Socio-Economic Case for Improvements to
the N16/A4 Sligo to Ballygawley and N2/A5
Monaghan to Letterkenny Transport
Corridors
October 2012
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Foreword by Councillor Robert Turner  
Chair, Joint ICBAN / NWRCBG ‘Roads to Opportunity’ Working Group

As Chair of the joint Cross-Border Groups’ “Roads to Opportunity Working Group, I commend to you this report advocating “Improvements to the N16/A4 Sligo to Ballygawley & N2/A5 Monaghan to Letterkenny Transport Corridors”.

This report has been driven by ICBAN and undertaken as part of a wider Central Border Region Spatial Planning Initiative. This wider initiative aims to ensure regional commitment to joined-up planning practices amongst stakeholders and seeks to maximise future investment in and development of the Central Border Region. This work includes the development of a Vision Plan for the region, a Vision in which it is expected that improvements in roads infrastructure will be seen as key to the future functionality of the Central Border area.

This study provides an evidence-based analysis of the issues and develops arguments for support and funding for both the N16/A4 & N2/A5 Key Transport Corridors. It examines the current obstacles and specifically addresses the potential benefits which would accrue to the island economy as a whole, by opening up the North West of the island of Ireland in terms of greater roads access.

A real challenge will undoubtedly be the cross-border dimension, and this initiative is a unique and ambitious approach to helping tackle challenges which traverse both the jurisdictions of the Republic of Ireland and Northern Ireland.

This document will help re-promote and consolidate the case for prioritising the development of both these key routes. To enable this quadrant of the island to be sustainable, develop and indeed to attract much needed inward investment, it is vital that we have the infrastructure to do so. Modern, safe and quality road corridors are of paramount importance to our social fabric and are the lifeblood of this region’s economy.

I hope that the issues clearly identified in this study can be addressed to give the region the opportunity to compete on an equal footing with other areas.

I would wish to record my gratitude to all those stakeholders who participated in the consultation events and those who assisted in the preparation of the report. We look forward to working with you all, collectively, in promoting and completing these ambitions.

Councillor Robert Turner  
Chair  
Joint ICBAN / NWRCBG ‘Roads to Opportunity’ Working Group

October 2012
Overview

This report develops a socio-economic and business case for increased transport investment in the border areas of Northern Ireland and the Republic of Ireland. The report is set in the context of the wider “Central Border Region Spatial Planning Initiative” being developed by ICBAN. The Spatial Planning Initiative is supported by the European Union’s INTERREG IVA Programme managed by the Special EU Programmes body and will facilitate the move to a new level of strategic planning and coordinated action for regional development in the border areas. The evidence in this socio-economic and business case suggests that the border area performs poorly in economic terms when compared to the wider island of Ireland and it can be strongly argued that this is at least in part attributable to its low quality transport infrastructure.

The Study Area

The study area is illustrated in the dark orange shade in the figure below:
Summary

It is crucial to note at the outset that the brief for the study was focused on infrastructure improvements that would benefit the entire Border Area, rather than a small number of counties within it. While there is general support for road improvements that could be of benefit to the Border Area, the focus here was largely on schemes that were contained within the area.

Economic Situation

It is clear that poor transport connectivity is having a negative impact on the economic performance of the Border area. Long and often unreliable journey times have an impact on business competitiveness and make the Border area a less attractive location for both indigenous growth and foreign direct investment. Indeed, there is anecdotal evidence to suggest that the majority of Border Area firms are owned either by local people or those who have a historic connection to the area, further illustrating the lack of inward investment.

In macroeconomic terms, the Border Area has been shown to perform poorly when compared with other areas of Ireland. Key headlines include:

- economic productivity lags behind the national average;
- there is a lower share of high value economic sectors, and a higher share of manufacturing and construction sector jobs, both of which are being badly hit by the current economic downturn;
- there is also a ‘brain drain’ of young and talented people from the Border Area; and
- the Border Area has a lower GVA per capita than other regions of the Republic of Ireland.

What can improved transport links do for the Border area?

Transport in itself cannot of course resolve all of the Border area’s economic difficulties. Any infrastructure improvements would need to be accompanied by investment in communications technology, industrial premises and skills development. Indeed, the long-term development of the area may be best supported by designating it as an enterprise area – ie a Border Development Zone. Nonetheless, improved transport improvements are a central element of any such economic stimulus package in that they can assist in:

- improving business confidence in the future of the Border Area;
- encouraging the skilled pool of workers currently resident to remain;
- facilitating and supporting the regeneration of the local and national economy, helping it recover from the current downturn;
- assisting in the development of indigenous industries;
- creating a better environment for business investment, lessening the dependence on the shrinking public sector;
- assisting in maintaining the social and economic fabric of the Border area; and
- reducing the perception of peripherality, particularly amongst tourists and businesses.
Border Area Transport Problems

The key transport problems in the Border area were identified as:

- Long travel times and hence poor accessibility to key economic centres;
  - average speeds from the Border Area towns to Dublin is **71kph**, compared to **85kph** from the other towns; and
  - average speeds from the Border Area towns to Belfast is also **71kph**, compared to **76kph** from the other towns.

- Under-investment in transport infrastructure in the area – recent NRA spending per head on transport infrastructure in the Border area is around 45% of that of other Irish regions;

- Some routes in the area (notably the N16) are not of the required standard for a designated National Primary Road;

- Issues with journey time reliability, particularly for traffic passing through the town of Enniskillen; and

- Conflicts between local and strategic traffic.

Taken together, these problems mean that the Border area suffers from a serious competitive disadvantage when compared with other areas of Ireland. This is currently leading towards the development of a ‘three-speed economy’ where the Border area lags the city-regions of Belfast and Dublin as well as the towns and cities connected by high quality motorways and dual carriageways.

Objective Setting

In addressing the transport problems in the Border area, we set a series of ‘Transport Planning Objectives’ to complement established government objective. The objectives, if realised, will support the long-term economic development of the Border area. The Transport Planning Objectives for this study are:

- **TPO1a:** Work towards equalisation of average road travel speeds from the Border Area to Belfast with other comparable regions of Northern Ireland and the Republic of Ireland;

- **TPO1b:** Work towards equalisation of average road travel speeds from the Border Area to Dublin with other comparable regions of Northern Ireland and the Republic of Ireland;

- **TPO2:** Ensure average inter-urban travel speeds of no less than 80kph between designated key towns within the Border Area;

- **TPO3:** Provide a modern, safe and well maintained road network targeted at supporting indigenous firms and attracting inward investment; and

- **TPO4:** Ensure a best value solution for delivering improved transport connectivity within and to / from the Border Area.
Investment Priorities

It became evident very early in the process that stakeholders see the development of two transport corridors within the Border Area as their priority:

- A5 / N2 between Derry / Londonderry, Aughnacloy and onwards to Dublin. Included within this overall corridor plan were suggested improvements to links with Letterkenny along the N14 corridor; and
- A4 / N16 between Sligo and Ballygawley.

The research undertaken as part of this study clearly identified the importance of both corridors in supporting the future economic prosperity of the Border Area. We therefore considered the merits of each corridor separately. One should not read the analysis as A5 / N2 versus A4 / N16 as the reality is that both corridors will have to be improved if the Border area is to realise its goal of sustainable and balanced economic development. It is in the interests of all stakeholders to work together in realising improvements on both the east-west and north-south axes.

We would envisage that the prioritisation set out below relates only to the phasing of improvements and that all of the options will be delivered within a defined timescale to complete each of the two routes.

In addition to the corridor specific options, there should be a general commitment to ensure that National / Trunk roads are of the required minimum standard for that designation. This is a particularly pertinent point for the N16, which falls well below the required standard.

