 4.4
Accessibility and Social Inclusion	Transport integration					
	Land-use integration					5.0
	Geographical integration					4.6
	Integration with other government policies					6.4
Integration						4.8
						4.8



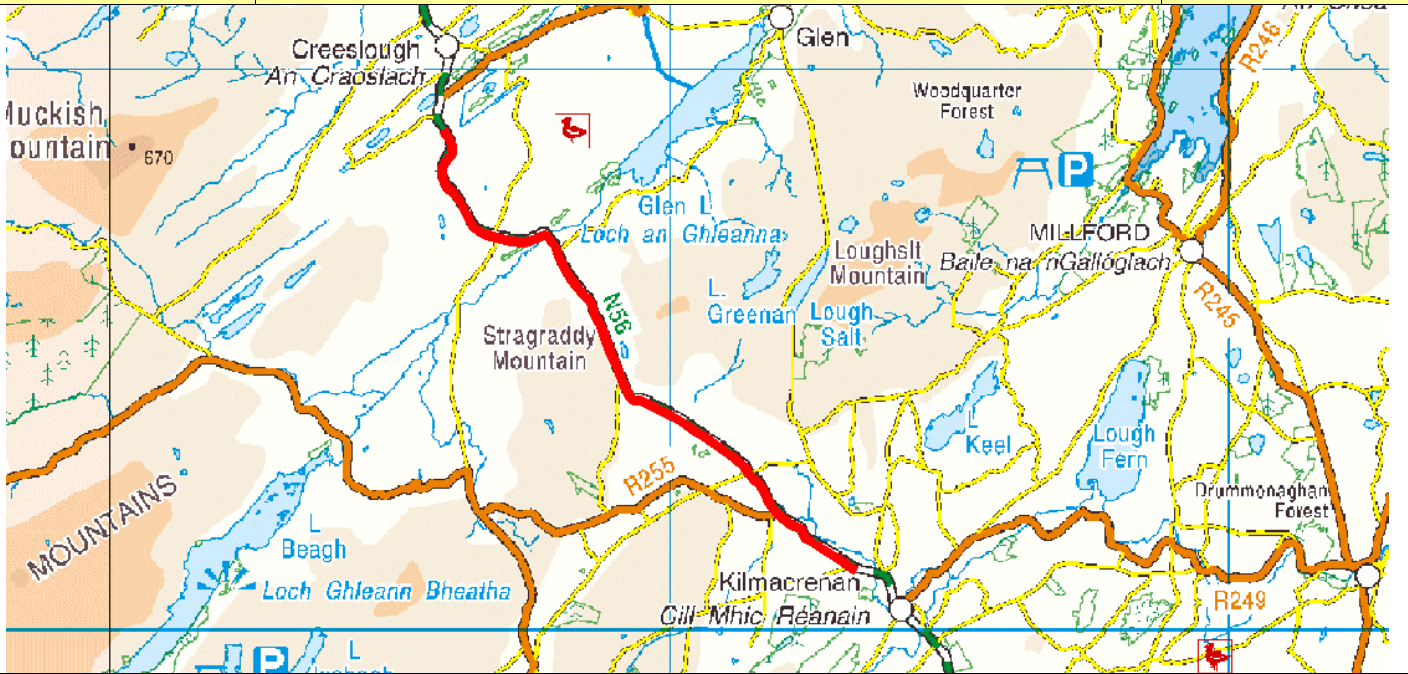
N55.c.3.C2			Name: Glassan to Ballykeeran					Type: S2 Type 2		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118442	1.251	77	1.5	0.1	3303	1.250	1.690	0.199	0.045	0.375
118444	1.247	73	3.3	1.4	3304	1.230	2.048	0.413	0.085	0.374
Glassan to Ballykeeran	Total 2.498					Total 2.480				
<p>Notes:</p> <p>This route is very narrow, bendy and hilly. It has very poor vertical and horizontal alignments. There is one very short overtaking section and the vertical alignment is particularly restrictive.</p> <p>Killinure Lough and Ballaghkeeran Bay are in some proximity to this route and are both environmentally designated as NHA's, SPA's and SAC's.</p> <p>Large stone walls present coming out of Glassan.</p> <p>3 No. bad bends.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 0 to 2.5 – Maintenance Bracket 1</p>						TOTAL:	3.738	0.613	0.130	0.749
						Any special costs	0.000	0.000	0.000	0.000
						Sub Total	5.230			
						Cycling	+0.583			
						Grand Total	5.813			

PABS Appraisal Summary Table - N55c.3.C2						
Scheme Option: N55 Glissan to Ballykeeran		Description: 2.48km upgrade to S2 Type 2 standard	Problems Identified: · Lane widths are poor this corridor. Lane width < 3.5m for 79% of this corridor. Lane width < 3.0m for 58% of this corridor. · Sight distances are poor from Edgeworthstown south to east of Ardagh, from east of Barry to Ballymahon, from Tang to The Pigeons and from Glissan to Ballykeeran. · High incidence of accidents throughout the corridor with a major cluster of serious accidents south of Ballykeeran. · Poor pavement condition between west of Colehill and Tang and from Ballykeeran to Athlone.			Budget Cost (million) €8.81
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		24 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.001 €0.000	No	4.0
	Noise and vibration Landscape and visual quality		24 households affected in 2025	-€0.017	No	3.5
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment may impact indirectly on Lough Rea SAC & pNHA (000440) and Lough Rea SPA (004046).			Yes	2.0
	Landuse	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including two NIAH structures.			No	3.0
	Water resources	The proposed realignments will primarily be within Agricultural Areas with a small proportion through existing Artificial Surfaces. The proposed realignment may impact indirectly on Lough Rea SAC & pNHA (000440) and Lough Rea SPA (004046).			No	4.0
Safety	Accident reduction		0.2 accidents saved in 2025	€4.233	Yes	2.5
	Security					7.0
Economy	Transport Efficiency and Effectiveness	A facility for walkers and cyclists is to be provided where none previously existed.	56 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel	€2.913 €3.875 €0.604	6.8
	Other economic impacts			PVC Residual value	€4.013 €0.285	
	Funding	Not assessed	Imperfect competition effects		€0.387	7.0
	Vulnerable groups Deprived geographic areas	Some of the route corridor is within 4km of a settlement of 1,500 people or more.	0 CLAR zones experience improved access to Hub/Gateway			7.0
Accessibility and Social Inclusion						4.1
Integration	Transport integration					6.0
	Land-use integration					4.6
	Geographical integration					6.4
	Integration with other government policies					4.8
				NPV	€8.267	Total
				BCR	3.06	Red Flagged
						5.7
						Yes

N56.a.1.C2			Name: Coolboy to Kilmacrenan				Type: S2 Type 2			
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118450	1.639	64.5	6.2	3.8	3307	1.577	3.360	0.924	0.178	0.492
85564	1.290	64.5	6.2	3.8	3307	1.241	2.645	0.727	0.140	0.387
Coolboy to Kilmacrenan	Total 2.929					Total 2.818				
<p>Notes:</p> <p>This route begins north of Coolboy and at the end of the recently constructed N56 Mountain Top to Illistrin scheme which passes from Knocknamona on the outskirts of Letterkenny to Coolboy. The existing route is quite bendy and is also hilly in places. The cross section of this route is to Type 3 standard roughly, however the alignment is not to Type 3 standard. There is very limited overtaking opportunity along this corridor. There are no environmentally designated areas in the vicinity of this route. The Leannan River is listed as a SAC but this route crosses the Leannan River within the speed limit restriction of Kilmacrenan.</p> <p>1 No stream crossing. 3 No. very bad bends. High Traffic Good Subgrade – Maintenance Category 2 IRI 2.6 to 3.5 – Maintenance Bracket 2</p>						TOTAL:	6.005	1.651	0.318	0.879
						Any special costs	0.000	0.000	0.000	0.000
						Sub Total	8.853			
						Cycling	+0.662			
						Grand Total	9.515			

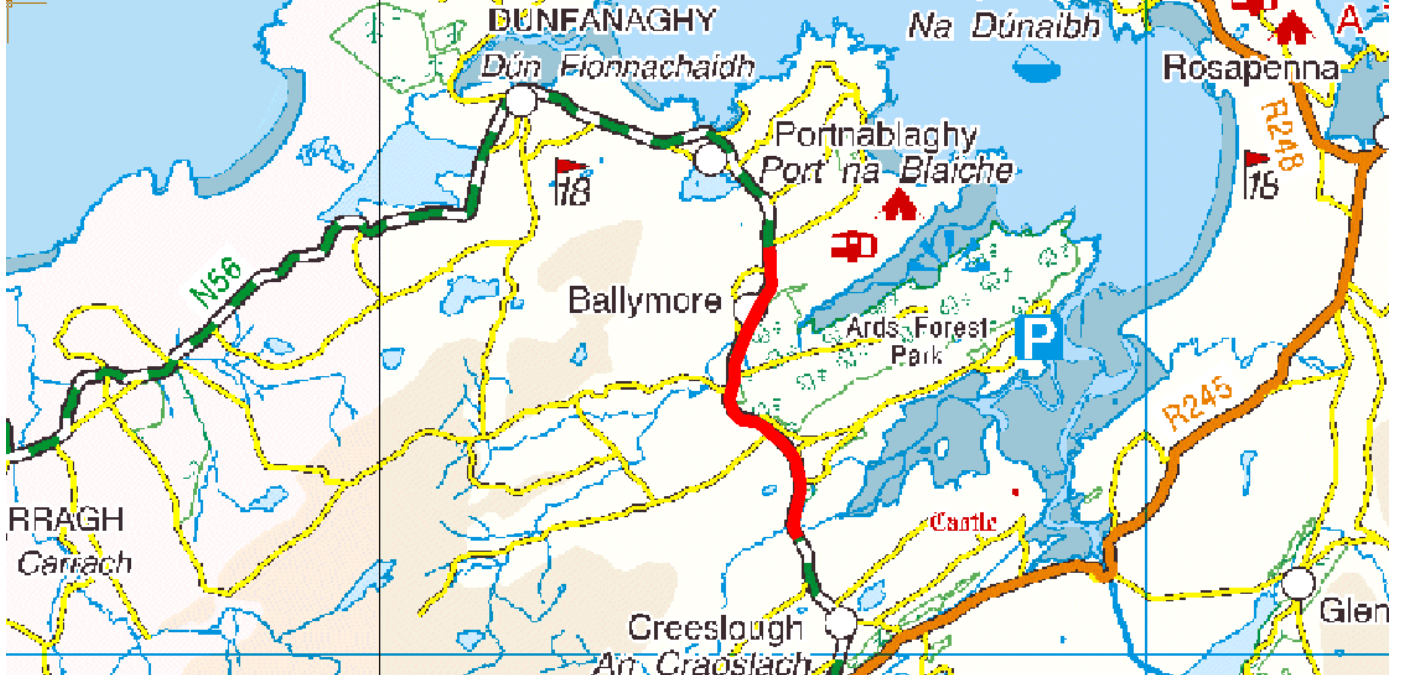
PABS Appraisal Summary Table - N56a.1.C2						
Scheme Option: N56 Coolboy to Kilmacrenan		Description: 2.818km upgrade to S2 Type 2 standard	Problems Identified:			Budget Cost (million) €5.52
			<ul style="list-style-type: none"><li>• Lane width &lt; 3m wide for 43% of the route corridor and &lt;3.5m for 71% of the corridor</li><li>• Intermittent poor visibilities to V=85kph and V=100kph design standards, particularly from south of Creeslough to Pornablahy</li><li>• Relatively high incidence of accidents</li><li>• 25% of the corridor has a pavement condition index, IRI &gt;4.</li></ul>			
Objective	Sub-objective	Qualitative impacts		Quantitative assessment	Monetised (million 30 yrs)	Score
Environment	Air Quality			32 households affected in 2025 -2 tonnes of carbon saved in 2025	-€0.018 €0.000	3.7
	Noise and vibration Landscape and visual quality			32 households affected in 2025	-€0.074	2.7
	Biodiversity			Not assessed		4.0
	Cultural Heritage / archaeology			The proposed realignment may impact indirectly on the River Leannan SAC (002176) and on the Leannan Valley Woods pNHA (001155).		2.5
	Landuse			No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned section.		4.0
	Water resources			The proposed realignments will primarily be within Agricultural Areas but with a large proportion through Forest Semi Natural Areas. The proposed realignment is within the Leannan Freshwater Pearl Mussel catchment and may impact indirectly on the River Leannan SAC (002176) and on the Leannan Valley Woods pNHA (001155).		2.5
Safety	Accident reduction			-0.7 accidents saved in 2025	-€4.168	1.0
Economy	Security			A facility for walkers and cyclists is to be provided where none previously existed.		7.0
	Transport Efficiency and Effectiveness			78 vehicle-hours per day in travel time saved in 2025	€18.344 €7.759 €1.328	7.0
	Other economic impacts			Imperfect competition effects	€6.660 €0.546	7.0
Accessibility and Social Inclusion	Funding			Not assessed	€0.776	4.0
	Vulnerable groups			Some of the route corridor is within 4km of a settlement of 1,500 people or more.		7.0
	Deprived geographic areas			7 CLAR zones experience improved access to Hub/Gateway		7.0
Integration	Transport integration					6.0
	Land-use integration					7.0
	Geographical integration					4.2
	Integration with other government policies					4.0
				NPV	€17.832	Total
				BCR	3.68	Red Flagged
						5.9
						Yes