There should also be an immediate commitment to making relatively low cost improvements in travel information and safety, including:

- more frequent signage, particularly route confirmatory signs showing distances to major destination towns and tourist information signs; and
- improved lining, signing and lighting.

While no specific public transport options were advanced by stakeholders, there is a very clear opportunity for public transport improvements to complement any improvements to the road network. This could include express bus services between key towns operated jointly by Translink (Ulsterbus) and Bus Eireann (particularly between Derry / Londonderry and Letterkenny).

A5 / N2 Corridor Prioritisation

By testing options identified for the A5 / N2 corridor against the Transport Planning Objectives and government criteria, we identified the following set of priorities:

- **Priority 1:** Dualling of the A5 between Derry / Londonderry and Ballygawley, followed by Ballygawley to Aughnacloy, including the A5 link between the N14 / N15 at Strabane;
- **Priority 2:** Dualling of the N14 between Lifford and Letterkenny, linking into the new A5 at Strabane;
- **Priority 3:** Improvements to the N2 between the Border and Castleblayney;
Summary

- **Priority 4:** Dualling of the N2 between Ardee and Ashbourne, including the Slane Bypass. (Note that an alternative to this scheme, from a Border area perspective, would be to upgrade the N33 between Ardee and Charleville, providing a direct link to the M1.); and

- **Other:** Long-term objective for the dualling of the N13 between Letterkenny and Derry / Londonderry. This will strengthen the ‘Linked Gateway’ designation of Letterkenny and Derry / Londonderry and also facilitate the operation of express coach services.

### A4 / N16 Corridor Prioritisation

As with A5 / N2 corridor, we identified the following as the key priorities for the A4 / N16 corridor:

- **Priority 1:** Provision of a bypass of Enniskillen;
- **Priority 2:** Progressive upgrades to the N16, beginning with the section between Glencar and Glenfarne including the Manorhamilton Bypass, followed by the Sligo to Glencar section and finally the Glenfarne to Blacklion section;
- **Priority 3:** Provision of a bypass of Fivemiletown; and
- **Other:** Improvements to the A4 between Enniskillen and Belcoo - in the interests of a consistent minimum standard of route.

### Map of Recommendations

The figure below summarises our principal recommendations in context. The dark blue lines represent the principal recommended improvements identified in this report. In addition the roads linking the principal Border Area towns should be reviewed and improved in order that the target average inter-urban speed of 80 kph is achievable.
1 Introduction

1.1 Introduction

1.1.1 This report sets out the socio-economic case for improvements to transport infrastructure in the Border Area of Northern Ireland (NI) and the Republic of Ireland (RoI). Through undertaking a thorough and objective-led review of options, this document establishes the economic justification and sequencing for investing in new transport links in the Border Area.

1.1.2 MVA Consultancy, in association with StephenWoodConsultancy, was appointed by the Irish Central Border Area Network (ICBAN), in partnership with the North West Region Cross Border Group (NWRCBG), to undertake this study during 2011/12.

1.1.3 The study is set within the wider context of the "Central Border Region Spatial Planning Initiative" which will facilitate the move to a new level of strategic planning and coordinated action for regional development. The planning initiative will also produce a Regional Vision Plan, which will be complementary to existing national strategies and is intended to inform planning locally, as well as government spending policies and priorities centrally.

1.2 Study Context

1.2.1 The challenge of justifying, planning and funding major new transport infrastructure is a substantial one. The scale of expenditure means that new infrastructure requires political support at all stages, and especially when government budgets are being confirmed to allow construction to proceed. The principle of improvements to the ‘Key Transport Corridors’ in Northern Ireland has been agreed by both governments in Belfast and Dublin but with the change in economic conditions, it is now uncertain that all of the planned improvements will be constructed in the near future.

1.2.2 The Transport 21 infrastructure programme in the RoI has successfully delivered improvements to the Major Inter Urban (MIU) roads radiating from Dublin to a number of the key ‘gateways’ on the south and west coast. However, the Border Area has yet to realise any substantial benefit. Similarly the successive Investment Strategies for Northern Ireland (ISNI 1 and ISNI 2) have financed major improvements to the M1 / A1 and A4 corridors. However these improvements and the dual carriageway upgrade of the A4 to Ballygawley in particular, has had only limited impact on the Border Area within Northern Ireland.

1.2.3 Most importantly, taken together the Transport 21 and ISNI funded improvements have not delivered the step-change in accessibility to economic markets for the Border Area as envisaged by national planning documents.

1.3 The A5 Western Transport Corridor

1.3.1 While this study has been objective-led, it was clear from early in the process that improvements to the strategically important A5 (ultimately the link from Derry / Londonderry to Dublin) would feature prominently as an option. Indeed, the construction of a new offline dual carriageway to replace the existing A5 along its entire length was included in the Good Friday Agreement. However, at the time of the commissioning of this study, the scheme,
which is estimated to cost £800 million, had not received the £400 million committed by the Irish Government.

1.3.2 This issue assumed increasing prominence in November 2011 when the Irish Government announced that it was withdrawing funding for the scheme in light of the substantial budget pressures it was facing. In February 2012, the Northern Ireland Assembly announced that it would independently fund a £400 million upgrade to the A5, which included construction of a new high quality dual carriageway between:

- New Buildings (Derry / Londonderry) and Strabane (17km); and
- Omagh and Ballygawley (26km).

1.3.3 In developing the socio-economic case, we therefore assumed these two sections of the A5 as being 'committed'. The appraisal exercise therefore only considered these sections of the A5 in terms of their priority / phasing for construction.

1.4 Data Considerations

1.4.1 It should be noted at the outset that the cross-border nature of this study has given rise to a number of data issues. Firstly, the Border Area is not a neatly defined set of districts and county councils. Where the Border Region is referenced in official RoI publications, it includes County Louth, which is not part of the study area for this project. This is significant as County Louth includes the main M1 Dublin-Belfast route and thus has very good accessibility. This in turn makes border area statistics look more favourable than they otherwise would.

1.4.2 Northern Ireland itself presents a number of data issues as it is, in statistical terms, treated as a sub-region, the equivalent to a British local authority. As a result, District Councils within Northern Ireland are seen as 'sub sub-regions' and thus there is very little in the way of data at this level. Data used are therefore often presented at a more aggregate level.

1.4.3 Lastly, the border itself presents an issue in terms of two different standards of data and reporting, often making direct comparison difficult. This issue arose both in terms of economic data and traffic and transport data.
2 Profile of the Study Area

2.1 Overview

2.1.1 This chapter provides an overview of the study area, including the Border area’s key transport corridors, as identified in the Northern Ireland Regional Development Strategy and the RoI National Spatial Strategy.

2.2 Defining the Study Area

2.2.1 The brief defined the study area as those County / District Councils that fall under the administrative remit of ICBAN and the North-West Region Cross Border Group (NWRCBG). This therefore includes:

- **ICBAN:**
  - Armagh City and District Council;
  - Cavan County Council;
  - Cookstown District Council;
  - Dungannon and South Tyrone Borough Council;
  - Fermanagh District Council;
  - Leitrim County Council;
  - Monaghan County Council;
  - Omagh District Council; and
  - Sligo County Council.

- **NWRCBG:**
  - Derry City Council;
  - Donegal County Council;
  - Limavady Borough Council;
  - Magherafelt District Council; and
  - Strabane District Council.

2.2.2 The study area is illustrated in the dark orange shade Figure 2.1 below:
2.2.3 It is crucial to note at the outset that the brief for the study was focused on infrastructure improvements that would benefit the entire Border Area, rather than a small number of counties within it. While there is general support for road improvements that could be of benefit to the Border Area, the focus here was largely on schemes that were contained within the area.

2.2.4 In addition, it became clear from both desk-based research and the consultation exercise that the perceived problems and issues in the Border Area stemmed from inadequate roads infrastructure. There was no strong lobby or credible options for improved rail services. This initial prioritisation led to a focus on four key highway corridors, namely those between:

- Derry / Londonderry - Aughnacloy – Dublin (A5/N2);
- Sligo and Ballygawley (A4/N16); and
- Lifford and Letterkenny (N15).
2.2.5 These corridors and the geography of the Border area more generally are shown in Figure 2.2 below:

![Map of the Border Area](image)

**Figure 2.2 The Border Area – Key Towns and Corridors**

2.3 **Land-Use and Spatial Planning**

2.3.1 Spatial planning in the Border Area has historically been disjointed, with the border and the historical and geo-political connotations associated with it preventing efforts to develop cross border coordinated policy. This is perhaps a key reason for the Border Area's comparatively poor economic performance and the lack of cross-border transport infrastructure. However, this picture is changing – planners in both the north and the south of the island are now developing policies on a pan-Ireland basis.
2.3.2 A key to the success of these plans is ensuring good physical and virtual connectivity, of which a high quality transport system is clearly an integral component. We have noted that perhaps it has been too easy to designate “Gateways” and “Strategic Links” and similar in strategic planning documents without a commitment to realise these objectives with investment ‘on the ground’.

Northern Ireland Regional Development Strategy 2035

2.3.3 The recently published Northern Ireland Regional Development Strategy (RDS) 2035 sets out five component areas of the country:

- the Metropolitan area, centred on Belfast;
- Derry / Londonderry – principal city of the north-west;
- Hubs and Clusters of Hubs;
- the rural area; and
- Gateways and Corridors.

2.3.4 The above areas are set out in Figure 2.3 below:

![Diagram No. 2.3: Spatial Framework for Northern Ireland](image)

**Figure 2.3 Northern Ireland RDS 2035**

2.3.5 As well as setting out a clear spatial planning framework for Northern Ireland, the RDS identifies links to the Gateways and Hubs in the RoI National Spatial Strategy, demonstrating evidence of a more collaborative approach.
2.3.6 With the RDS, the A4 and A5 have both been identified as ‘Key Transport Corridors’, serving the Derry / Londonderry North-West city region and the Gateway of Enniskillen. They also support the main Hubs of Dungannon, Omagh and Strabane. The map clearly shows that the Key Transport Corridors designation extends beyond the Hubs and Gateways and across the border.

**Irish National Spatial Strategy 2002-2020**

2.3.7 In the Republic of Ireland, the Irish National Spatial Strategy (NSS) 2002-2020 places emphasis on the development of the Gateways of Sligo and Letterkenny to drive development through enhanced critical mass, accessibility and capacity for development. Other towns, villages and rural areas will need to develop roles complementary to those of Gateways to ensure that a wider area will benefit from a critical mass in the region provided by the Gateways. Figure 2.4 below provides an overview of the Irish NSS relevant to the Border Area.

![Map 4: Border Region](image)

**Figure 2.4 Irish National Spatial Strategy (Border) 2002-2020**

2.3.8 The NSS identifies Sligo as a Gateway town and Letterkenny as a Linked Gateway with Derry / Londonderry. As with the RDS, the NSS recognises both the A4 and A5 as Key Corridors, linking with the National Transport Corridors of the N2, N3, N14 and N16.

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2.3.9 The Border Regional Authority has its own Regional Planning Guidelines 2010-2022 which largely brings together the outputs of RDS and NSS. Its spatial infrastructure strategy also restates the importance of the A5/N2 and N16/A4 corridors, entitling them the "Northern Cross". This is illustrated in Figure 2.5 below, and confirms the importance of these corridors for the Border area.

![Border Region Spatial Infrastructure Strategy](image)

**Figure 2.5 Border Spatial Infrastructure Strategy**

2.3.10 The figure shows the strategic nature of the roads that comprise the "Northern Cross" and demonstrates their centrality in the context of the Border area.

**Environmental Designations**

2.3.11 The Border Regional Planning Guidelines also provide an overview of environmental designations in the Border Area, as illustrated in the Figure below:

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2.3.12 It can be seen from Figure 2.6 that there are no major national level environmental constraints in the key Border transport corridors within Northern Ireland. However, the N16 corridor in the south is bounded by a number of Special Areas of Conservation, an issue which would have to be taken into consideration in any upgrade to that road.4

2.3.13 A further notable environmental feature not shown in Figure 2.6 is the number and size of the loughs in the Fermanagh / Leitrim / Cavan area. Upper and Lower Lough Neagh in Fermanagh are the largest and their impact in reducing east – west road connectivity is obvious. However other smaller numerous loughs in the Border Area limit the opportunities for direct routes between the main towns and settlements.

2.4 Highway Profiles

2.4.1 This section profiles the main road links in question, considering:
- road alignment, quality and any particular issues of note;
- traffic volumes;
- safety / accident statistics; and
- settlements along each route.

2.4.2 In advance of considering each route, the figure below shows the key settlements and their population in each of the main highway corridors.

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4 Regional Planning Guidelines 2010-2022 (Border Regional Authority, 2010) p. 133.
Figure 2.7 Border Towns and Population

2.4.3 The Figure shows that both the A5/N2 and A4/N16 corridors pass through or near to several major centres of population, including Armagh, Derry / Londonderry, Dungannon, Enniskillen, Letterkenny, Lifford, Omagh, Sligo, and Strabane. These corridors are therefore central to the economic vitality of the Border Area, linking key settlements both within the Border area and to Belfast and Dublin.
A5 Derry / Londonderry – Aughnacloy

2.4.4 The A5 is designated a Key Transport Corridor and links the city of Derry / Londonderry (the fourth largest city in the island of Ireland) with Dublin via the N2. The road starts in the city and passes through County Londonderry and County Tyrone linking with the large towns of Strabane and Omagh and meeting the N2 at the border at Aughnacloy.

2.4.5 The existing A5 is a 54 miles / 87 kilometre wide single carriageway between Derry / Londonderry and Aughnacloy with sections of “2+1” to facilitate overtaking. The route has been upgraded relatively recently to include “throughpasses” of Strabane and Omagh town centres. However, congestion can occur at peak times and traffic is generally slowed as it filters through junctions used by traffic accessing the town centres. There is also anecdotal evidence to suggest that the A5 can suffer seasonal congestion with tourist traffic heading to County Donegal causing issues on Fridays and Mondays in particular.

2.4.6 Table 2.1 below shows average annual daily traffic flows (AADT) for the A5 (from south to north) from the Roads Service Annual Traffic Census 2008.

Table 2.1 A5 Bi-Directional Traffic Flows

<table>
<thead>
<tr>
<th>Location</th>
<th>Daily Traffic (AADT)</th>
<th>Source</th>
</tr>
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<tbody>
<tr>
<td>South of Ballygawley</td>
<td>6,700</td>
<td>RS Census 2008</td>
</tr>
<tr>
<td>North of Ballygawley</td>
<td>11,200</td>
<td>RS Census 2008</td>
</tr>
<tr>
<td>South of Omagh</td>
<td>14,800</td>
<td>RS Census 2008</td>
</tr>
<tr>
<td>North of Omagh</td>
<td>13,600</td>
<td>RS Census 2008</td>
</tr>
<tr>
<td>South of Strabane</td>
<td>13,900</td>
<td>RS Census 2008</td>
</tr>
<tr>
<td>South of Derry / Londonderry</td>
<td>11,600</td>
<td>RS Census 2008</td>
</tr>
</tbody>
</table>

2.4.7 It can be seen from Table 2.1 that the A5 has relatively high traffic volumes compared to other roads in the Border area. Strategic traffic builds from the south of Derry / Londonderry through to Omagh before dispersing onto different routes at Ballygawley where the road meets the A4. The traffic count data also suggest that there is a concentration of local traffic around Derry / Londonderry, Strabane and Omagh.