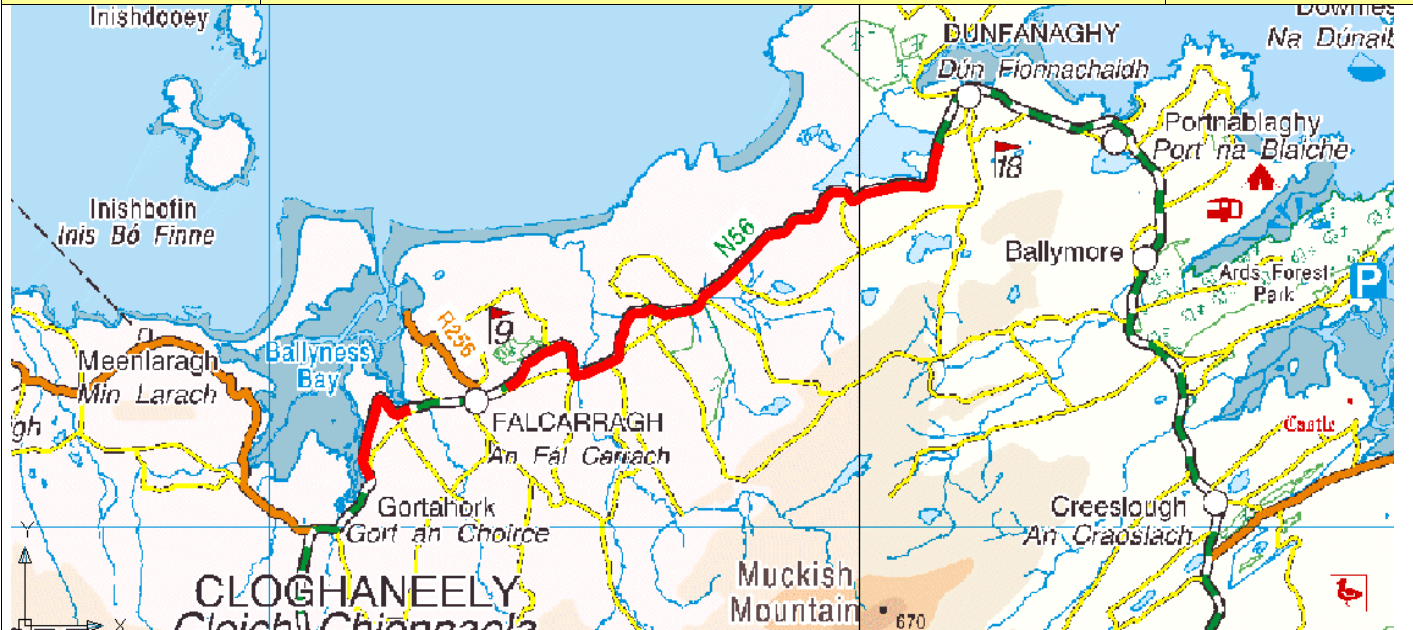
N56.a.2.C3			Name: Kilmacrenan to Creeslough					Type: S2 Type 3			
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
119935 (Former link no. 118452)	1.722 (Former link length2.125)	72.5	1.3	0.1	3307	1.720	1.779	0.166	0.050	0.517	
118453	1.314	72.5	1.3	0.1	3307	1.313	1.357	0.127	0.038	0.394	
118456	3.618	75.5	0.9	0.0	3305	3.618	3.330	0.140	0.048	1.085	
119938 (Former link no. 118455)	5.218 (Former link length5.762)	68	2.2	0.4	3309	5.197	6.106	0.879	0.252	1.565	
Kilmacrenan to Creeslough	Total 11.872					Total 11.848					
<p>Notes:</p> <p>This route is generally quite bendy and has a poor vertical alignment in places. There are however a number of reasonable overtaking opportunities along the route. The first approx 900m after the speed limit restriction at Kilmacrenan this existing route is to Type 2 standard. This section is therefore not considered for upgrade here. There is a recently upgraded T3 pilot section to approx Type 3 standard approx 900m in length, south of the junction with the R255. The costs have been amended to exclude this recently upgraded section. There is a speed limit restriction through Thermon but it is proposed to continue this upgrade through this speed limit restricted area. The final 1.4km before the speed limit restriction at Creeslough is to Type 3 standard (0.6km of this has been recently improved and the other 0.8km is already to Type 3 standard).</p> <p>Improvements to the alignment through the Barnes Gap area will involve rock excavation, which is an NHA. The Lurgy River is listed as a SAC and passes in close proximity to this route. The Owencarrow River and its surrounding area are also listed as an NHA and SAC.</p> <p>1 No. narrow stone bridge over the Lurgy River (to be widened / replaced)</p> <p>1 No. narrow stone bridge at Fawns Bridge (to be widened / replaced)</p> <p>1 No narrow stone bridge over the Owencarrow River (to be replaced and alignment improved – environmental red flag)</p> <p>Bad bends north of Drumdeevin.</p> <p>Bad bends at existing Owencarrow River crossing.</p> <p>6 No stream crossings.</p> <p>Very poor pavement condition through Barnes Gap.</p> <p>Moderate to steep side slopes with narrow road reservation through Barnes Gap.</p> <p>A stone pier from the dismantled railway line is obstructing the alignment at Barnes Gap and will either have to be removed or avoided as part of an upgrade.</p> <p>High Traffic Poor Subgrade – Maintenance Category 4</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p> <p>Link 118452 split @ approx (213323, 421077) Resulting Scheme Link 119935</p> <p>Link 118455 split @ approx (205959, 428927) Resulting Scheme Link 119938</p>							TOTAL:	12.572	1.312	0.387	3.562
							Any special costs	-1.483 0.500	-0.155	-0.046	-0.420
							Sub Total Cycling Grand Total	16.229 +2.784 19.013			

PABS Appraisal Summary Table - N56a.2.C3						
Scheme Option: N56 Kilmacrenan to Creeslough		Description: 11.848km upgrade to S2 Type 3 standard	Problems Identified:			
			<ul style="list-style-type: none"> <li>• Lane width &lt; 3m wide for 43% of the route corridor and &lt;3.5m for 71% of the corridor</li> <li>• Intermittent poor visibilities to V=85kph and V=100kph design standards, particularly from south of Creeslough to Portnablahy</li> <li>• Relatively high incidence of accidents</li> <li>• 25% of the corridor has a pavement condition index, IRI &gt;4.</li> </ul>			
			Budget Cost (million) €9.01			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		57 households affected in 2025 -2 tonnes of carbon saved in 2025	-€0.048 €0.000	No	3.5
	Noise and vibration Landscape and visual quality	Not assessed	57 households affected in 2025	-€0.075	No	3.2
	Biodiversity	The proposed realignment may impact directly on the River Leannan SAC (002176), the Cloghernagore Bog and Glenveagh National Park SAC (002047), Derriscigh Bog pNHA (001114), Sheephaven SAC (001190) and pNHA, and indirectly on the Leannan Valley Woods pNHA (001155).			Not assessed	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Ritual Site – Holy Well.			Yes	1.0
	Landuse	The proposed realignments will primarily be within Wetlands and Agricultural Areas but two sections are through Forest Semi Natural Areas.			No	3.0
Safety	Water resources	The proposed realignment is within the Leannan Freshwater Pearl Mussel catchment and may impact directly on the River Leannan SAC (002176). It is also within the Owencarrow Freshwater Pearl Mussel catchment and directly crosses the Owencarrow River.			Yes	2.5
	Accident reduction	A facility for walkers and cyclists is to be provided where none previously existed.	0.6 accidents saved in 2025	-€0.036		4.0
Economy	Security					7.0
	Transport Efficiency and Effectiveness		31 vehicle-hours per day in travel time saved in 2025	Non-work €11.434 Work €1.714 Active travel €1.460		5.9
	Other economic impacts		Imperfect competition effects	PVC €11.740 Residual €0.828		
	Funding	Not assessed		€0.171		4.6
Accessibility and Social Inclusion	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.0
	Deprived geographic areas		3 CLAR zones experience improved access to Hub/Gateway			5.0
	Transport integration					5.9
	Land-use integration					6.0
Integration	Geographical integration					7.0
	Integration with other government policies					4.2
						4.0
						6.3
				NPV	€3.710	Total
				BCR	1.32	Red Flagged
						5.5
						Yes



N56.a.3.C2			Name: Creeslough to Portnablathy					Type: S2 Type 2		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118458	0.252	68	5.3	2.7	3306	0.245	0.483	0.123	0.024	0.076
118460	4.146	74.5	2.1	0.6	3304	4.121	6.388	1.126	0.236	1.244
Creeslough to Portnablathy	Total 4.398					Total 4.366				
<p>Notes:</p> <p>From Creeslough to Portnablathy the alignment is close to Type 2 standard in cross section. The horizontal and vertical alignments may however be below this standard. The existing pavement condition for this section is quite good and may have been recently upgraded or resurfaced. Therefore this upgrade is included mainly for alignment improvement purposes.</p> <p>There are a number of inlets to the east of this route including Ards Strand and The Black Strand. These inlets are environmentally designated as combined NHA's and SAC's. The existing Clon Bridge over the Faymore River is wide enough to accommodate this upgrade.</p> <p>The existing bridge over the Derrvan River is wide enough to accommodate this upgrade.</p> <p>High Traffic Poor Subgrade – Maintenance Category 4</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p>						TOTAL:	6.871	1.250	0.261	1.319
						Any special costs	0.000	0.000	0.000	0.000
						Sub Total	9.701			
						Cycling	+1.026			
Grand Total	10.727									

PABS Appraisal Summary Table - N56a.3.C2						
Scheme Option: N56 Creeslough to Portnablathy		Description: 4.366km upgrade to S2 Type 2 standard	Problems Identified:			
			<ul style="list-style-type: none"> <li>• Lane width &lt; 3m wide for 43% of the route corridor and &lt;3.5m for 71% of the corridor</li> <li>• Intermittent poor visibilities to V=85kph and V=100kph design standards, particularly from south of Creeslough to Portnablathy</li> <li>• Relatively high incidence of accidents</li> <li>• 25% of the corridor has a pavement condition index, IRI &gt;4.</li> </ul>			
			Budget Cost (million) €0.73			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		19 households affected in 2025	-€0.017	No	3.7
	Noise and vibration		-1 tonnes of carbon saved in 2025	€0.000	No	3.5
	Landscape and visual quality	Not assessed	19 households affected in 2025	-€0.027	Not assessed	4.0
	Biodiversity	The proposed realignment will impact directly on Sheephaven SAC (001190) and pNHA, with potential for indirect impacts to Sessiagh Lough SAC (000185).			Yes	1.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Graveyard, a Church, an Enclosure and a Ringfort.			No	3.0
Safety	Landuse	The proposed realignments will be within a combination of Agricultural Areas, Wetlands, Forest Semi Natural Areas, Waterbodies and on existing Artificial Surfaces.			No	4.0
	Water resources	The proposed realignment has potential for indirect impacts to Sessiagh Lough SAC (000185). It also crosses the Carrownamaddy River and the Faymore River.			Yes	2.5
	Accident reduction	A facility for walkers and cyclists is to be provided where none previously existed.	-0.1 accidents saved in 2025	€0.424		4.5
Economy	Security					7.0
	Transport Efficiency and Effectiveness		9 vehicle-hours per day in travel time saved in 2025	Non-work Work		4.3
				Active travel		
				PVC Residual value		
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	€0.038		4.2
	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				5.0
	Deprived geographic areas		1 CLAR zones experience improved access to Hub/Gateway			4.6
Integration	Transport integration					
	Land-use integration					6.0
	Geographical integration					7.0
	Integration with other government policies					4.2
						4.0
				NPV	Total	5.0
				BCR	Red Flagged	Yes
						0.35

N56.b.1.C3			Name: Dunfanaghy to Gortahork (break at Falcarragh)					Type: S2 Type 3				
												
Scheme Definition			Modelled as		OT Input		Scheme Cost €m					
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S		
118461	6.444	66	2.4	0.5	3310	6.412	7.855	1.255	0.355	1.933		
118462	3.739	62	5.1	2.0	3310	3.664	4.838	0.887	0.246	1.122		
Break at Falcarragh												
118464	0.840	62	5.1	2.0	3310	0.823	1.087	0.199	0.055	0.252		
118463	1.235	72.5	1.4	0.0	3307	1.235	1.276	0.119	0.036	0.371		
Dunfanaghy to Falcarragh	Total 12.258					Total 12.134						
<p>Notes:</p> <p>The section from Dunfanaghy to Falcarragh is very bendy and hilly in places and has a very poor horizontal alignment with intermittent short overtaking and non-overtaking sections. There are only a few very limited overtaking opportunities near Dunfanaghy. At isolated cross sections this route are to Type 3 width and even Type 2 in places and hence the cross-section is quite variable however the horizontal and vertical alignment is not to type 3 standard. The section from Falcarragh to Gortahork has two bad bends but also has a decent straight section at which there is a moderate overtaking opportunity. This part of the N56 is also characterised by the extent of houses developed along this route. The additional costs of the sidelong section for approx 1km at this location is offset against the saving that could be achieved by tying in to the 0.86km straight section to Type 3 standard in this area also. There is a narrow bridge over the Tullaghobegly River just outside the speed limit restriction after Falcarragh. This bridge could possibly be kept in place and the upgrade commenced immediately after the bridge.</p> <p>The New Lake area is environmentally designated as an SPA, NHA and SAC. This route passes very close to this environmentally sensitive area.</p> <p>Possible marshy area near Ballyboe (approx 1km)</p> <p>1 No. very narrow stone bridge over Ray River (will need to be replaced)</p> <p>1 No. narrow stone bridge over River Ray tributary (to be widened / replaced)</p> <p>1 No. River Ray tributary crossings at Owenwee Bridge (to be widened / replaced).</p> <p>2 No stream crossings.</p> <p>Moderate side long construction for approx 1 km at the coastal area from Killult Lower to Gortahork.</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p>							TOTAL:	15.055	2.460	0.691	3.677	
							Any special costs	0.500	0.000	0.000	0.000	
							Sub Total Cycling Grand Total					22.383 +2.851 25.234

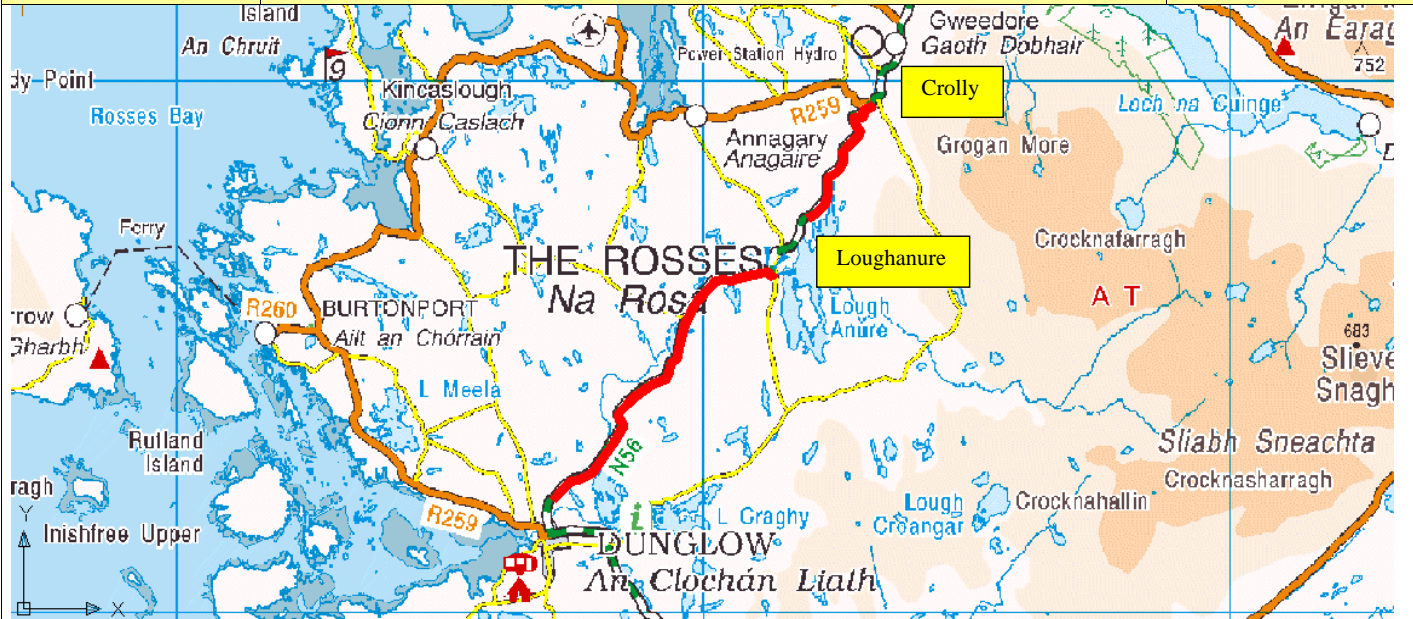
PABS Appraisal Summary Table - N56b.1.C3							
Scheme Option: N56 Dunfanaghy to Gortahork (break at Falcarragh)		Description: 12.134km upgrade to S2 Type 3 standard		Problems Identified: <ul style="list-style-type: none"><li>Lane width &lt; 3m for majority of this section of the route</li><li>Intermittent poor visibilities to V=85kph and V=100kph design standards</li><li>Accident cluster for 5km west of Dunfanaghy</li><li>Accident cluster from Falcarragh to Gortahork. An Accident Blackspot is identified at near Gortahork.</li><li>62% of the corridor has a pavement condition indicator index, IRI&gt;4.</li></ul>		Budget Cost (million) <b>€5.23</b>	
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag		Score
Environment	Air Quality		74 households affected in 2025 0 tonnes of carbon saved in 2025	€0.002 €0.000 -€0.044	No No Not assessed Yes		4.0 3.7 4.0 1.0
	Noise and vibration Landscape and visual quality		Not assessed				
	Biodiversity		The proposed realignment will impact directly on Horn Head to Fanad Head SPA (004194, Horn Head and Rinclevan SAC (000147) and pNHA, to Ballyness Bog SAC (001090) and pNHA.				
	Cultural Heritage / archaeology		No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including two Ringforts, an Altar and a Burial Site.				
	Landuse		The proposed realignments will primarily be within Agricultural Areas but two sections are through Wetlands and one section is through a Forest Semi Natural Area.				
	Water resources		The proposed realignment will impact directly on Ballyness Bog SAC (001090) and pNHA, and also crosses the River Ray which discharges to Ballyness Bog SAC (001090) and pNHA.				
Safety	Accident reduction		0.4 accidents saved in 2025	-€3.057		2.4	2.9
	Security		A facility for walkers and cyclists is to be provided where none previously existed.			7.0	
	Transport Efficiency and Effectiveness		46 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel PVC Residual value	€8.215 €4.245 €1.662 €15.773 €1.198	5.3	5.3
Economy	Other economic impacts		Imperfect competition effects		€0.424	5.1	
	Funding		Not assessed			4.0	
	Vulnerable groups Deprived geographic areas		None of the route corridor is within 4km of a settlement of 1,500 people or more.	1 CLAR zones experience improved access to Hub/Gateway		5.0 6.0	5.5
Accessibility and Social Inclusion	Transport integration					6.0	6.1
	Land-use integration					6.7	
	Geographical integration					4.0	
Integration	Integration with other government policies					4.0	
				NPV	-€3.128	Total	5.1
				BCR	0.80	Red Flagged	Yes




N56.b.2.C3			Name: Gortahork to Crolla (Gweedore)					Type: S2 Type 3			
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
118466	2.782	72.5	1.4	0.0	3307	2.782	2.874	0.268	0.081	0.835	
118465	6.240	76.5	0.7	0.0	3304	6.240	5.487	0.111	0.046	1.872	
84652	3.300	69	2.0	0.4	3308	3.287	3.772	0.508	0.147	0.990	
84651	2.290	69	2.0	0.4	3308	2.281	2.617	0.353	0.102	0.687	
118468	0.952	69	2.0	0.4	3308	0.948	1.088	0.147	0.042	0.286	
Gortahork to Crolla (Gweedore)	Total 15.564					Total 15.538					
<p>Notes:</p> <p>This route is predominantly narrow and quite hilly which may be due to poor subgrade. The route is also bendy in places. There is also a section of the route that is sidelong in nature. There are two good overtaking sections; the first of these is at Fawnboy Upper and the second is located between Fawnboy and the junction with the R251. There is a section from Fawnboy to the junction with the R251 that appears to have been recently resurfaced and possibly widened slightly. It is thought that this 3.25km section is roughly to Type 3 standard and therefore the costs of this section have been removed from the analysis. The 3.25km section from east of the junction with the R251 until the bridge over the Clady River is also to between Type 2 and Type 3 standard as it has an approx 1 to 1.5m hard strip on the northern side. It is therefore not proposed to upgrade this section either and the costs have been reduced to reflect this. The section from the bridge over the stream from the power station to Crolla is quite bendy and has no overtaking sections of note. The cross section may be to Type 3 standard over this section but the horizontal and vertical alignment is not to Type 3 standard. This section of the N56 is characterised by the extent of housing built along the corridor.</p> <p>There are a number of environmentally designated areas to the south east of this route near the junction with the R251. The areas are listed as NHA's and SAC's and include Lough Nacung Upper, Lough Nacung Lower, Lough Trusk, Lough Nacuskers, Lough Nacrick and also the wetlands areas in the vicinity of these loughs.</p> <p>Side long construction for approx 1.5km.</p> <p>Poor subgrade / marshy for approx 2km at Fawnaboy</p> <p>The bridge over the Clady River and the one beside it over the stream from the power station are considered wide enough that they will not require upgrades.</p> <p>1 No narrow stone bridge over Aspick River to be widened / replaced.</p> <p>7 No stream crossings.</p> <p>High Traffic Poor Subgrade – Maintenance Category 4</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p>						TOTAL:	15.838	1.387	0.417	4.669	
						Any special costs	1.000 -6.614	-0.579	-0.174	-1.950	
						Sub Total Cycling Grand Total					13.994 <b>+3.651</b> 17.645

PABS Appraisal Summary Table - N56b.2.C3						
Scheme Option: N56 Gortahork to Crolly (Gweedore)	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Score	
					Red Flag	Score
<b>Description:</b> 15.538km upgrade to S2 Type 3 standard  <b>Problems Identified:</b> <ul style="list-style-type: none"> <li>• Lane width &lt; 3m for majority of this section of the route</li> <li>• Intermittent poor visibilities to V=85kph and V=100kph design standards</li> <li>• Accident cluster for 5km west of Durlanaghy</li> <li>• Accident cluster from Falcarragh to Gortahork. An Accident Blackspot is identified at near Gortahork.</li> <li>• 62% of the corridor has a pavement condition indicator index, IRI&gt;4.</li> </ul>	Air Quality		76 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.003 €0.000	No	4.0
	Noise and vibration Landscape and visual quality		76 households affected in 2025	-€0.073	No	3.2
	Biodiversity				Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will impact directly on the Clady Freshwater Pearl Mussel catchment and the Fawnboy Bog/Lough Nacung SAC (000140) and pNHA. Potential for indirect impacts exist for Cloghernagore Bog and Glenveagh National Park SAC (002047) and pNHA, and Crolly Bridge Woods pNHA (001102).			Yes	1.0
	Landuse	No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned section.			No	4.0
	Water resources	The proposed realignments will primarily be within Wetlands and Agricultural Areas but one section is through a Forest Semi Natural Area.			No	4.0
		The proposed realignment will impact directly on the Clady Freshwater Pearl Mussel catchment and the Fawnboy Bog/Lough Nacung SAC (000140) and pNHA. It also directly crosses the Aspick River and the directly impacts on the Clady Freshwater Pearl Mussel catchment.			Yes	2.5
	Accident reduction Security		0.1 accidents saved in 2025	-€0.099		3.9
	Transport Efficiency and Effectiveness	A facility for walkers and cyclists is to be provided where none previously existed.				7.0
			12 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel PVC Residual value €1.392 €0.402 €1.523 €1.031 €0.775 €0.040		4.5
<b>Accessability and Social Inclusion</b>  <b>Integration</b>	Other economic impacts		Imperfect competition effects			4.1
	Funding					4.0
	Vulnerable groups					5.0
	Deprived geographic areas	None of the route corridor is within 4km of a settlement of 1,500 people or more.				4.4
	Transport integration					6.0
	Land-use integration					6.7
	Geographical integration					4.0
	Integration with other government policies					4.0
						6.1
				NPV	-€7.074	<b>Total</b>
				BCR	0.36	<b>Red Flagged</b>
						<b>4.9</b>
						<b>Yes</b>



N56.c.1.C3			Name: Crolly to Dunglow (break at Loughanure)					Type: S2 Type 3			
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
119939 (Former link no. 118469)	2.873 (Former link length 3.323)	60.5	7.6	3.6	3308	2.770	3.776	0.717	0.197	0.862	
Break at Loughanure						0.000					
118474	0.436	60.5	7.6	3.6	3308	0.420	0.573	0.109	0.030	0.131	
118473	6.213	71	1.3	0.1	3308	6.207	6.728	0.760	0.224	1.864	
Crolly to Dunglow	Total 9.522					Total 9.397					
<p>Notes:</p> <p>Between Crolly and Loughanure this route is generally very bendy, especially coming out of Crolly. The section of route parallels the Gweedore River giving a sidelong profile in many cases (approx 1.5km of the route). The subgrade may be poor over this section especially where the route passes close to the river. The river alignment also constrains the road alignment. There is very limited overtaking opportunity along this section of the route. At the approach to the Loughanure speed restriction there is an on road cycleway for approx 450m and continuing past the speed limit into Loughanure. This 450m section is not recommended for upgrade here.</p> <p>From Loughanure to Dunglow the route is generally bendy and hilly and would benefit from horizontal and vertical alignment improvements though the widths are close to or at Type 3 standard. There is very limited overtaking opportunity on this section also. From Loughanure the landscape features peaty / boggy areas and frequent rock outcropping. Much of this corridor winds through a relatively flat landscape.</p> <p>Dunglow Lough is environmentally designated as both an NHA and an SAC.</p> <p>The existing bridge over the stream / river that flows into Dunglow Lough appears to be wide enough to accommodate this upgrade.</p> <p>7 No. stream crossings.</p> <p>Low Traffic Poor Subgrade – Maintenance Category 3</p> <p>IRI 2.6 to 3.5 – Maintenance Bracket 2</p> <p>Split Link 118469 @ (181976, 417429) Resulting Link 119939</p>						TOTAL:	11.077	1.586	0.451	2.857	
						Any special costs	0.500	0.000	0.000	0.000	
						Sub Total Cycling Grand Total					16.471 <u>+2.208</u> 18.679


PABS Appraisal Summary Table - N56c.1.C3						
Scheme Option: N56 Crolly to Dunglow (break at Loughanure)	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Score	
					Red Flag	Score
<b>Description:</b> 9.397km upgrade to S2 Type 3 standard	<b>Problems Identified:</b> <ul style="list-style-type: none"> <li>• Lane width &lt; 3m from Gweedore to south of Loughanure</li> <li>• Lane width &lt; 3m on northern approach to Dunglow</li> <li>• Overall, Lane widths are &lt; 3m for circa 70% of the corridor</li> <li>• Sight distances are poor from Gweedore to south of Loughanure and on the approach to Dunglow for both 85kph and 100kph design standards.</li> <li>• High incidence of accidents throughout the corridor.</li> </ul>					<b>Budget Cost (million) €18.68</b>
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		36 households affected in 2025 1 tonnes of carbon saved in 2025	€0.004 €0.000	No	4.0
	Noise and vibration Landscape and visual quality		36 households affected in 2025	-€0.030	No	3.7
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will impact directly on Crolly Bridge Woods pNHA (001102), Cronaguddy Bog pNHA (001176), and Cloghernagore Bog and Glenveagh National Park SAC (002047) and pNHA.			Yes	1.0
	Landuse	No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned section.			No	4.0
	Water resources	The proposed realignments will primarily be within Wetlands but a few small sections are through Agricultural Areas. The proposed realignment will impact directly on Cronaguddy Bog pNHA (001176), and directly crosses the Gweedore River and the Dunglow River.			No	3.0
Safety	Accident reduction Security		0.4 accidents saved in 2025	-€2.570		2.3
Economy	Transport Efficiency and Effectiveness	A facility for walkers and cyclists is to be provided where none previously existed.				7.0
			53 vehicle-hours per day in travel time saved in 2025	Non-work Work €13.942 €4.720		6.6
				Active travel €1.846		
				PVC Residual value €1.955 €0.858		
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	€0.472		5.6
	Funding	Not assessed				4.0
	Vulnerable groups Deprived geographic areas	None of the route corridor is within 4km of a settlement of 1,500 people or more.				5.0
Integration			0 CLAR zones experience improved access to Hub/Gateway			3.9
	Transport Integration					6.0
	Land-use integration					6.7
	Geographical integration Integration with other government policies					4.0
				NPV	€7,288	<b>Total</b>
				BCR	1.61	<b>Red Flagged</b>
						<b>5.5</b>
						<b>Yes</b>