2.4.8 Road safety data for Northern Ireland is provided by the Police at the District Council level which makes it difficult to draw any meaningful conclusions about the A5.

N2 Aughnacloy – Dublin

2.4.9 The N2 is a National Primary road running from the border at Aughnacloy to Dublin. The road bypasses the towns of Monaghan, Clontibret, Castleblayney, Carrickmacross and Ardee. The road then passes through the centre of the historic town of Slane. It then bypasses Ashbourne before becoming a short stretch of motorway (the M2). It then becomes the N2 again just outside of Dublin.

2.4.10 The N2 is a single carriageway road as far as the M2 motorway at Ashbourne. As would perhaps be expected, it becomes progressively busier the closer it gets to both the Border Area and Dublin. Two-way annual average daily traffic (AADT) flows for the N2 in 2011 are as follows:
Profile of the Study Area

- N2 south of Monaghan / Tyrone border – 5,406$^5$;
- N2 immediately south of Castleblayney – 3,460$^6$; and
- N2 immediately south of Ardee – 6,871$^7$.

2.4.11 Statistics for the N2 suggest that the road broadly reflects the national average in terms of safety. However there is a specific problem in Slane at the crossing of the River Boyne where one way operation applies.

### Table 2.2 N2 Road Safety Statistics 2009$^8$

<table>
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<tr>
<th></th>
<th>Fatal</th>
<th>Seriously Injured</th>
<th>Minor Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside Built-Up Areas</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>Outside Built-Up Areas</td>
<td>1</td>
<td>1</td>
<td>36</td>
</tr>
</tbody>
</table>

2.4.12 These figures are broadly in keeping with the RoI average. The N2 accident rate per 10 million kilometres travelled is 0.14, which coincides with the national average of 0.13. It is also some way better than the road with the highest road casualty rate, the N53 (which runs between Dundalk and the N2) and has a rate of 0.25.

A4 Ballygawley – Belcoo (the Border)

2.4.13 The A4 is designated a Key Transport Corridor and provides a strategically important east-west route linking Belfast with the Border Area and, ultimately, Sligo. The section of the road relevant to this study is that between Ballygawley (where it meets the recently dualled section of the A4 to the east and the A5 to the north and south) and the Border at Belcoo. The road runs west from Ballygawley, passing through the villages of Augher, Clogher and Fivemiletown before travelling through the heart of Enniskillen and on to the border.

2.4.14 The A4 is a single carriageway between Ballygawley and Enniskillen. It is generally of wide single standard (10m carriageway width) with relatively good forward visibility and has recently been provided with some new “2+1” schemes which provide overtaking opportunities. However, the road must pass through the centre of Enniskillen, which can give rise to severe congestion and highly unreliably journey times. It also passes through the smaller centres of Augher, Clogher and Fivemiletown. The road remains of a reasonable standard to the west of Enniskillen all the way to the Border at Belcoo.

2.4.15 Table 2.3 shows average annual daily traffic flows (AADT) for the A4, heading east to west.

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$^5$ [http://nraextra.nra.ie/CurrentTrafficCounterData/index.html](http://nraextra.nra.ie/CurrentTrafficCounterData/index.html) - based on 365 days data.

$^6$ [http://nraextra.nra.ie/CurrentTrafficCounterData/index.html](http://nraextra.nra.ie/CurrentTrafficCounterData/index.html) - based on 100 days data.

$^7$ [http://nraextra.nra.ie/CurrentTrafficCounterData/index.html](http://nraextra.nra.ie/CurrentTrafficCounterData/index.html) - based on 271 days data.

2. Profile of the Study Area

Table 2.3  A4 Bi-Directional Traffic Flows

<table>
<thead>
<tr>
<th>Location</th>
<th>Daily Traffic (AADT)</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dungannon</td>
<td>17,600</td>
<td>RS Census 2008</td>
</tr>
<tr>
<td>Augher</td>
<td>8,900</td>
<td>RS Census 2008</td>
</tr>
<tr>
<td>Fivemiletown</td>
<td>6,800</td>
<td>RS Census 2008</td>
</tr>
<tr>
<td>Fivemiletown – Enniskillen</td>
<td>11,700</td>
<td>RS Census 2008</td>
</tr>
<tr>
<td>Enniskillen Throughpass</td>
<td>17,000</td>
<td>RS Census 2008</td>
</tr>
<tr>
<td>Enniskillen - Belcoo</td>
<td>4,400</td>
<td>RS Census 2008</td>
</tr>
</tbody>
</table>

2.4.16 Traffic on the A4 is heaviest at Dungannon, where it meets the M1, A5 and N2. The rural section between Dungannon and Fivemiletown is relatively lightly trafficked, with a gradual increase on the approach to Enniskillen. Traffic is again heavy around Enniskillen and likely consists of a mix of local and strategic movements – this lends weight to the argument that Enniskillen suffers from often severe traffic congestion. A key point of note is that traffic on the A4 disperses significantly on the stretch between Enniskillen and the Border, a trend that continues on the N16 (see below).

2.4.17 Road safety data for Northern Ireland is provided by the Police at the District Council level which makes it difficult to draw any meaningful conclusions specifically about the A4.

N16 Belcoo (the Border) – Sligo

2.4.18 The N16 is a National Primary road which runs from the Border to the Gateway town of Sligo on the west coast. Moving west from the Border, the N16 passes through Blacklion, Glenfarne and Manorhamilton before reaching Sligo. The route provides the main link with the economic centres of Northern Ireland and, of particular importance, the port-heads at Belfast and Larne.

2.4.19 The N16 is a single carriageway route from the Border to Sligo. In general, unlike many other National Primary Roads, the route has not been upgraded recently. It is therefore generally of approximately seven metre width and follows the terrain closely with frequent bends and very limited overtaking opportunities. The road is therefore below the standard of a Standard Single Carriageway, the minimum construction standard for a National Primary Road. There is also little journey information on the route.

2.4.20 Table 2.4 shows average annual daily traffic flows (AADT) for the N16.

Table 2.4  N16 Bi-Directional Traffic Flows

<table>
<thead>
<tr>
<th>Location</th>
<th>Daily Traffic (AADT)</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glenfarne</td>
<td>2,600</td>
<td>NRA Scheme 2006</td>
</tr>
<tr>
<td>Manorhamilton</td>
<td>3,800</td>
<td>NRA Scheme 2004</td>
</tr>
<tr>
<td>Glencar</td>
<td>3,600</td>
<td>NRA Scheme 2009</td>
</tr>
</tbody>
</table>
2.4.21 The traffic flows on the N16 are lowest near the Border, with an AADT of only 2,600. However, it can be argued that there is an element of data inconsistency here – the flow at Glenfarne is 1,800 vehicles lower than that at Belcoo, even though they are only a few kilometres apart and there are no obvious routes that would draw so much traffic off of the N16. Traffic on the N16 continues to be relatively low all the way to Sligo.

2.4.22 Statistics for the N16 suggest that the road is significantly worse than the national average in terms of safety, as illustrated in Table 2.5.