N56.d.1.C3			Name: Dunglow to Lettermacaward					Type: S2 Type 3				
												
Scheme Definition			Modelled as		OT Input		Scheme Cost €m					
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S		
119941 (Former link no. 118476)	2.576 (Former link length3.011)	65.5	4.0	1.4	3308	2.540	3.168	0.517	0.146	0.773		
118477	0.577	65.5	4.0	1.4	3308	0.569	0.710	0.116	0.033	0.173		
118480	4.075	72.5	1.5	0.0	3306	4.075	4.209	0.393	0.118	1.223		
118479	2.705	59.5	5.5	2.2	3310	2.645	3.586	0.694	0.190	0.812		
118482	1.511	59.5	5.5	2.2	3310	1.478	2.003	0.388	0.106	0.453		
Dunglow to Lettermacaward	Total 11.444					Total 11.307						
<p>Notes:</p> <p>This route is quite bendy and hilly with widths close to or at Type 3 standards. The route is very bendy for and hilly for approx 1km either side of the junction with the R252. This route is extremely bendy and hilly from Meenacarn for approx 1.3km until north of Lough Acrockan where the landscape is sidelong and rock outcrops are frequent. There are very limited overtaking sections along this route. Where straight sections exist the overtaking is hampered by the poor vertical alignment. It is not proposed to upgrade the first 975m of this route outside the speed limit restriction at Dunglow as it is close to Type 2 standard, a short section of it has been recently upgraded to include a right turn lane, much of it also has a footpath to the south side and the section around Dunglow Lough has existing retaining walls and will be difficult to upgrade. It is therefore proposed to start this upgrade south of Dunglow Lough.</p> <p>There is also a recently upgraded section to circa Type 3 standard, (widths only but still a non overtaking section) for approximately 600m west of Oughtmeen. This upgraded section has been subtracted from the costs.</p> <p>This route corridor is characterised by varying peaty / boggy and rock outcropping terrain. To the east of this route there are a number of areas environmentally designated as both NHA's and SAC's. These include Dunglow Lough; Lough Craghy; Lough Fad; Drummeen Hill; Meenlecknalore Lough; Lough Namurrig; Lough Garrive; Lough Sallagh; Lough Machugh; and the Gweebarra River estuary.</p> <p>1 No Owennamarve River crossing (existing stone bridge is narrow and on a bad bend, will need to be replaced). (cost added).</p> <p>1 No stream crossing south of Meenacarn. Existing bridge is narrow and on a bad bend, may need to be replaced. (cost added).</p> <p>3 No stream crossings.</p> <p>Possible poor subgrade for much of this route with wetland / boggy areas visibly (cost added) but rock outcrops also visible in places.</p> <p>Low Traffic Poor Subgrade – Maintenance Category 3</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p> <p>Split link 118476 @ approx (178180, 411200) resulting link 119941.</p>							TOTAL:	13.677	2.108	0.592	3.433	
							Any special costs	3.200 -1.165	-0.180	-0.050	-0.292	
							Sub Total					21.323
							Cycling					+2.657
Grand Total					23.980							

PABS Appraisal Summary Table - N56d.1.C3						
Scheme Option: N56 Dunglow to Lettermacaward		Description: 11.307km upgrade to S2 Type 3 standard	Problems Identified:			
			<ul style="list-style-type: none"> <li>All of corridor has lane widths &lt; 3m</li> <li>Intermittent sightline problem for 6km-7km south of Dunglow for 85kph design standard.</li> <li>Pronounced sightline problem adjacent to Trevenagh Bay for both 85kph and 100kph design standards.</li> <li>Pronounced sightline problem adjacent to Gweebarra Bay for both 85kph and 100kph design standards for circa 5km.</li> <li>Intermittent sightline problem on approach to Glenties for 100kph design standard, slightly less so for the 85kph design standard.</li> <li>Poor pavement condition with significant portion of the route with IRI &gt; 4.</li> </ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		52 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.006 €0.000	No	4.0
	Noise and vibration Landscape and visual quality		52 households affected in 2025	-€0.073	No	3.4
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will impact directly on Cloghemagore Bog and Glenveagh National Park SAC (002047) and pNHA, and Gannivegil Bog SAC (000142) and pNHA. There is also potential for indirect impacts to the West of Ardara/Maas Road SAC (000197) and pNHA, and Trawenagh Bay (Shellfish Area). No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned section.			Yes	1.0
	Landuse	The proposed realignments will primarily be within Wetlands Agricultural Areas but some small sections are through Agricultural Areas and Forest Semi Natural Areas.			No	4.0
Safety	Water resources	The proposed realignments in this section of the N56 will cross the Owernamave River which discharges to the Trawenagh Bay (Shellfish Area).			No	3.0
	Accident reduction Security	A facility for walkers and cyclists is to be provided where none previously existed.	0.5 accidents saved in 2025	-€2.632		2.6
Economy	Transport Efficiency and Effectiveness		62 vehicle-hours per day in travel time saved in 2025	€15.741 €6.276 €0.974		6.3
	Other economic impacts		Imperfect competition effects	PVC Residual value €15.005 €1.107 €0.628		5.7
	Funding	Not assessed				4.0
Accessibility and Social Inclusion	Vulnerable groups Deprived geographic areas	None of the route corridor is within 4km of a settlement of 1,500 people or more.	1 CLAR zones experience improved access to Hub/Gateway			5.0
	Transport integration Land-use integration Geographical integration Integration with other government policies					4.2
Integration	Transport integration					5.0
	Land-use integration					6.7
	Geographical integration					4.1
Integration	Integration with other government policies					4.1
				NPV €7,010	Total	5.4
				BCR 1.47	Red Flagged	Yes

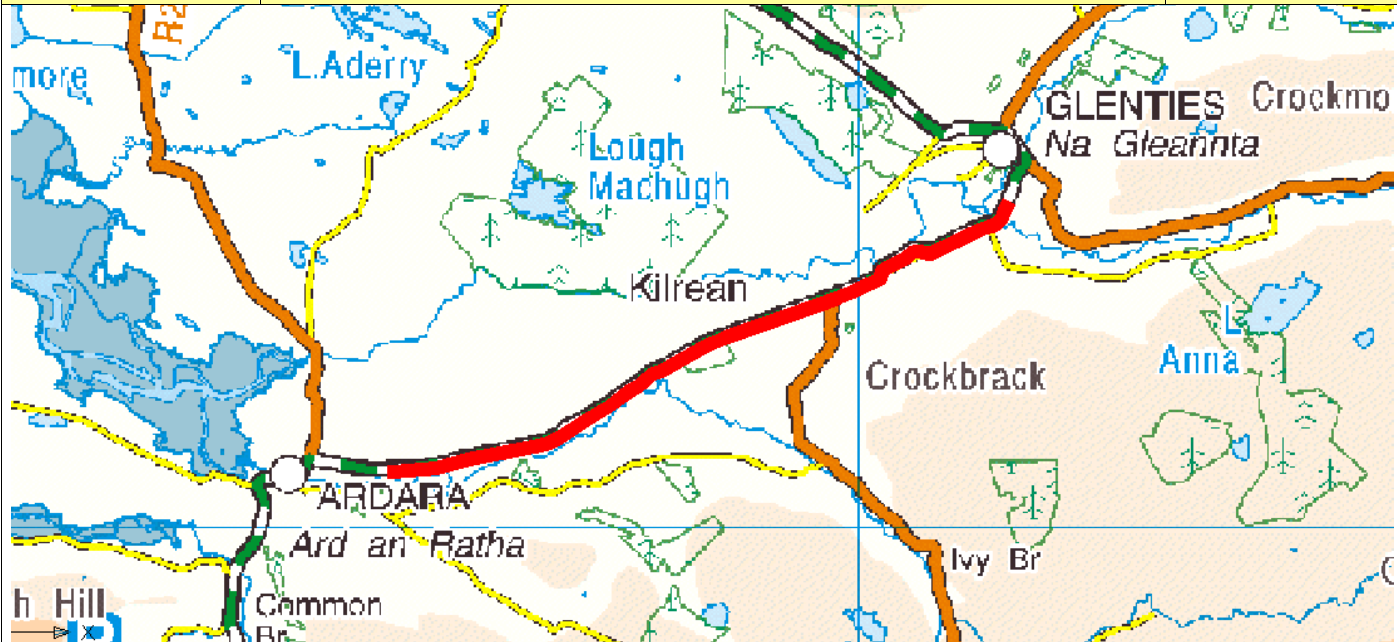
Budget  
Cost  
(million)  
€23.98



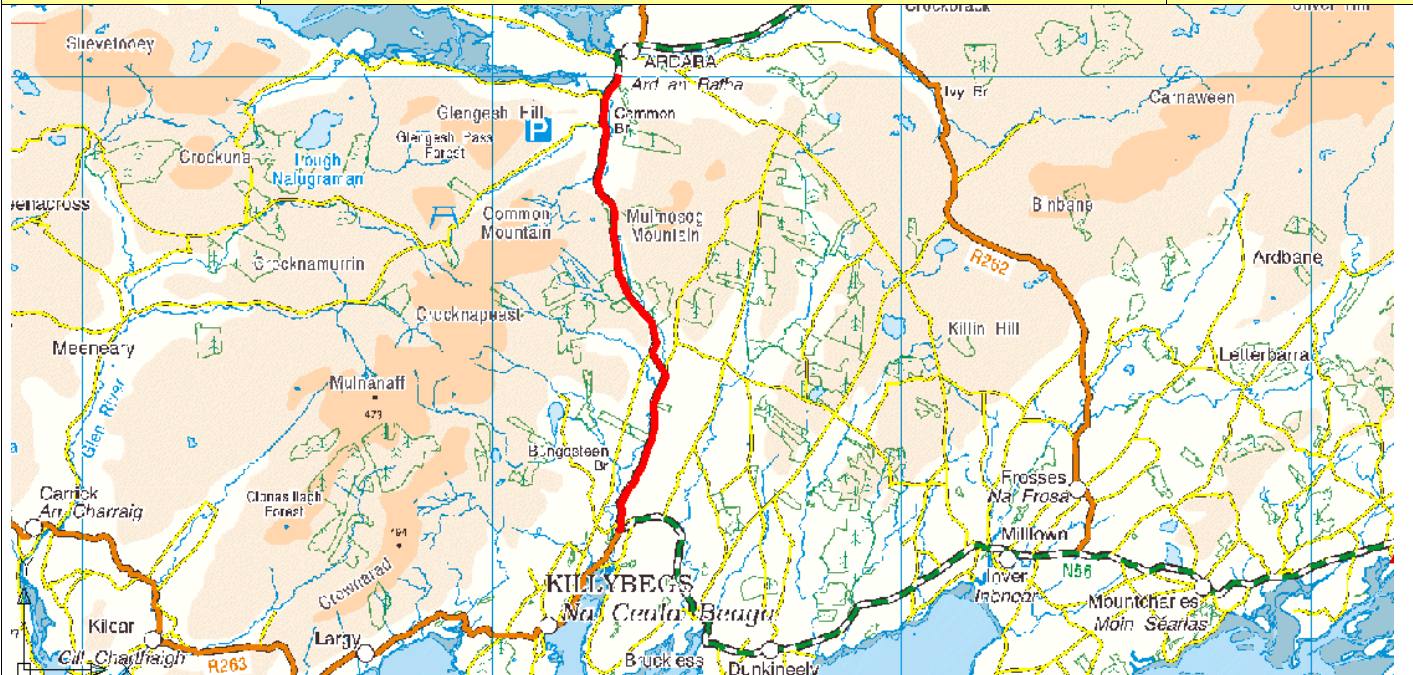
N56.d.2.C3			Name: Lettermacaward to Glenties					Type: S2 Type 3		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118486	0.590	59.5	5.5	2.2	3310	0.577	0.782	0.151	0.041	0.177
118485	5.603	46.5	13.6	7.6	3304	5.177	7.583	1.558	0.415	1.681
118488	5.318	73.5	1.2	0.0	3306	5.318	5.304	0.415	0.127	1.595
118487	0.589	67	3.2	0.8	3308	0.584	0.704	0.107	0.031	0.177
Lettermacaward to Glenties	Total 12.100					Total 11.656				
<p>Notes:</p> <p>This route is narrow and extremely bendy and hilly from Lettermacaward to Maas. This section will be difficult to upgrade due to the topography and the proliferation of dwellings along the route. The existing Gweebarra Bridge is sufficiently wide so it is proposed that this upgrade tie in either side of this bridge. (the length of this bridge 215m has therefore been removed from the costs) From Gweebarra Bridge to Maas much of the cross section is sidelong and quite steep in places. The current alignment is extremely poor with a very bendy and hilly alignment with no overtaking. Therefore any upgrade over this section would come at an increased construction cost. Between Maas and Glenties there is a relatively straight section but overtaking is hampered by slight changes in the horizontal alignment and also by the vertical alignment. The quality of this section of route could be greatly improved by smoothing out the vertical and horizontal alignments over this section. This section is characterised by rock outcropping and peaty / boggy terrain. The Gweebarra River estuary and also the lakes and forrest area to the southwest of the route are environmentally designated as NHA's' and SAC's. Sidelong construction for approx 4km. Approx 2km of this is steep (add const cost) The Mass River bridge near the junction with the R261 is sufficiently wide for this upgrade and this junction with the R261 has been recently upgraded to Type 2 standard. (this 220m upgraded section has also been removed from the costs). The narrow stone Sruthangarve Bridge will have to be replaced as it is on a bend. (add const cost)</p> <p>11 No. stream crossings.</p> <p>Possible poor subgrade over some sections between Maas and Glenties (add const cost)</p> <p>Low Traffic Poor Subgrade – Maintenance Category 3</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p>						TOTAL:	14.373	2.232	0.614	3.630
						Any special costs	2.376 0.200 0.891 -0.517	0.553 -0.080	-0.022	-0.131
Sub Total						24.119				
Cycling						+2.739				
Grand Total						26.858				

PABS Appraisal Summary Table - N56d.2.C3						
Scheme Option: N56 Lettermacaward to Glenties		Description: 11.656km upgrade to S2 Type 3 standard	Problems Identified:			
			<ul style="list-style-type: none"> <li>All of corridor has lane widths &lt; 3m</li> <li>Intermittent sightline problem for 6km-7km south of Dunglow for 85kph design standard.</li> <li>Pronounced sightline problem adjacent to Trevenagh Bay for both 85kph and 100kph design standards.</li> <li>Pronounced sightline problem adjacent to Gweebarra Bay for both 85kph and 100kph design standards for circa 5km.</li> <li>Intermittent sightline problem on approach to Glenties for 100kph design standard, slightly less so for the 85kph design standard.</li> <li>Poor pavement condition with significant portion of the route with IRI &gt; 4.</li> </ul>			
			Budget Cost (million) €26.86			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		63 households affected in 2025	-€0.040	No	3.7
	Noise and vibration		-2 tonnes of carbon saved in 2025	€0.000	No	2.4
	Landscape and visual quality	Not assessed	63 households affected in 2025	-€0.245	Not assessed	4.0
	Biodiversity	The proposed realignment will impact directly on the West of Ardara/Maas Road SAC (000197) and pNHA, and the Owenea Freshwater Pearl Mussel catchment.			Yes	1.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Ritual Site – Holy Well and a Ringfort.			No	3.0
Landuse		The proposed realignments will primarily be within Agricultural Areas and Wetlands but two sections are through Waterbodies and two sections are through Forest Semi Natural Areas.			No	4.0
	Water resources	The proposed realignments in this section of the N56 will impact directly on the Owenea Freshwater Pearl Mussel catchment.			Yes	2.5
	Accident reduction		0.4 accidents saved in 2025	-€1.294		3.4
Safety	Security	A facility for walkers and cyclists is to be provided where none previously existed.				7.0
Economy	Transport Efficiency and Effectiveness		160 vehicle-hours per day in travel time saved in 2025	Non-work Work €12.925 €17.794		6.5
				Active travel €0.683		
				PVC €18.533 Residual value €1.300		
Other economic impacts			Imperfect competition effects	€1.779		7.0
	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				5.0
Accessibility and Social Inclusion	Deprived geographic areas		1 CLAR zones experience improved access to Hub/Gateway			3.9
Integration	Transport integration					5.0
	Land-use integration					6.7
	Geographical integration					4.1
	Integration with other government policies					4.1
				NPV €14.370	Total	5.5
				BCR 1.78	Red Flagged	Yes