Table 2.5  N2 Road Safety Statistics 2009

<table>
<thead>
<tr>
<th></th>
<th>Fatal</th>
<th>Seriously Injured</th>
<th>Minor Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside Built-Up Areas</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>Outside Built-Up Areas</td>
<td>1</td>
<td>1</td>
<td>36</td>
</tr>
</tbody>
</table>

2.4.23 The N16 accident rate is 0.18 accidents per 10 million vehicle kilometres. This is significantly worse than the national average 0.13. There is therefore a clear suggestion of safety issues on the N16 and it can be argued that increased traffic flows would only worsen the problem.

**N14 Lifford – Letterkenny**

2.4.24 The N14 is a National Primary road, which connects with the border at Lifford / Strabane before progressing north-westwards to the Gateway town of Letterkenny.

2.4.25 Traffic data for this route are relatively limited, although a traffic count undertaken for an Environmental Impact Statement for the A5 Public Inquiry suggests that traffic crossing the Foyle at Strabane equates to 16,000 AADT (bi-directional).

2.4.26 Somewhat dated traffic counts are available for the N14 from 2004, a summary of which is presented in Table 2.6 below:

Table 2.6  N14 Traffic Counts

<table>
<thead>
<tr>
<th>Location</th>
<th>Daily Traffic (AADT)</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junction with N56 Letterkenny</td>
<td>18,148</td>
<td>NRA Traffic Counts 2004</td>
</tr>
<tr>
<td>South of Manorcunningham</td>
<td>7,323</td>
<td>NRA Traffic Counts 2004</td>
</tr>
<tr>
<td>At R236 Carrickdawson</td>
<td>5,739</td>
<td>NRA Traffic Counts 2004</td>
</tr>
<tr>
<td>At R265 north of Lifford</td>
<td>10,122</td>
<td>NRA Traffic Counts 2004</td>
</tr>
</tbody>
</table>

2.4.27 Traffic on the N14 is, perhaps unsurprisingly, at its greatest in and around Letterkenny. There is a notable diversion of traffic off of the N14 onto the N13 at Manorcunningham with trips bound for the Derry / Londonderry area. Traffic picks up again at Lifford, with much of that traffic presumably heading for the Border at Strabane.

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2.4.28 In terms of accident rates, the N14 is slightly worse than the national average, with 0.16 accidents per 10 million vehicle kilometres compared with the national average of 0.13.

**Freight Movements**

2.4.29 An important consideration in any infrastructure study is the movement of goods. Given the limited rail network in the Border Area, the majority of freight is moved by road. Figure 2.8 below illustrates Heavy Goods Vehicles (HGV) flows in Ireland.

![Figure 2.8 Daily Heavy Goods Vehicle Link Counts](image)

2.4.30 The Figure demonstrates that HGV flows in the Border Area are significant. In particular, the A5 has large concentrations of HGV traffic (5,000 – 10,000 HGVs) between Ballygawley and Omagh, around Strabane and on the approaches to Derry / Londonderry.

2.4.31 Interestingly, the Border area around Donegal, Fermanagh, Leitrim and Cavan, generates significant HGV flows for a rural area – 500-2,000 HGVs per day. A key point here is that the traffic is quite widely dispersed. Hence there are high volumes of HGVs using the N15 and A5 and the N16 and N4 to reach Larne and Belfast. In addition routes on both sides of Upper and Lower Lough Erne appear to converge on the N3 route to Dublin, whilst volumes on the A5 / N2 route apparently diminish at Castleblayney in contrast to volumes on the N1 route. This is in contrast to other major freight generating areas like Galway and Cork, where most of the outbound freight is concentrated along one corridor, the M6 in the case of Galway and the M8 in the case of Cork. This may suggest that the poor quality of the N16 is

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causing HGV traffic to inefficiently disperse across the Border Area rather than concentrating on the one route.

2.4.32 A previous report on the N16/A4 corridor revealed that Larne is the main port of embarkation of heavy goods and private cars travelling to Great Britain and onwards to continental Europe.¹² This point appears to be borne out by the freight flow diagram above and suggests that the N16/A4, while not classed as such, is an important conduit of trans-European travel.

2.4.33 In terms of the volume of freight moved, Figure 2.9 clearly demonstrates that the Border Region is the most freight intensive area of Ireland outwith the Dublin conurbation:

![Map of freight tonne movements](image)

**Figure 2.9 Freight tonnes move by road between NUTS 3 regions**¹³

2.4.34 Figure 2.9 clearly demonstrates the importance of the Border Region in terms of freight tonnage movements. It should however be noted that flows from the Border include County

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Louth (which is outwith our study area), which contains the port of Dundalk within its boundaries – this biases the figures to some extent. The key movement is along the routes between Northern Ireland and the Irish Border Counties, although there are also substantial traffic flows to Dublin. The combined Border Region tonnage exceeds traffic from any other corridor on the island, even that between Dublin and Belfast.

2.4.35 The Figure below shows freight movement in terms of value.

![Map showing freight transport between regions](image)

**Figure 2.10 Freight value moved by road between NUTS 3 Regions^{14}**

2.4.36 Figure 2.10 shows that there is again a significant value of freight moved between the Border Region and other parts of Ireland. However, given its predominance in terms of volume, the lower value flows compared to Dublin-Belfast and Cork-Waterford suggests that there is a high volume of low value goods being moved from the Border Region. Nonetheless, it is clear that the Border Region is a significant freight generator, all of which is almost exclusively dependent on the road network for transportation.

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^{14} Inter Trade Ireland., *Freight Transport Report for Ireland* (Newry, 2008), p. 34.
3 Transport and the Economy

3.1 Introduction

3.1.1 The relationship between transport, economic development and regeneration is a controversial issue that has caused much debate amongst academics and policymakers over a long period of time. Advocates of transport schemes argue that investment in transport infrastructure and services deliver economic benefits through reduced journey times, better accessibility and through making an area more attractive to both businesses and labour. However, it is often argued that such investment causes mainly a redistribution of both jobs and labour as opposed to delivering ‘additional’ benefits.

3.1.2 In 2006, MVA Consultancy was commissioned by the then Scottish Executive to undertake a study into the scope for improving connections between Ayrshire and the Central Belt. As part of this commission, it was requested that MVA reproduce this literature review of the links between transport and the economy. We updated the baseline in further studies in Caithness and for the A737 Dalry Bypass in North Ayrshire. The findings from this research are particularly relevant to this study and we have reproduced and updated the relevant chapter here. That is, in considering potential transport investment in Border Area, it is important that we understand the effect that it may have and how it can contribute to the economic development and regeneration of the area.

3.1.3 It should be noted that this review is only a high level introduction to the links between transport and the economy. At the conclusion of the chapter, we have attempted to make some broad conclusions as to how this analysis relates to the future of the ICBAN area. However, far more detailed local analysis would be required to fully understand the link between transport improvements in the Border area and their impact on the economic performance of that area.

3.2 Overview

“‘That there is a link between good infrastructure and the economy is taken as self-evident by most businesses and professionals, but despite a mountain of academic analysis, the nature of the relationship remains somewhat opaque’. The Standing Advisory Committee on Trunk Road Assessments (SACTRA) 1999 Report, Transport and the Economy looked at the issue in some detail but failed to establish any simple, clear rules.”

3.2.1 The above quotation illustrates the difficulties faced in addressing the question of the links between improved transport and economic performance. It is indeed self-evident that a modern economy requires effective communication links – all would acknowledge for example that Northern Ireland and the Republic of Ireland would not function as effectively without their strategic road networks, but quantifying these effects and impacts has proven to be extremely difficult. In the UK, it is particularly difficult to determine the impact of a single transport scheme on economic performance, which even if significant, is generally

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16 Local Transport Today – 8/12/2005
making only a marginal change to a highly developed transport system. It may be somewhat easier to understand the impacts in the Irish Border Area as the transport infrastructure is relatively limited and any improvement could have significant impacts.