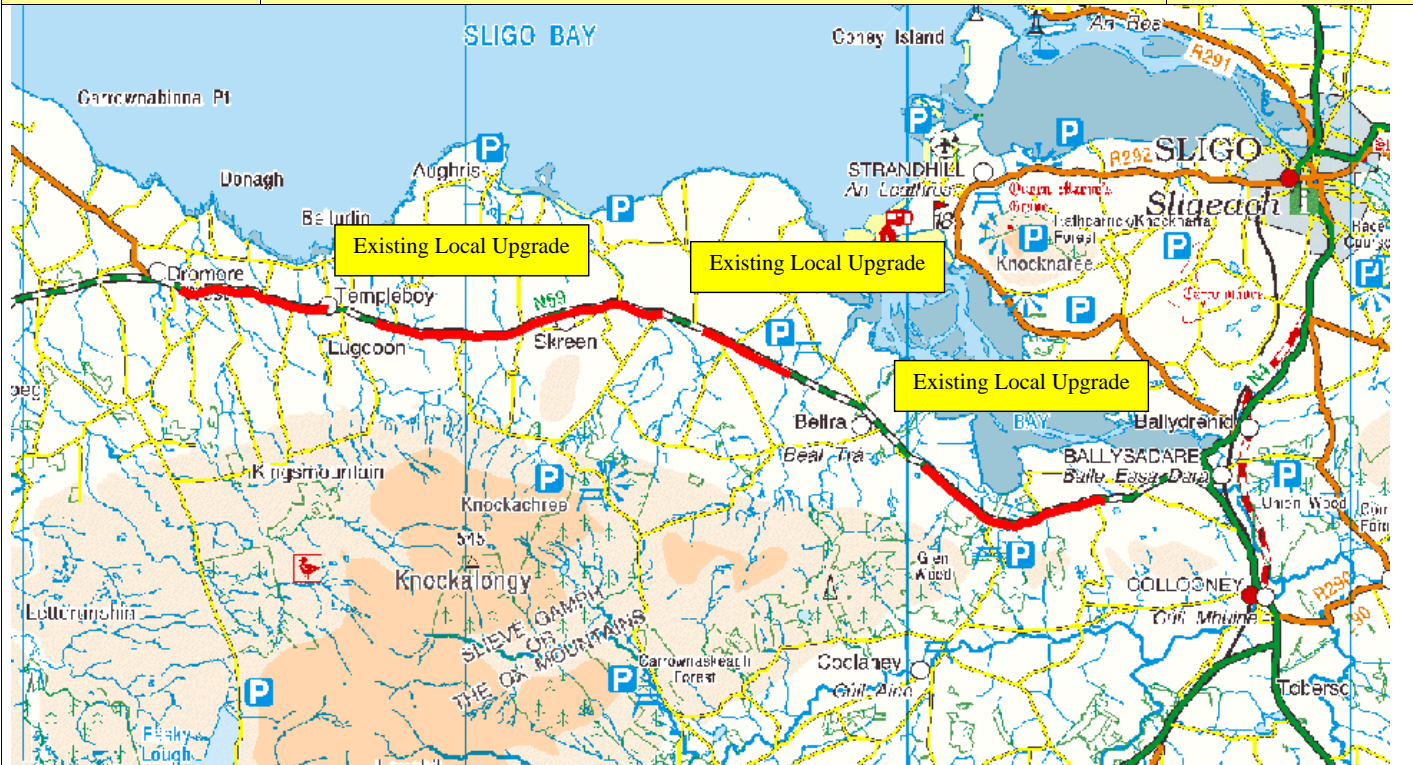
N56.e.1.C3			Name: Glenties to Ardara				Type: S2 Type 3					
												
Scheme Definition			Modelled as		OT Input		Scheme Cost €m					
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S		
84843	2.390	67	3.2	0.8	3308	2.371	3.234	0.664	0.177	0.717		
118489	0.566	67	3.2	0.8	3308	0.561	0.766	0.157	0.042	0.170		
119944 (Former link no. 118490)	5.116 (Former link length 5.721)	74.5	1.1	0.0	3305	5.116	6.923	1.422	0.379	1.535		
Glenties to Ardara	Total 8.072					Total 8.048						
<p>Notes:</p> <p>This route is quite hilly coming out of Glenties and the pavement condition is very poor. This section is followed by an upgraded section to approximately Type 3 standard for 3.41km until the side road junction where the route first comes close to the Owentocker River. (For 1.31km of this section the road is widened but with no improvements to geometry, its has a mix of short OT and non-overtaking and is not really to any standards. After this section the road narrows and straightens with a mix of overtaking and non-overtaking due to mainly vertical alignment restrictions over this 2.1km section). This 3.41km upgraded section has been removed from the costs. From this upgraded section until 605m before the speed limit at Ardara the route is quite narrow, bendy and hilly. The final 605m appears to have been recently resurfaced and is to approx Type 2 standard. This section is therefore not included in this upgrade.</p> <p>The Owenea River is environmentally designated as both an NHA and an SAC. This route crossed this environmentally sensitive area at the outskirts of Glenties. It is thought that the existing Mullenien Bridge at this location is wide enough to accommodate this upgrade. The route also passes close to the Owenea River east of Kilrean.</p> <p>5 No stream crossings.</p> <p>Low Traffic Poor Subgrade – Maintenance Category 3</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p> <p>Split Link 118490 @ approx (174523, 390661) Resulting Link 119944</p>						TOTAL:	10.924	2.244	0.598	2.422		
						Any special costs	-4.615	-0.948	-0.253	-1.023		
											Sub Total	9.349
											Cycling	+1.891
					Grand Total	11.240						

PABS Appraisal Summary Table - N56e.1.C3						
Scheme Option: N56 Glenties to Ardara		Description: 8.048km upgrade to S2 Type 3 standard	Problems Identified:			
			<ul style="list-style-type: none"> <li>Practically all of this section of route has lane widths &lt; 3m</li> <li>Sightline problems are identified south of Glenties for both 85kph and 100kph design standards.</li> <li>Sightline problems are identified at Ardara village</li> <li>Sightline problems are identified for circa 10km, north and east of Killybegs</li> <li>Accident problem is evident south of Ardara village</li> <li>Accident problem is evident east of Killybegs</li> <li>Poor pavement condition between Ardara village and Killybegs.</li> </ul>			
			Budget Cost (million) €1.24			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		94 households affected in 2025	-€0.002	No	4.0
	Noise and vibration		0 tonnes of carbon saved in 2025	€0.000		
	Landscape and visual quality	Not assessed	94 households affected in 2025	-€0.078	No	2.7
	Biodiversity	The proposed realignment will impact directly on the West of Ardara/Maas Road SAC (000197) and pNHA, and the Owenea Freshwater Pearl Mussel catchment.			Not assessed	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Ringfort, a Megalithic Tomb and a Graveyard.			Yes	1.0
Landuse		The proposed realignments will primarily be within Wetlands and Agricultural Areas.			No	3.0
					No	4.0
	Water resources	The proposed realignments in this section of the N56 will impact directly on the Owenea Freshwater Pearl Mussel catchment. It also runs adjacent to the Owentocker River for a large proportion of this section.			Yes	2.5
Safety	Accident reduction		0.1 accidents saved in 2025	-€0.040		4.0
Economy	Security	A facility for walkers and cyclists is to be provided where none previously existed.				7.0
	Transport Efficiency and Effectiveness		11 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €1.360 €0.491 €0.846		4.6
				PVC Residual value €6.987 €0.581		
	Other economic impacts	Imperfect competition effects		€0.049		4.3
Accessibility and Social Inclusion	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				5.0
	Deprived geographic areas		3 CLAR zones experience improved access to Hub/Gateway			6.0
	Transport integration					6.0
Integration	Land-use integration					6.7
	Geographical integration					4.1
	Integration with other government policies					4.1
				NPV	Total	5.0
				BCR	Red Flagged	Yes
					0.46	

N56.e.2.C3			Name: Ardara to Killybegs (R263 junction)					Type: S2 Type 3		
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118492	3.443	66	3.2	0.9	3309	3.412	4.197	0.671	0.190	1.033
118494	6.224	71.5	1.6	0.1	3306	6.218	6.639	0.709	0.210	1.867
118493	2.522	64	4.2	1.7	3309	2.479	3.178	0.549	0.154	0.757
Ardara to Killybegs (R263 junction)	Total 12.189					Total 12.109				
<p>Notes:</p> <p>This route is generally very bendy and narrow and also has a very poor vertical alignment in places with occasional sections with good alignment and overtaking opportunities. Notwithstanding there are long sections with no overtaking. There are a number of relatively straight sections near Meenapeaky but overtaking is hampered at these locations by the poor vertical alignment. From Meentullynagarn Bridge to the junction with the R263 the route is extremely bendy and narrow. Variability in road width is also noted. The pavement condition is very poor in places along this route, this combined with the boggy nature of the surrounding countryside reinforces the opinion that there is poor subgrade for much of this route between Ardara and the R263The Bracky River estuary is environmentally designated as an NHA and SAC and this route passes close to this area near Ardara.</p> <p>Sidelong construction for approx 2.25km near Altnandewon (add const cost).</p> <p>Narrow stone bridge over River Bracky is on a bad bend and will need to be replaced.</p> <p>1 No. narrow stone bridge north of Bracky Bridge is on a bad bend and will need to be replaced.</p> <p>Narrow stone bridge (Meentullynagarn Bridge) over Stragar River, to be widened / replaced.</p> <p>12 No. stream crossings.</p> <p>The N56 does not have right of way at the junction with the R263.</p> <p>Low Traffic Poor Subgrade – Maintenance Category 3</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p>						TOTAL:	14.014	1.929	0.553	3.657
						Any special costs	0.740 1.421 0.200	0.000	0.000	0.000
						Sub Total	22.514			
						Cycling	+2.846			
						Grand Total	25.360			


PABS Appraisal Summary Table - N56e.2.C3							
Scheme Option: N56 Ardara to Killybegs (R263 junction)		Description: 12.109km upgrade to S2 Type 3 standard		Problems Identified: · Practically all of this section of route has lane widths < 3m · Sightline problems are identified south of Glenties for both 85kph and 100kph design standards. · Sightline problems are identified at Ardara village · Sightline problems are identified for circa 10km, north and east of Killybegs · Accident problem is evident south of Ardara village · Accident problem is evident east of Killybegs · Poor pavement condition between Ardara village and Killybegs.		Budget Cost (million) €5.36	
Objective	Sub-objective	Qualitative impacts		Quantitative assessment	Monetised (million 30 yrs)	Score	
Environment	Air Quality			66 households affected in 2025	-€0.006	4.0	
	Noise and vibration			0 tonnes of carbon saved in 2025	€0.000		
	Landscape and visual quality			66 households affected in 2025	-€0.133	3.0	
	Biodiversity		Not assessed		Not assessed	4.0	
	Cultural Heritage / archaeology		The proposed realignment will impact directly on the Slieve Tooley / Tormore Island / Loughros Beg Bay SAC and pNHA (000190).		Yes	1.0	
	Landuse		No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including a Ringfort and an Enclosure.		No	3.0	
Safety	Water resources		The proposed realignments will primarily be within Wetlands, Agricultural Areas and Forest Semi Natural Areas.		No	4.0	
	Accident reduction		The proposed realignments in this section of the N56 will cross the Brackly River and the Aighe River which both discharge to the Slieve Tooley / Tormore Island / Loughros Beg Bay SAC and pNHA (000190).		Yes	3.0	
Economy	Security		A facility for walkers and cyclists is to be provided where none previously existed.	0.2 accidents saved in 2025	-€0.888	3.6	
	Transport Efficiency and Effectiveness			25 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €3.301 €1.609 €1.238	4.6	
					PVC Residual value €16.142 €1.146		
	Other economic impacts			Imperfect competition effects	€0.161	4.4	
	Funding		Not assessed			4.0	
	Vulnerable groups		None of the route corridor is within 4km of a settlement of 1,500 people or more.	3 CLAR zones experience improved access to Hub/Gateway		5.0	
Accessibility and Social Inclusion	Deprived geographic areas					6.3	
	Transport integration						
	Land-use integration					6.0	
	Geographical integration					6.7	
	Integration with other government policies					4.1	
				NPV	-€9.714	Total	5.0
				BCR	0.40	Red Flagged	Yes



N59.a.1.C2			Name: Ballysadare to Dromore West						Type: S2 Type 2		
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
118524	3.352	69	4.3	1.9	3306	3.288	6.269	1.553	0.309	1.0056	
118526	4.084	75.5	2.1	0.5	3304	4.064	5.995	0.934	0.200	1.2252	
118525	2.422	78	1.1	0.0	3303	2.422	3.071	0.267	0.064	0.7266	
118527	1.032	78	1.1	0.0	3303	1.032	1.309	0.114	0.027	0.3096	
118528	6.816	75.5	2.3	0.5	3304	6.782	10.005	1.558	0.334	2.0448	
118530	5.968	72.5	3.5	1.5	3304	5.878	9.994	2.090	0.427	1.7904	
Ballysadare to Dromore West	Total 23.674					Total 23.466					
<p>Notes:</p> <p>A number of local upgrades have already taken place along this route, namely outside Ballysadare; either side of Beltra; near Carrowgilpatrick; and at the approach to Templeboy. It is thought that these upgrades are to Type 2 Standard or better and therefore the costs have been amended to make allowance for these already upgraded sections. (upgraded sections estimated to be 6.686km total length)</p> <p>Ballysadare Bay is listed as SPA, NHA and SAC and an additional forest section of this environmentally sensitive area exists immediately east of Beltra however this upgrade should not impose on it.</p> <p>This route is bendy and hilly in sections and overtaking is limited to the locations where upgrades have already taken place.</p> <p>Special costs added for where existing higher quality sections have been removed (to adjust for effective lowering of the quality score)</p> <p>1 No River Carrowcor River crossing</p> <p>7 No. stream crossings</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 2.6 to 3.5 – Maintenance Bracket 2</p>						TOTAL:	36.642	6.515	1.360	7.102	
						Any special costs	-15.000	0.000	0.000	0.000	
						Sub Total	36.619				
						Cycling	+5.560				
						Grand Total	42.179				

PABS Appraisal Summary Table - N59a.1.C2						
Scheme Option: N59 Ballysadare to Dromore West		Description: 23.466km upgrade to S2 Type 2 standard	Problems Identified: • Lane width < 3m for 49% of the route corridor and <3.5m for 84% of the corridor • Local areas of poor visibility west of Ballysadare, ease if Templeboy and also east of Ballina • Accident clusters which appear to be associated with these areas of poor visibility • Pavement condition is poor in the vicinity of Templeboy.	Budget Cost (million) €42.18		
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		160 households affected in 2025	-€0.026	No	3.9
	Noise and vibration		1 tonnes of carbon saved in 2025	-€0.000	No	3.1
	Landscape and visual quality		160 households affected in 2025	-€0.200	Not assessed	4.0
	Biodiversity				Yes	2.0
	Cultural Heritage / archaeology		Realignment of road has potential for indirect impacts on Ballysadare SPA (004129), Ballysadare SAC (000622) and pHNA, and Slieveewood Bog NHA (001902).		No	3.0
	Landuse		Realignment will come closer to a number of sites already within 100m of the route including twelve Ringforts, a Bullaun Stone, four Enclosures, two Earthworks and a Ritual Site – Holy Well.		No	4.0
	Water resources		The proposed realignments will be primarily within Agricultural Areas, but also some isolated Forestry and Semi-Natural Areas.		No	3.0
Safety	Accident reduction		0.9 accidents saved in 2025	€10.925		7.0
Economy	Security					4.0
	Transport Efficiency and Effectiveness		A facility for walkers and cyclists is to be provided where none previously existed.			5.2
			169 vehicle-hours per day in travel time saved in 2025	€8.889 €12.346 €1.016	Non-work Work Active travel	
				€27.344 €2.264	PVC Residual value	
			Imperfect competition effects	€1.235		5.8
			Not assessed			4.0
			None of the route corridor is within 4km of a settlement of 1,500 people or more.			5.0
Accessibility and Social Inclusion	Vulnerable groups		2 CLAR zones experience improved access to Hub/Gateway			4.1
Integration	Deprived geographic areas					
	Transport integration					6.0
	Land-use integration					6.7
	Geographical integration					4.4
	Integration with other government policies					4.1
				NPV	€9.104	Total
				BCR	1.33	Red Flagged
						5.4
						Yes



N59.a.2.C2			Name: Dromore West to Ballina					Type: S2 Type 2			
											
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
118534	2.454	76	2	0.2	3303	2.449	3.509	0.506	0.110	0.7362	
118536	3.502	77.5	1.5	0.0	3302	3.502	4.588	0.473	0.109	1.0506	
118535	1.418	73.5	2.8	0.7	3304	1.408	2.282	0.443	0.092	0.4254	
118538	1.686	73.5	2.8	0.7	3304	1.674	2.714	0.526	0.109	0.5058	
118537	2.227	77.5	1.3	0.0	3303	2.227	2.917	0.301	0.069	0.6681	
98416	6.650	77.5	1.3	0.0	3303	6.650	8.712	0.898	0.207	1.995	
98418	2.700	77.5	1.3	0.0	3303	2.700	3.537	0.365	0.084	0.81	
Dromore West to Ballina	Total 20.637					Total 20.637					
<b>Notes:</b> This route includes very substantial straight sections with good overtaking opportunities, though For the straight sections between Camcuill and Culleens; Meenashammer and Corbally; Corbally South and Quignalegan an upgrade would involve the introduction of a hardstrip; the existing road reservation should be able to accommodate this. (noted that the model reduces land costs for high scoring routes, therefore no need to reduce costs further) No environmentally designated areas in the vicinity of this route. It is thought that the approach to Ballina (0.853km approx) is already to Type 2 standard therefore a cost has been subtracted for this section which is already upgraded. 1 No Easky River Crossing (narrow stone bridge) 1 No Owenbeg River Crossing 1 No Owenykeevan River Crossing 1 No Culleens River Crossing (minor) – existing bridge skewed to the alignment 6 No Stream crossings Low Traffic Good Subgrade – Maintenance Category 1 IRI 2.6 to 3.5 – Maintenance Bracket 2						TOTAL:	28.259	3.512	0.780	6.191	
						Any special costs	-2.000	0.000	0.000	0.000	
						Sub Total	36.742				
						Cycling	+4.850				
						Grand Total	41.592				

F01

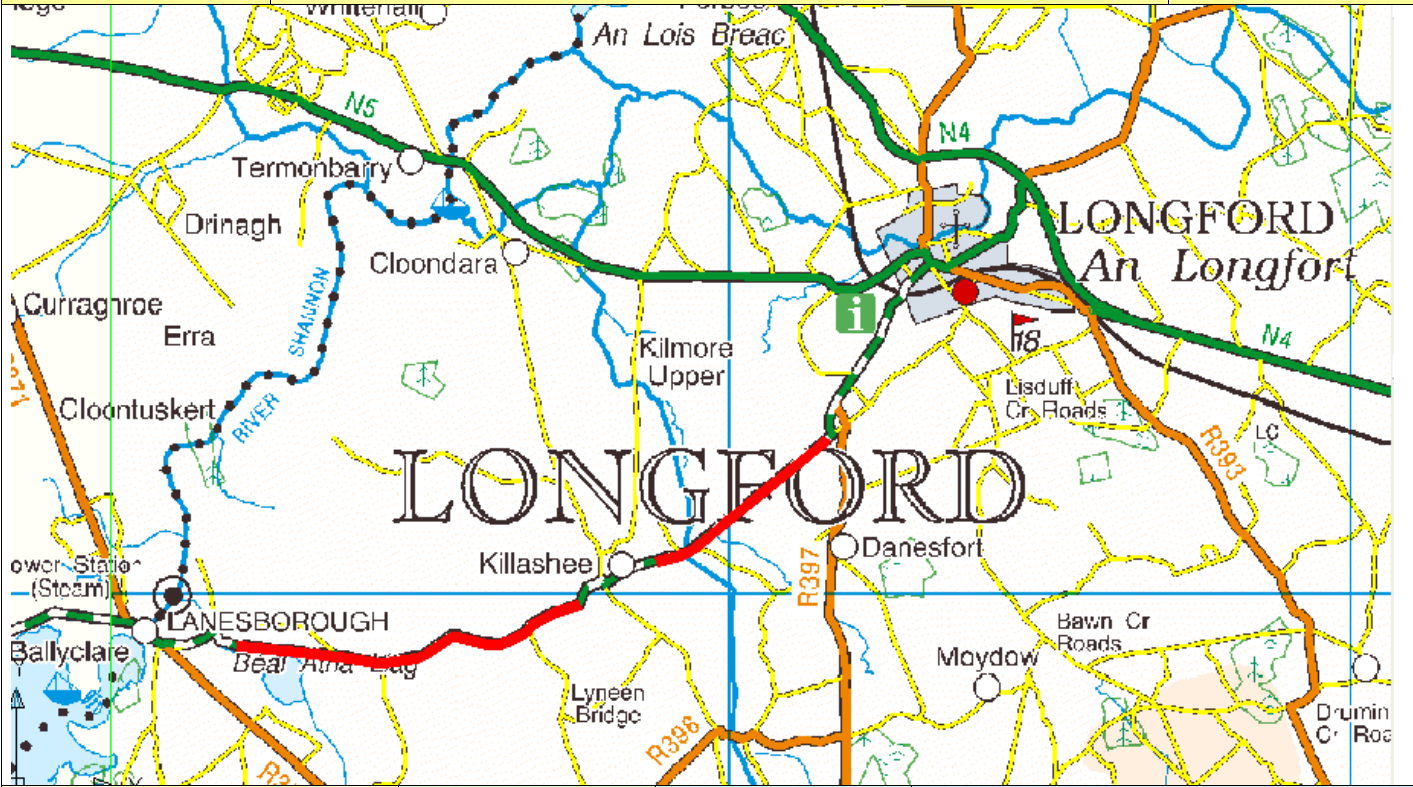
N62.a.1.C3			Name: Athlone (N6) to Ferbane				Type: S2 Type 3			
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
118691	6.036	75.5	2.5	0.3	3303	6.016	5.556	0.234	0.080	1.811
Break at Ballynahown										
118695	2.174	77.5	2.5	0.3	3303	2.167	1.818	0.000	0.003	0.652
118694	0.295	70 assumed	N/A	0.0	3303	0.295	0.329	0.041	0.012	0.089
118696	0.127	70 assumed	N/A	0.0	3303	0.127	0.141	0.018	0.005	0.038
118699 (Improvement to part of link)	1.709 used (Full length of link2.026)	70 assumed (Former link score 77.5)	1.5	0.1	3303	1.707	1.904	0.237	0.069	0.513
Athlone (N6) to Ferbane	Total 10.341					Total 10.312				
<b>Notes:</b> From the N6 to until the Boor River crossing the route is straight but it is narrow and the vertical alignment hampers the overtaking significantly. North of Ballynahown the route is quite bendy. From Ballynahown to Doon Cross Roads there is overtaking and this section appears to have been recently resurfaced. The widths are below Type 3 standard however and it is therefore included for upgrade here. There is a speed limit restriction at Doon Cross Roads but it is proposed to carry this upgrade through this speed restricted area. From Doon Cross Roads to south of Glebe route is straight but narrow and the overtaking is hampered by the vertical alignment. This section is followed by a section that is to between Type 2 and Type 1 standard and then by a section with a climbing lane on the northbound carriageway. This is then followed by a section to Type 2 standard from Corbane to Ferbane. It is not proposed to upgrade the sections from south of Glebe to Ferbane. It is noted however that local widening to T2 standards for the initial 800m from Ferbane should be considered separately from this route option. There is a combined NHA and SAC to the west of the route north of Ferbane but there are no environmentally designated areas in the vicinity of the route proposed for upgrade. 1 No. Boor River Crossing. The existing bridge is wide enough to accommodate this upgrade. 1 No. Railway Crossing. Existing bridge is humped and has bad bends either side. Bridge to be replaced as part of this upgrade. (add cost). 2 No stream crossings. Low Traffic Good Subgrade – Maintenance Category 1 IRI 3.6 to 5 – Maintenance Bracket 3						TOTAL:	9.748	0.529	0.168	3.102
						Any special costs	0.400	0.000	0.000	0.000
						Sub Total	13.947			
						Cycling	+2.430			
Grand Total	16.377									

PABS Appraisal Summary Table - N62a.1.C3						
Scheme Option: N62 Athlone (N6) to Ferbane		Description: 10.341km upgrade to S2 Type 3 standard	Problems Identified: <ul style="list-style-type: none"><li>• Lane widths are less than 3m wide for 74% of the corridor and are less than 3.5m for 89% of the corridor.</li><li>• On corridor 62a, north of Ballynahown for a distance of approximately 4km the visibility is in the 20 to 120m range.</li><li>• On corridor 62a, north and south of Ferbane for a distance of approximately 2.5km (5km in total) the visibility is primarily in the 20 to 120m range.</li><li>• On corridor 62a, approximately 7km south of Coughlan for a further 5km the visibility is in the 20 to 120 range for a large proportion.</li><li>• There is a small cluster of serious accidents immediately north and south of Ferbane and this corresponds to an area of poor visibility.</li><li>• Approximately 7km south of Coughlan for 3km there is also a gathering of 1 Fatal and 3 serious accidents and once again this stretch corresponds to an area of poor visibility.</li></ul>	Budget Cost (million) €6.38		
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		44 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.001 €0.000	No	4.0
	Noise and vibration Landscape and visual quality		44 households affected in 2025	-€0.059	No	3.3
	Biodiversity		Not assessed		Not assessed	4.0
	Cultural Heritage / archaeology		The proposed realignment may impact indirectly on Crosswood Bog SAC (002337) & pNHA (000678), and Doon Esker Wood pNHA (001830). Directly crosses the River Boor which discharges to the River Shannon Callows SAC & pNHA (000216).		Yes	2.5
			No sites will be directly impacted by the proposed realignments and but a number of sites will be brought within 100m of the realigned sections of the route which including three NIAH Structures, an Enclosure, two Castles – Tower Houses, two Bawns and a Sheela-Na-Gig.		No	3.0
Safety	Landuse		The proposed realignments will primarily be within Agricultural Areas with a section through a Forest Semi Natural Area.		No	4.0
	Water resources		Directly crosses the River Boor which discharges to the River Shannon Callows SAC & pNHA (000216).		Yes	3.0
	Accident reduction Security		0.4 accidents saved in 2025	€4.051		7.0
Economy	Transport Efficiency and Effectiveness					4.0
			70 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel	€3.754 €4.029 €0.450	5.2
Accessibility and Social Inclusion				PVC Residual value	€10.041 €0.647	
	Other economic impacts		Imperfect competition effects		€0.403	5.6
	Funding		Not assessed			4.0
	Vulnerable groups Deprived geographic areas		Some of the route corridor is within 4km of a settlement of 1,500 people or more.			7.0
			3 CLAR zones experience improved access to Hub/Gateway			4.6
Integration	Transport integration					7.0
	Land-use integration					4.6
	Geographical integration					5.9
	Integration with other government policies					6.3
				NPV	€3,234	Total
				BCR	1.32	Red Flagged
						5.2
						Yes