3.2.2 Until the release of the Eddington Review in December 2006, the most authoritative work on the relationship between transport and the economy published in recent years was the SACTRA report of 1999 referred to above. The main mechanisms identified by SACTRA through which improved transport could lead to improved economic performance were:

- reorganisation or rationalisation of production, distribution and land-use;
- effects on labour market catchment areas and hence on labour costs;
- increases in output resulting from lower costs of production;
- stimulation of inward investment;
- unlocking inaccessible sites for development; and
- triggering growth which in turn stimulates further growth.

3.2.3 This list provides a useful context in which to consider the potential economic effects of transport schemes.

3.3 Appraisal and Economic Impact

3.3.1 There have been well established appraisal methods for over 30 years which estimate the ‘benefits’ of a transport proposal by placing a monetary value on reductions in travel times and savings in vehicle operating costs, from a social welfare perspective.

3.3.2 However, establishing statistical causal links between improved transport and economic performance (measured by eg GDP / GVA, productivity or employment) has proven elusive to researchers – ie how, if at all, do the travel time savings identified appear as other economic indicators ‘on the ground’ once the project is in place?

3.3.3 This question has led to a large volume of literature addressing the question of the links between transport and economic development from an ex-post perspective (ie economic impact). It is this literature which proves most inconclusive. In part, because of this lack of empirical evidence, appraisal methods which extend beyond social welfare explicitly into economic impact have not until recently existed and the methods which are now being advanced are largely theoretical and at an early stage of application.

3.3.4 The pioneering Eddington Review established the following list of ‘micro-economic’ drivers by which transport may impact on growth and productivity: (similar to the SACTRA list)

- mobility of people and goods;
- enhancing agglomeration;
- labour markets and migration;
- boosting intra- and inter-regional trade and competition;
- boosting international trade; and
- enhancing the attractiveness of the UK for foreign investment.
3.4 Breaking the question down

3.4.1 It is helpful to consider the relationship between transport and economic development from a few distinct perspectives.

**National Level**

3.4.2 At the national level, appraisal methods currently use a measure of social welfare benefits and costs. ‘Welfare’ or ‘Social Welfare’ is the total well-being of society. It reflects the ‘utility’ of people within society. Although the level of welfare is impossible to measure, it is possible to assess the changes resulting from a project or policy. Social cost-benefit analysis is based on assessments of welfare benefits and costs. Social welfare benefits arise primarily from reductions in travel time and accidents (both converted into a monetary value), and vehicle operating costs.

3.4.3 Most proposed transport schemes are appraised in this way – combined with a range of appraisals against other criteria. Schemes which produce a significantly large social welfare benefit relative to their cost of construction or implementation are deemed ‘good’ projects from this perspective.

3.4.4 Until recently, this social welfare measure has been deemed a comprehensive measure of the economic value of a scheme to the national economy (ie GDP), given the key assumption of perfect competition. This means that changes in transport costs resulting from a scheme are converted into wider economic effects, such as reduced wage costs or increased property values. At a national level, further ‘economic development’ benefits have not been accepted as ‘valid’ in appraisal terms.

3.4.5 However, new guidance was produced by the UK Department for Transport in July 2005 concerning *Transport, Wider Economic Benefits, and Impacts on GDP*.¹⁷ ‘Wider’ economic benefits contribute to the impact of transport on productivity and GDP and are caused by market imperfections in transport-using industries (eg imperfect competition). This new guidance suggests that although many of the welfare gains currently calculated during the appraisal of a transport scheme appear as increases in GDP, there can be substantial additional benefits to GDP which are not currently captured. This marks a significant departure from conventional thinking, whereby the schemes will be appraised perhaps in terms of both their welfare and GDP impacts.

3.4.6 The areas where wider ‘welfare’ benefits arise are:

- **agglomeration economies** – some firms gain productivity benefits from proximity to other firms, improved transport can bring these firms ‘closer’ together (also a GDP benefit);

- **increased competition as a result of better transport** – competition between firms in the economy drives down prices and improves efficiency, improved transport increases the ‘reach’ of firms, and therefore increases competition;

- **increased outputs in imperfectly competitive markets** – in most sectors, competition is not ‘perfect’ eg buyers are not equipped with all the necessary information to make an informed choice. Improved transport can induce firms to

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¹⁷ Note that this new guidance is not yet applicable in Scotland.
increase production and the value of this increased production is greater than the cost of producing it, ie the marginal benefit of this new production is likely to exceed the marginal cost (also a GDP benefit); and

- **economic welfare benefits from improved labour supply** – improved transport can give people access to higher paid jobs resulting in extra tax revenue that is not currently captured in the appraisal.

3.4.7 The areas where wider ‘GDP’ benefits arise are:

- **increased labour force participation** – more people choose to work as a result of a transport improvement;
- **people working longer hours** – as a result of reduced commuting time; and
- **move to more productive jobs** – a relocation of jobs to higher productivity locations.

3.4.8 The new methodology, which has been demonstrated to significantly increase the identified benefits of a scheme, was piloted in submissions for the DfT Transport Innovation Fund (TIF), in England. The DfT specified that the type of schemes which may be eligible for increased funding include road or rail access to ports or airports and inter-urban connections that reduce business costs. This gives a clear steer regarding the nature of the schemes which are envisaged to have the greatest effects on GDP, and this type of scheme is of particular relevance to the Irish Border area context.

3.4.9 Table 3.1 below summarises the above discussion in terms of whether benefits are picked up in welfare or GDP appraisal.

**Table 3.1  Wider Economic Impacts’ Summary**

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Welfare</th>
<th>GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business travel time savings</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Commuting time savings</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Leisure time savings</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Increase in labour force participation</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>People working longer</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Move to more productive jobs</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Agglomeration benefits</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Increased competition</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Imperfect competition</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Exchequer benefits of increased GDP</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
Regional Level

3.4.10 Until relatively recently, the view of government was that a comprehensive calculation of the welfare benefits of a proposed scheme gave an exhaustive measure of the value to the country of a transport scheme. Anything additional to this was regarded as double-counting of benefits.

3.4.11 In July 2003, the Department for Transport (DfT) published ‘Guidance on Preparing an Economic Impact Report (EIR)’, in response to the recommendations made by SACTRA. The EIR fits within the NATA appraisal framework under the heading of ‘Economy: Wider Economic Impacts’. It provides guidance on how to measure the economic impact, in the form of employment effects, of transport schemes. However, a key element of the EIR is that it is primarily concerned with the effects of a scheme on the distribution of economic activity, and is only relevant if the scheme is affecting a pre-defined ‘Regeneration Area’. The EIR therefore recognised that schemes which addressed regional imbalances (such as those faced by the Border area) and assisted ‘Regeneration Areas’ were better than schemes which did not, given an equivalent benefit-cost ratio, ie re-distributional effects were now seen as a positive impact.

3.4.12 In Scotland, the Scottish Government published the refreshed Scottish Transport Appraisal Guidance (STAG) in March 2008. A new element of appraisal required by STAG is Economic Activity and Location Impacts (EALI) analysis. The aim of EALI analysis is to describe the impacts of a transport investment on the economy, using income and / or employment as key measures. It is recommended that the EALI analysis is presented in terms of:

- the net impact at the Scotland level (beyond that calculated in the welfare based cost-benefit analysis); and
- gross components, which distinguish impacts on particular areas and / or on particular groups in society.