**Budget Cost (million) €16.38**

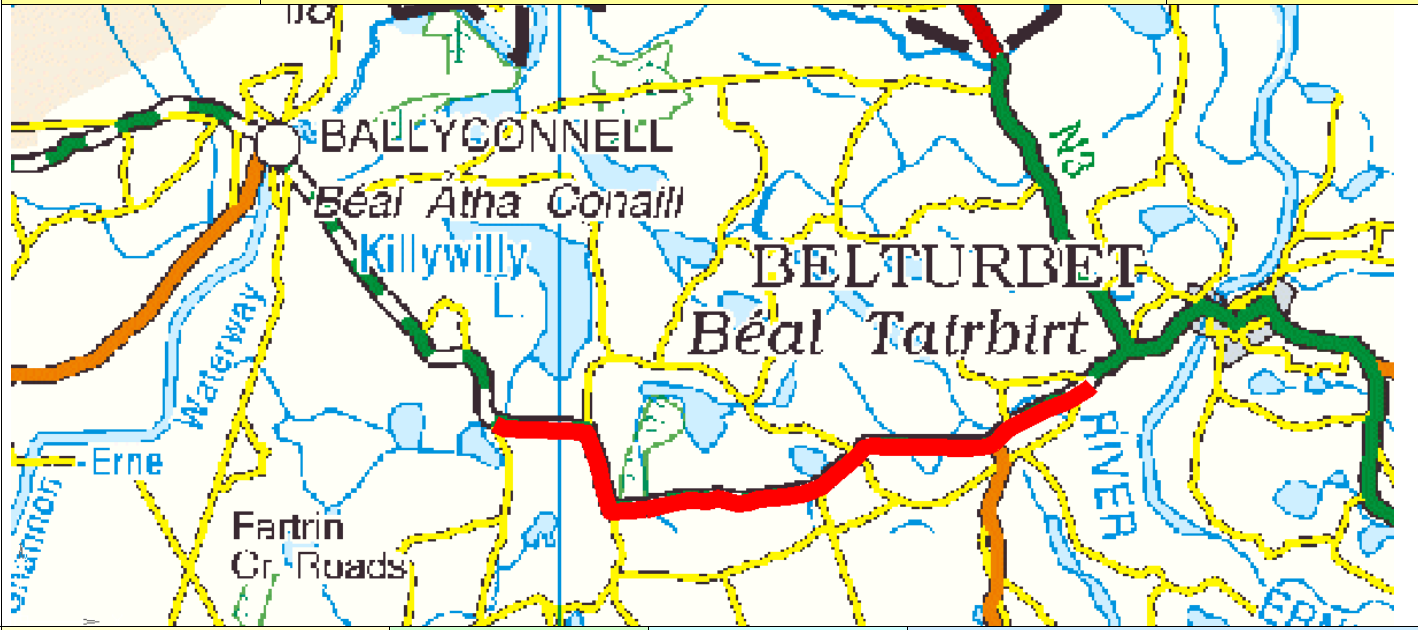
- Problems Identified:**
- Lane widths are less than 3m wide for 74% of the corridor and are less than 3.5m for 89% of the corridor.
  - On corridor 62a, north of Ballynahown for a distance of approximately 4km the visibility is in the 20 to 120m range.
  - On corridor 62a, north and south of Ferbane for a distance of approximately 2.5km (5km in total) the visibility is primarily in the 20 to 120m range.
  - On corridor 62a, approximately 7km south of Coughlan for a further 5km the visibility is in the 20 to 120 range for a large proportion.
  - There is a small cluster of serious accidents immediately north and south of Ferbane and this corresponds to an area of poor visibility.
  - Approximately 7km south of Coughlan for 3km there is also a gathering of 1 Fatal and 3 serious accidents and once again this stretch corresponds to an area of poor visibility.



N63.a.1.C2			Name: Longford to Lanesborough				Type: S2 Type 2					
												
Scheme Definition			Modelled as		OT Input		Scheme Cost €m					
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S		
120029 (Former link no. 118730)	2.734 (Former link length 3.282)	77	1.8	0.2	3303	2.729	3.694	0.436	0.098	0.820		
118733	0.680	73.5	3.0	0.8	3304	0.675	1.095	0.212	0.044	0.204		
Break at Killashee												
118737	3.579	73.5	3.0	0.8	3304	3.550	5.761	1.117	0.231	1.074		
118736	2.258	78	1.4	0.0	3303	2.258	2.863	0.249	0.060	0.677		
Longford to Lanesborough	Total 9.251					Total 9.212						
<p>Notes:</p> <p>This route is relatively wide coming out of Longford. The first approximately 1.13km is to Type 1 or Type 2 standard and it is therefore not proposed to upgrade this section. The route then narrows down somewhat and there is a short overtaking section at Cloonturk. From the aerial photography there is a boggy area visible at this location. There are a number of bends before Aghnaskea Bridge. This scheme is then broken at Kilashee but may be combined with the relief road option for Kilashee also. From Kilashee to Lanesborough the route is generally bendy and narrow with some short overtaking opportunities and one decent overtaking opportunity at the straight section at the approach to Lanesborough. There is a 650m long widened section between T1 and T2 standards at approx 3.6km from Lanesborough.</p> <p>There is an NHA to the south of the route at the approach to Lanesborough (at Derryloughbanrow).</p> <p>Possible boggy area visible on aerial photography for approx 4.7km of the route.</p> <p>1 No Royal Canal crossing at Aghnaskea Bridge, narrow stone bridge (add const cost)</p> <p>Stone retaining walls between Aghnaskea Bridge and Killashee</p> <p>1 No narrow stone bridge (will need to be widened / replaced)</p> <p>1 No at grade railway crossing.</p> <p>3 no. stream crossings</p> <p>High Traffic Good Subgrade – Maintenance Category 2</p> <p>IRI 2.5 to 3.5 – Maintenance Bracket 2</p> <p>Copy variant used for N63.a.1.C2 and amend attribution as per this sheet.</p>							TOTAL:	13.412	2.014	0.433	2.775	
							Any special costs	0.600	0.000	0.000	0.000	
							Sub Total					19.234
							Cycling					+2.165
Grand Total					21.399							

PABS Appraisal Summary Table - N63a.1.C2						
Scheme Option: N63 Longford to Lanesborough		Description: 9.212km upgrade to S2 Type 2 standard	Problems Identified:			Budget Cost (million) €1.40
			<ul style="list-style-type: none"> <li>Approx 50% of this corridor has lane width less than 3m and approx 55% less than 3.5m wide.</li> <li>Section of poor visibility either side of where the corridor crosses the royal Canal.</li> <li>There is some indication of accidents occurring in the vicinity of the crossing of the Grand Canal, west of Longford in corridor N63a.</li> </ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		44 households affected in 2025 2 tonnes of carbon saved in 2025	€0.015	No	4.1
	Noise and vibration Landscape and visual quality		44 households affected in 2025	€0.000	No	3.3
		Not assessed		€0.003	No	4.0
	Biodiversity	Proposed realignment could indirectly impact on the Royal Canal pNHA (002103). There is also potential for direct impacts on Lough Bannow pNHA (000449).			Not assessed	4.0
	Cultural Heritage / archaeology	Realignment of road will come close to a Castle – Tower House and some NIAH sites (SURV018), which are all within 100m of the route.			No	2.5
Landuse		The proposed realignments will be primarily within Artificial Areas but also some Wetland Areas.			No	3.0
	Water resources	Proposed realignment could indirectly impact on the Royal Canal pNHA (002103). There is also potential for direct impacts on Lough Bannow pNHA (000449).			No	4.0
	Accident reduction		0.2 accidents saved in 2025	€4.182	No	2.5
Safety	Security	A facility for walkers and cyclists is to be provided where none previously existed.				6.1
Economy	Transport Efficiency and Effectiveness		40 vehicle-hours per day in travel time saved in 2025	€2.226		4.3
				€0.292		
				€0.672		
				€14.190		
Other economic impacts				€1.021		
			Imperfect competition effects	€0.029		4.1
	Funding	Not assessed				4.0
Accessibility and Social Inclusion	Vulnerable groups	Some of the route corridor is within 4km of a settlement of 1,500 people or more.				7.0
	Deprived geographic areas		2 CLAR zones experience improved access to Hub/Gateway			4.3
Integration	Transport integration					6.0
	Land-use integration					4.6
	Geographical integration					4.4
	Integration with other government policies					4.1
				NPV	-€5.751	Total
				BCR	0.59	Red Flagged
						4.6
						No



N87.a.1.C3			Name: Belturbet to Ballyconnell				Type: S2 Type 3			
										
Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
120069 (Former link no. 64621)	1.075 (Former link length1.490)	72.5	1.6	0.1	3306	1.074	1.110	0.104	0.031	0.323
119520	3.479	72.5	1.6	0.1	3306	3.477	3.594	0.336	0.101	1.044
120070 (Former link no. 119522)	1.973 (Former link length3.288)	66	2.8	0.7	3309	1.959	2.405	0.384	0.109	0.592
Belturbet to Ballyconnell	Total 6.527					Total 6.510				
<b>Notes:</b> The NRA scheme, N87 Belturbet to Ballyconnell, in this area is currently at Constraints Study Stage. The scheme involves a realignment of approx 6.5km of the scheme from Lisnamaine townland to Cranaghan townland. (No scheme layout map available for this scheme). This first 450m of this route from the roundabout at the outskirts of Belturbet is to approx S2 Type 1 standard and is therefore not considered here. The route is generally bendy and narrow with a very poor vertical alignment, consequently there are few overtaking opportunities. There are number of very bad bends along the route. There are a number of very short overtaking opportunities but many of these are hampered by the vertical alignment. From Cranaghan Bridge to Ballyconnell the road is to Type 3 or Type 2 standard, is or relatively recent construction and there is s footpath present on the south side from the entrance to Slieve Russell Hotel to Ballyconnell. It is therefore not proposed to look at further upgrading this section even though overtaking is somewhat limited. There are a number of small lakes to the north of this route and they are environmentally designated as SAC's and NHA's. The route passes close to one of these lakes, Killynaher Lough which is listed as an SAC. 3 No stream crossings. Forest area to the south of the route for approx 300m 3 No. very bad bends. Low Traffic Good Subgrade – Maintenance Category 1 IRI 0 to 2.5 – Maintenance Bracket 1  Link 64621 split @ (235008, 316395) resulting link 120069 Link 119522 split @ (229387, 316033) resulting link 120070.						TOTAL:	7.109	0.824	0.241	1.958
						Any special costs	0.000	0.000	0.000	0.000
						Sub Total Cycling Grand Total	10.132 <u>+1.530</u> 11.662			

PABS Appraisal Summary Table - N87a.1.C3						
Scheme Option: N87 Belturbet to Ballyconnell		Description: 6.51km upgrade to S2 Type 3 standard	Problems Identified: <ul style="list-style-type: none"><li>· Lane width &lt; 3m for majority of this section of the route with some section less than 2.75m.</li><li>· Intermittent poor visibilities to V=85kph and V=100kph design standards but visibility is not substandard over substantial lengths.</li><li>· Relatively high incidence of accidents</li><li>· Visibility drops into the 20 to 120m range for approximately 5km between the junction with the road to Milltown west to Ballyhugh and on for a further approx 3km towards Ballyconnell.</li><li>· Approximately 1km either side of Ballyconnell the visibility is poor and in the 20 to 120m range predominantly;</li><li>· There is an apparent accident cluster located approximately 2km west of Belturbet near the junction with the road to Milltown. This accident cluster corresponds to an area of relatively good visibility however the lane widths at this section are between 2.75 and 3.0m.</li><li>· The second accident cluster along this route is located approximately 3km north west of Ballyhugh close to the junction with the road to Ardlougher. This location does correspond to a stretch with poor visibility with visibility dropping into the 20 to 120m range in places. The lane widths are also substandard at this location as they are consistently in the 2.75 to 3.0m.</li><li>· The final accident cluster occurs just within the urban speed zone south of Ballyconnell. At this location visibility appears to be to standard however once again the lane widths are in the 2.75 to 3.0m range.</li></ul>			Budget Cost (million) €1.66
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		54 households affected in 2025 3 tonnes of carbon saved in 2025	€0.043 €0.000	No	4.7
	Noise and vibration		54 households affected in 2025	-€0.092	No	2.6
	Landscape and visual quality	Not assessed			Not assessed	4.0
	Biodiversity	The proposed realignment will impact directly and indirectly on the Lough Oughter & Associated Loughs SAC & pNHA (0000007).			Yes	1.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including a Stone Row.			No	3.0
	Landuse	The proposed realignments will primarily be within Agricultural Areas.			No	4.0
	Water resources	The proposed realignment will impact directly and indirectly on the Lough Oughter & Associated Loughs SAC & pNHA (0000007).			Yes	1.0
Safety	Accident reduction		0.1 accidents saved in 2025	-€0.268		3.7
	Security	A facility for walkers and cyclists is to be provided where none previously existed.				4.0
Economy	Transport Efficiency and Effectiveness		22 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €0.976 €0.343 €0.924		4.4
				PVC Residual value €7.625 €0.515		
	Other economic impacts		Imperfect competition effects	€0.034		4.2
	Funding	Not assessed				4.0
Accessibility and Social Inclusion	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				5.0
	Deprived geographic areas		4 CLAR zones experience improved access to Hub/Gateway			4.7
Integration	Transport integration					7.0
	Land-use integration					4.3
	Geographical integration					4.8
	Integration with other government policies					4.2
				NPV	-€5.149	
				BCR	0.32	
				Total	Red Flagged	4.3
					Yes	Yes