3.4.13 It is recognised however that ‘net’ impacts will occur in only a ‘very few’ cases (for the largest schemes), and in practice the analysis focuses on the local and distributional impacts of the scheme. Unlike the EIR however, STAG EALI analysis is not restricted to ‘regeneration areas’, but projects which impact positively on areas defined as socially excluded will be viewed favourably as they are supporting other Scottish Government policies. This approach would be of value in the Border Area, as it would more explicitly recognise the social benefits associated with improved transport provision.

Summary of Appraisal

3.4.14 The evolution of the appraisal of the economic benefits of transport schemes can be thought of as occurring in three main stages:

- originally welfare benefits calculated from cost-benefit analysis were regarded as comprehensive with anything else deemed double-counting, assuming perfect competition in the economy;
- it was then acknowledged that distributional effects can be of benefit to lagging areas; and
most recently, a new view has emerged that schemes should also be appraised in terms of their impact on GDP explicitly, recognising that market imperfections give rise to additional benefits (both in GDP and welfare terms).

3.5 Empirical Evidence

3.5.1 As was highlighted at the outset of this chapter, there has been a large volume of academic work over many years which has attempted to identify clear links between transport provision and economic development.

3.5.2 The most recent and indeed most comprehensive study of the links between transport and the economy was the Eddington Transport Study, which explores the long-term links between transport and the UK’s economic productivity, growth and stability. Eddington acknowledges from the outset that in mature economies like that of the UK, the effects of ad hoc large scale transport investment may be ambiguous. Instead, Eddington contends that it is constraints on the existing transport network that are the biggest obstacle to development. It is argued that the most notable of these constraints in the UK is congestion, which is generally concentrated in major urban areas and key strategic corridors at certain points of the day. Congestion and other bottlenecks (such as a shortage of rail capacity) reduce the scope for agglomeration, increased competition, wider labour catchment areas etc by increasing travel time. The implications of Eddington’s conclusions are clear: strategic economic priorities for long-term transport investment should be concentrated in growing and congested urban areas and their catchments as well as key inter-urban corridors and international gateways that are demonstrating escalating congestion and unreliability of travel times. The conclusions of Eddington demonstrate that the greatest return on transport investment can be harvested by investing in eliminating existing local bottlenecks and facilitating the movement of people and goods. This, in many respects, is what ICBAN is seeking to do in the Border Area.

3.5.3 Many authors have contributed to the debate on the relationship between transport and economic development by reviewing the available evidence, often in the light of a policy objective and without conducting an original study. Selected papers of this nature are considered in Table 3.2 below to determine the range of thought concerning the understanding of the relationship between transport and economic development.

Table 3.2 Summary of studies which review available evidence

<table>
<thead>
<tr>
<th>Author</th>
<th>Approaches Considered</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arnott (1987)</td>
<td>Business and local economic development, land and property development, labour market and access to work</td>
<td>Developer attitudes to the marketing of sites and premises is significantly more sensitive to accessibility than the actual experience of business and transport operators, transport can be a potentially important economic development and planning tool</td>
</tr>
<tr>
<td>Button (1994)</td>
<td>Use of meta-analysis on previous work, values of time, impact studies</td>
<td>The best use is not made of previous studies when estimating the effects of a new project, previous studies are not used collectively for</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Author</th>
<th>Approaches Considered</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Button and Rietveld (1996)</td>
<td>Use of meta-analysis</td>
<td>Caution should be exercised in hoping that large scale infrastructure investment programmes will stimulate rapid and more even economic development within the pan-European region.</td>
</tr>
<tr>
<td>Drew (1990)</td>
<td>Methodologies: Urban and regional growth, effects of traffic changes, impact evaluation, economic base, input-output, regional economic models</td>
<td>Direct effects of infrastructure spending can be modelled using input-output analysis, its significance as a catalyst to economic growth depends on the socio-economic nature of the region.</td>
</tr>
<tr>
<td>Drew (1990)</td>
<td>Economic impact methodology, modelling impacts of transport, economic impacts of modal investments, case studies and state planning issues</td>
<td>There is no single causal-based policy sensitive methodology applicable to all modes for all levels of analysis. Results from impact studies are meagre. Measurable and causative relationships between transport and economic development are currently impossible to estimate.</td>
</tr>
<tr>
<td>Eno Foundation (1983)</td>
<td>US transport costs, location decisions, policy objectives</td>
<td>Complexity and unpredictably of the economy undermines the economic model as a tool to be used in selecting promising transport schemes. Communities that allow transport facilities to deteriorate may find new investments going elsewhere.</td>
</tr>
<tr>
<td>Ernst (1981)</td>
<td>Incremental evaluation, strategic evaluation, industrial location analysis, US</td>
<td>Understanding of the interactions between transport investment and economic development is too sketchy to allow for deriving any firm performance criteria from economic policy goals.</td>
</tr>
<tr>
<td>Gwilliam (1979)</td>
<td>Transport costs, location theory, land-use - transport models, inter-regional freight flows, impact studies</td>
<td>Relevant areas of theory are ambiguous and their related hypotheses are impossible to test empirically, transport investment has a limited impact on regional activity.</td>
</tr>
<tr>
<td>Hurdle (1992)</td>
<td>Railways, road building, inner cities, light rapid transit, regional economic development</td>
<td>The argument for transport investment achieving national economic growth is weak and transport investments are unlikely to have a major impact on the distribution of economic activity.</td>
</tr>
<tr>
<td>Lee (1981)</td>
<td>US light rapid transit urban revitalisation, local economic development, efficient development patterns</td>
<td>Quantitative estimates of benefits are likely to be very imprecise, political involvement is more important than lengthy scientific analysis.</td>
</tr>
<tr>
<td>McQuaid &amp; Greig (2002)</td>
<td>Transport &amp; the Scottish Economy - Key Issues</td>
<td>Little is known about the real links between transport and economic development. Much policy is supported by anecdote, ignoring displacement, and expectation of links, rather than real evidence. Key research issues suggested included ex post empirical studies of wider impacts, and further investigation of micro-level behavioural impacts.</td>
</tr>
<tr>
<td>Author</td>
<td>Approaches Considered</td>
<td>Conclusions</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Parkinson</td>
<td>COBA freight benefits, before and after studies, econometric evidence, surveys of</td>
<td>It is implausible that road schemes will lead to significant increases in</td>
</tr>
<tr>
<td>(1981)</td>
<td>firms, industrial rents, international evidence, labour market</td>
<td>GDP, some schemes will assist localised relocation, it is probable that the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>road programme has had a small effect on the distribution of employment in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the long term</td>
</tr>
<tr>
<td>Rietveld</td>
<td>Multi-regional models: Land-use - transport models, production function, transport</td>
<td>Production function and interview approaches suggest the greatest impact,</td>
</tr>
<tr>
<td>(1994)</td>
<td>cost, location models, interviews with entrepreneurs</td>
<td>need to consider the perceptions of new infrastructure, identification of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>data deficiencies</td>
</tr>
<tr>
<td>SACTRA</td>
<td>Wide ranging review</td>
<td>Direct statistical and case study evidence on the size and nature of the</td>
</tr>
<tr>
<td>(1999)</td>
<td></td>
<td>effects of transport cost changes is limited. The state of the art in this</td>
</tr>
<tr>
<td></td>
<td></td>
<td>important field is poorly developed and the results do not offer convincing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>general evidence of the size, nature or direction of local economic impacts.</td>
</tr>
<tr>
<td>Sharp</td>
<td>UK transport costs, inter-regional commodity flows</td>
<td>Transport investment unlikely to cause significant new activity in less</td>
</tr>
<tr>
<td>(1980)</td>
<td></td>
<td>prosperous regions, transport must be provided to supplement government</td>
</tr>
<tr>
<td></td>
<td></td>
<td>regional policies</td>
</tr>
<tr>
<td>Whitelegg</td>
<td>Previous general studies, economic indicators</td>
<td>Road construction is of no benefit to depressed regions and a disbenefit to</td>
</tr>
<tr>
<td>(1985)</td>
<td></td>
<td>urban areas</td>
</tr>
<tr>
<td>Wilson</td>
<td>25 year survey of US practice in transport economics</td>
<td>Cause and effect in the relationship of transport to urban or national</td>
</tr>
<tr>
<td>(1986)</td>
<td></td>
<td>economic growth are easy to mix up, call to include distributional effects in</td>
</tr>
</tbody>
</table>
<pre><code>                                                                                           | cost-benefit analysis                                                       |
</code></pre>