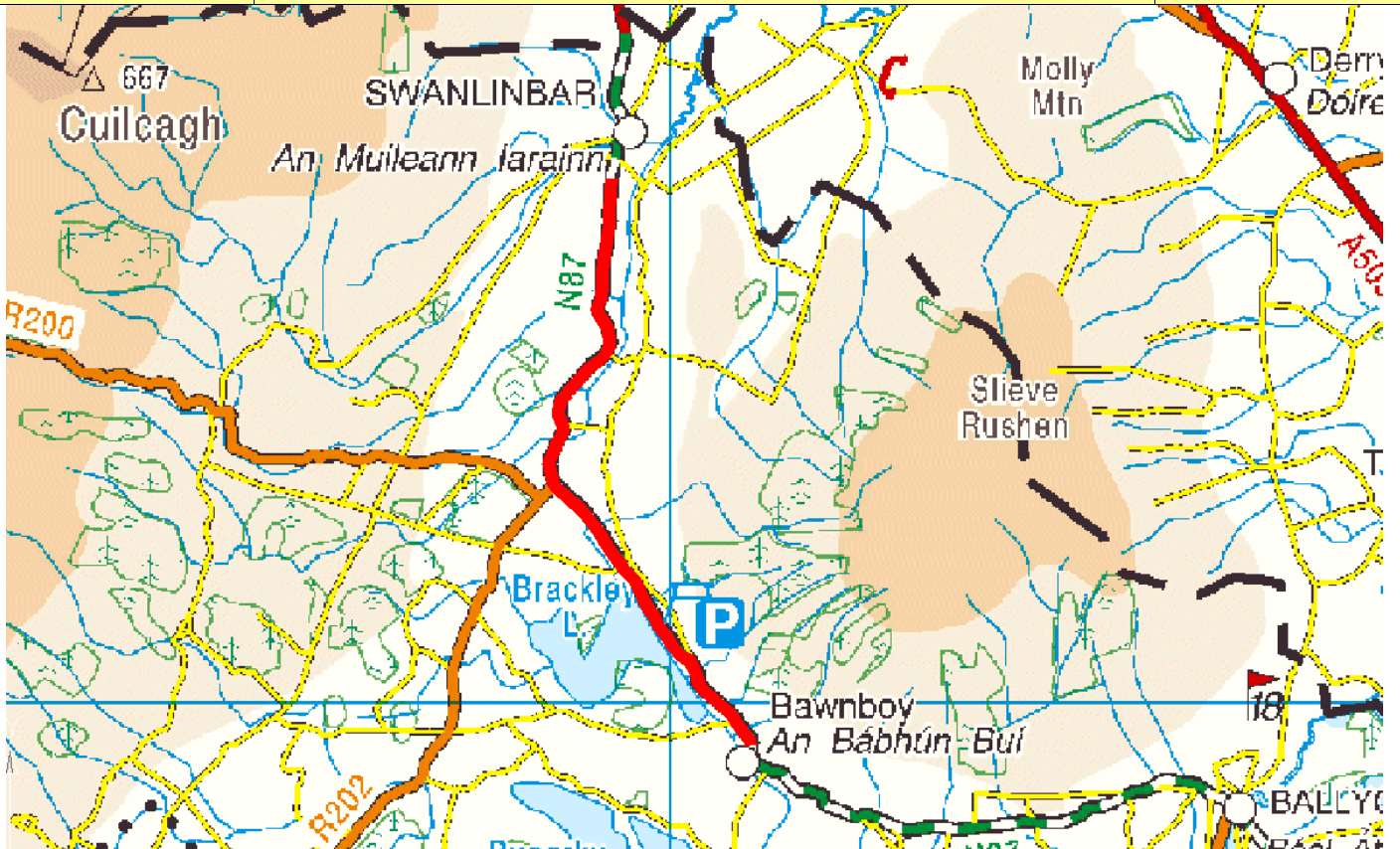
N87.b.1.C3			Name: Ballyconnell to Bawnboy					Type: S2 Type 3			
Scheme Definition			Modelled as		OT Input		Scheme Cost €m				
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S	
120073 (Former link no. 119523)	2.641 (Former link length 4.283)	71.5	1.1	0.0	3307	2.641	3.574	0.734	0.196	0.792	
120074 (Former link no. 119526)	1.245 (Former link length 1.748)	65.5	3.9	1.2	3308	1.230	1.685	0.346	0.092	0.374	
Ballyconnell to Bawnboy	Total 3.886					Total 3.871					
<p>Notes:</p> <p>The first 1.705km out of Ballyconnell is approximately to S2 Type 3 standard in width but remains a non overtaking zone and has a wide road reservation. It is therefore not proposed to upgrade this section to Type 3 standatd. There is one short overtaking section along this route. The majority of this section is narrow and bendy and has a very poor vertical alignment. The final 500m into Bawnboy is to approx Type 3 width and has a wide road reservation. It is therefore not proposed to upgrade this last section to Type 3 standard.</p> <p>There are no environmentally designated areas in the vicinity of this route.</p> <p>2.5km bendy and narrow section with poor VA from Munlough North to Corrasmongan.</p> <p>4 No. stream crossings.</p> <p>Low Traffic Good Subgrade – Maintenance Category 1</p> <p>IRI 3.6 to 5 – Maintenance Bracket 3</p> <p>Link 119523 split @ (225422, 318636) resulting link 120073</p> <p>Link 119526 spltd @ (221776, 318865) resulting link 120074.</p>						TOTAL:	5.259	1.080	0.288	1.166	
						Any special costs	0.000	0.000	0.000	0.000	
						Sub Total Cycling Grand Total					7.793 <u>+0.910</u> 8.703

PABS Appraisal Summary Table - N87b.1.C3						
Scheme Option: N87 Ballyconnell to Bawnboy		Description: 3.871km upgrade to S2 Type 3 standard	Problems Identified:	Budget Cost (million) €8.70		
			<ul style="list-style-type: none"><li>· Lane width &lt; 3m for majority of this section of the route and many sections are less than 2.75m. From Bawnboy to the Northern Ireland Border north of Swanilbar is particularly poor. The lane widths east of Bawnboy and around Ballyhugh are also poor.</li><li>· Intermittent poor visibilities to V=85kph and V=100kph design standards but visibility is not substandard over substantial lengths.</li><li>· Between Ballyconnell and Bawnboy the approx 5km nearest Bawnboy has a number of locations where the visibility drops into the 20 to 120m range;</li><li>· North of Bawnboy there is a section approximately 2km in length adjacent to Brackley Lough where the visibility is consistently in the 20 to 120m range;</li><li>· For approximately 2km north of Swanilbar the visibility once again is in the 20 to 120m range.</li><li>· 47% of the corridor has a pavement condition index, IRI &gt;4.</li></ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		44 households affected in 2025 3 tonnes of carbon saved in 2025	€0.044 €0.000	No	5.0
	Noise and vibration		44 households affected in 2025	-€0.043	No	3.0
	Landscape and visual quality	Not assessed			Not assessed	4.0
	Biodiversity	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No	4.0
	Cultural Heritage / archaeology	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including three Ringforts, a Sheela-Na-Gig and a Castle.			No	3.0
Safety	Landuse	The proposed realignments will primarily be within Agricultural Areas.			No	4.0
	Water resources	The proposed realignments in this section of the N87 will cross the Drumane River and Templeport Lake Stream.			No	3.0
Economy	Accident reduction		0.0 accidents saved in 2025	€0.364		4.5
	Security	A facility for walkers and cyclists is to be provided where none previously existed.				4.0
	Transport Efficiency and Effectiveness		7 vehicle-hours per day in travel time saved in 2025	Non-work Work Active travel €0.492 €0.240 €0.722		4.4
				PVC Residual €5.444 €0.441		
	Other economic impacts	Imperfect competition effects		€0.024		4.2
Accessibility and Social Inclusion	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				5.0
	Deprived geographic areas		3 CLAR zones experience improved access to Hub/Gateway			4.4
	Transport integration					6.0
	Land-use integration					4.3
Integration	Geographical integration					4.8
	Integration with other government policies					4.2
				NPV BCR	-€3.161 0.42	Total Red Flagged

N87.b.2.C3

Name: Bawnboy to Swanlinbar

Type: S2 Type 3



Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
119530	2.763	65.5	3.9	1.2	3308	2.730	3.398	0.555	0.157	0.829
119529	1.515	68.5	2.7	0.4	3307	1.509	1.752	0.244	0.070	0.455
64625	1.270	68.5	2.7	0.4	3307	1.265	1.469	0.205	0.059	0.381
119532	0.777	68.5	2.7	0.4	3307	0.774	0.899	0.125	0.036	0.233
119535	2.254	70	2.1	0.2	3307	2.249	2.511	0.312	0.091	0.676
Bawnboy to Swanlinbar	Total 8.579					Total 8.527				

Notes:

The existing route is generally very bendy and narrow and has a very poor vertical alignment. There are 5 very short overtaking sections but in reality overtaking may not be possible at many of these locations.

There are no environmentally designated areas in the vicinity of this route.

1 No narrow stone bridge on bad bend at Killaghduff (yellow bar markings at the approach), to be replaced.

1 No narrow stone bridge over the Owensallagh River, to be widened / replaced.

1 No narrow stone bridge at Moherloon, to be widened / replaced.

1 No narrow stone bridge at approach to Bawnboy, to be widened / replaced.

Forest area with route tree lined for approx 2km at Brackley.

A number of bad bends along the route.

Low Traffic Good Subgrade – Maintenance Category 1

IRI 3.6 to 5 – Maintenance Bracket 3

TOTAL:	10.029	1.442	0.412	2.574
Any special costs	0.200	0.000	0.000	0.000
Sub Total	14.657			
Cycling	+2.004			
Grand Total	16.661			

PABS Appraisal Summary Table - N87b.2.C3						
Scheme Option: N87 Bawnboy to Swanlibar		Description: 8.527km upgrade to S2 Type 3 standard	Problems Identified:			
			<ul style="list-style-type: none"> <li>· Lane width &lt; 3m for majority of this section of the route and many sections are less than 2.75m. From Bawnboy to the Northern Ireland Border north of Swanlibar is particularly poor. The lane widths east of Bawnboy and around Ballyhugh are also poor.</li> <li>· Intermittent poor visibilities to V=85kph and V=100kph design standards but visibility is not substandard over substantial lengths.</li> <li>· Between Ballyconnell and Bawnboy the approx 5km nearest Bawnboy has a number of locations where the visibility drops into the 20 to 120m range;</li> <li>· North of Bawnboy there is a section approximately 2km in length adjacent to Brackley Lough where the visibility is consistently in the 20 to 120m range;</li> <li>· For approximately 2km north of Swanlibar the visibility once again is in the 20 to 120m range.</li> <li>· 47% of the corridor has a pavement condition index, IRI &gt;4.</li> </ul>			
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag	Score
Environment	Air Quality		28 households affected in 2025 0 tonnes of carbon saved in 2025	-€0.003 €0.000	No	4.0
	Noise and vibration Landscape and visual quality		28 households affected in 2025	-€0.038	No	3.6
	Biodiversity	Not assessed			Not assessed	4.0
	Cultural Heritage / archaeology	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No	4.0
	Landuse	No sites will be directly impacted by the proposed realignments but a number of sites will be brought within 100m of the realigned sections of the route which including a Ritual Site – Holy Well and a Ringfort.			No	3.0
Safety	Water resources	The proposed realignments will primarily be within Agricultural Areas but one section is through a Water Body.			No	4.0
	Accident reduction Security	The proposed realignments in this section of the N87 will cross the Bawnboy River and the Owensallagh River.	0.0 accidents saved in 2025	-€0.644	No	3.0
Economy	Transport Efficiency and Effectiveness	A facility for walkers and cyclists is to be provided where none previously existed.				3.5
			10 vehicle-hours per day in travel time saved in 2025	Non-work Work €0.360 €0.379		4.0
				Active travel €0.902		4.2
				PVC Residual value €10.286 €0.768		
Accessibility and Social Inclusion	Other economic impacts	Imperfect competition effects		€0.038		4.1
	Funding	Not assessed				4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.				5.0
	Deprived geographic areas		2 CLAR zones experience improved access to Hub/Gateway			4.2
Integration	Transport Integration					6.0
	Land-use integration					4.3
	Geographical integration					4.8
	Integration with other government policies					4.2
				NPV	Total	4.2
				BCR	0.17	Red Flagged
						No

Budget  
Cost  
(million)  
€16.66



N87.b.3.C3

Name: Swanlinbar to N.I. Border

Type: S2 Type 3



Scheme Definition			Modelled as		OT Input		Scheme Cost €m			
Link	Length (Km)	DM_qual	S/F	Shorten (%)	New sf (Code)	New Len (Km)	Const	Land	Arch	P & S
119533	1.199	70	2.1	0.2	3307	1.197	1.336	0.166	0.048	0.360
Swanlinbar to N.I. Border	Total 1.199					Total 1.197				
<b>Notes:</b> This route is relatively short and has a good overtaking section. It joins up with the A32 at the Northern Ireland border. The existing pavement condition is poor in some places. There are no environmentally designated areas in the vicinity of this route. Low Traffic Good Subgrade – Maintenance Category 1 IRI 3.6 to 5 – Maintenance Bracket 3						TOTAL:	1.336	0.166	0.048	0.360
						Any special costs	0.000	0.000	0.000	0.000
						Sub Total	1.910			
						Cycling	<u>+0.281</u>			
						Grand Total	2.191			

PABS Appraisal Summary Table - N87b.3.C3					
Scheme Option: N87 Swanlibar to N.I. Border		Description: 1.197km upgrade to S2 Type 3 standard	Problems Identified:		Budget Cost (million) €2.19
			<ul style="list-style-type: none"><li>· Lane width &lt; 3m for majority of this section of the route and many sections are less than 2.75m. From Bawnboy to the Northern Ireland Border north of Swanlibar is particularly poor. The lane widths east of Bawnboy and around Ballyhugh are also poor.</li><li>· Intermittent poor visibilities to V=85kph and V=100kph design standards but visibility is not substandard over substantial lengths.</li><li>· Between Ballyconnell and Bawnboy the approx 5km nearest Bawnboy has a number of locations where the visibility drops into the 20 to 120m range;</li><li>· North of Bawnboy there is a section approximately 2km in length adjacent to Brackley Lough where the visibility is consistently in the 20 to 120m range;</li><li>· For approximately 2km north of Swanlibar the visibility once again is in the 20 to 120m range.</li><li>· 47% of the corridor has a pavement condition index, IRI &gt;4.</li></ul>		
Objective	Sub-objective	Qualitative impacts	Quantitative assessment	Monetised (million 30 yrs)	Red Flag
Environment	Air Quality		6 households affected in 2025	€0.000	No
	Noise and vibration		0 tonnes of carbon saved in 2025	€0.000	No
	Landscape and visual quality		6 households affected in 2025	-€0.007	Not assessed
	Biodiversity				No
	Cultural Heritage / archaeology	The proposed realignment will not impact directly or indirectly on any European or Nationally designated sites.			No
	Landuse	No sites will be directly impacted by the proposed realignments and no sites will be brought within 100m of the realigned sections of the route.			No
	Water resources	The proposed realignments will primarily be within Agricultural Areas. The proposed realignments in this section of the N87 will not directly cross as rivers.			No
Safety	Accident reduction		0.0 accidents saved in 2025	-€0.005	4.0
	Security				4.0
Economy	Transport Efficiency and Effectiveness	A facility for walkers and cyclists is to be provided where none previously existed.			4.3
			0 vehicle-hours per day in travel time saved in 2025	Non-work €0.005 Work €0.010 Active travel €0.243  PVC €1.340 Residual €0.098 value	
Accessibility and Social Inclusion	Other economic impacts		Imperfect competition effects	€0.001	4.0
	Funding	Not assessed			4.0
	Vulnerable groups	None of the route corridor is within 4km of a settlement of 1,500 people or more.			5.0
	Deprived geographic areas		0 CLAR zones experience improved access to Hub/Gateway		4.0
Integration	Transport integration				6.0
	Land-use integration				4.3
	Geographical integration				4.8
	Integration with other government policies				4.2
				NPV -€0.996	Total 4.3
				BCR 0.26	Red Flagged No