3.5.4 The conclusions summarised in Table 3.2 highlight the range of views on the topic, demonstrating the lack of consensus amongst academics and practitioners. A more recent study by DTZ Pieda for the Welsh Office (Economic Impact of Road Infrastructure Investment – Stage 3 Report, 2004) concluded that:

- ‘The existing body of evidence is more compatible with the view that transport can affect the distribution of economic activity than with the claim that transport investment materially affects growth at the UK levels’ and ‘the evidence on even regional and local impacts is poorly developed. Individual studies have produced reasonably convincing evidence of particular projects but it is difficult to draw very general conclusions from the evidence.’

3.5.5 The DTZ Pieda report is worth considering in a little more detail. The brief literature review covered the following areas.
Costs of Production

3.5.6 A study by Cardiff Business School (1996) found that almost 30% of businesses believed that improvements to the A55 in North Wales had reduced their production costs either by reducing delivery costs or by new suppliers entering the market forcing local suppliers to reduce prices. However, there was no evidence that the catchment area for the businesses products had expanded as a result, although it was argued that delivery costs to customers were now lower which had a positive impact on competitiveness. This is an interesting point as north-west Wales shares many similarities with north-west Ireland – eg highly rural, low population density, key transport gateways etc.

3.5.7 Cambridge Economic Consultants (1987) argued that the opening of the first Severn Bridge could potentially change South Wales from being a high cost transport location to an average cost transport location.

Widening Labour Catchment Areas

3.5.8 It was noted that the potential of road improvements to widen labour catchment areas is dependent on specific geographical areas and the circumstances surrounding each project. An example of the above point is illustrated by a Welsh Office study in 1981 concerning the improvements that were proposed to the A55 in North Wales. The study found that 35% of manufacturing firms and 34% of distribution firms surveyed believed that the A55 improvements could influence travel-to-work patterns and the extent of the labour catchment area of their plants. Of the companies surveyed, 50% were located in an area of relatively low unemployment with an area of higher unemployment to the east. As the road improvement promised significant journey time reductions, companies in the low unemployment area were expecting an increase in the number of people now prepared to travel to their area for employment.

3.5.9 Cleary and Thomas (1973) observed a somewhat different result in one of the first studies of the impact of the first Severn Bridge. While the bridge had a significant impact on business travel in terms of staff being able to operate from the one base and cover both sides of the estuary, there was expected to be little impact on commuting because there was very little industrial activity within ten miles of the bridge. As such, only highly paid executives would consider opportunities on the other side of the bridge. However, it must be noted that this information is now almost 40 years old and may not be as applicable in today’s more mobile society with its higher level of car ownership.

3.5.10 Pieda (1992) found that levels of commuting across the Second Severn Crossing were low and that the benefits were not likely to be sufficient to deepen the labour pool on either side of the crossing. A good example of the potential ‘two-way’ effects of transport schemes is highlighted by the study of a new road link from the Kristiansund to the mainland of Norway. While commuting did increase, there was also significant business relocation from the island to the mainland. In essence, many people were now commuting to the relocated jobs. In short, while road improvements can undermine the competitive position of local economies, the long-term impacts may be positive due to lower costs of production, lower prices and an enlarged labour market.
3 Increased Competition

3.5.11 A study by Pieda (1999) analysed the socio-economic impact of the Skye Bridge. It found that construction sector businesses working in the local Skye and Lochalsh market had become more exposed to competition from firms elsewhere in Scotland who were now able to access the Skye market more easily. However, it is likely that the consumers of construction services in this market benefited from lower prices as a result of increased competition.

3.5.12 Before the construction of the bridge, Skye was particularly peripheral with the only access to the island being via ferry. As such, the bridge had the potential to bring a marked increase in competition.

3 Impacts on Inward Investment

3.5.13 Dunning (1988) investigated the locational preferences of international businesses located in the UK. The survey was split into 30 ‘regional’ firms and 53 ‘branch firms’. A ‘regional’ firm was defined as one which has responsibility for a region (e.g. Europe) of coordinating the operations of a multi-national enterprise and a ‘branch’ firm was defined as one which performs the same role only in a smaller geographical region and without the coordination role. For all of the ‘regional’ firms, the most important locational factor was access to airports with others (in order of priority) including language, market size and prospects, telephone communications and the general business framework. For ‘branch’ firms, the key locational factors were proximity to clients, language and market size and prospects.

3.5.14 A similar study by Hall et al (1987) attempted to determine why 40 Berkshire companies chose to locate in the Thames Valley (or the eastern part of the M4 corridor). The percentage of firms mentioning the following main factors were:

- Heathrow Airport (75%);
- M4 motorway (63%);
- other motorways and roads (40%);
- access to suppliers (40%); and
- availability of suitable premises (40%).

3.5.15 DTZ Pieda argue that the indicative conclusion from these studies is that roads (other than motorways) are in the ‘middle ranking’ in terms of importance in location decisions. A study into the effects of the M4 in attracting 18 firms to (re)locate in Gwent found that eight firms (44%) had been attracted by the prospect of motorway access while three of these firms noted that it had been a major incentive (Welsh Office, 1981).

3.5.16 Pieda (1992) found that the Second Severn Crossing was a potentially major influence in 6% of 27 companies’ decision to locate or expand in South Wales in the future. Other key locational factors included access to suitable sites, proximity to markets and proximity to former sites. A study by Cardiff Business School (1997) discovered that the dualling of the A470 played an important role in attracting inward investment to Merthyr. Three companies actually stated that the road improvements were a key factor in their decision to locate in the area. The study also sought to quantify the employment benefits arising from the new inward investment projects around Merthyr. It found that ‘without the supporting

34
infrastructure of roads it is unlikely that Merthyr would have been entered into feasibility studies for these new inward investment projects, with such wider effects on the local economy'.

3.5.17 The results of a study by Thornton (1978) are in stark contrast to those above. It sought to discover how successful Bradford was in attracting new industry given that the M606 linked the city with the M62, which in turn connects to Manchester, Leeds and Hull. While five businesses had opened manufacturing plants in the area in the four years prior to the study, none of the companies identified the road network as a key factor in their location decision.

Opening Sites for Development

3.5.18 It is argued that road infrastructure can play a key role in developing previously inaccessible sites. A case study of the M40 by Headicar and Bixby (1992) examined the development and traffic effects in the immediate vicinity of the motorway. The report found that the motorway altered the nature and pattern of accessibility meaning that certain types of new development became feasible (eg major shopping centres requiring large catchment areas). The focus of accessibility also changed from traditional town centres to motorway intersections.

3.5.19 Pieda argue that the study robustly proved that:

- development had taken place on land not previously developed and outside the provisions of the approved development plan;
- the nature and intensity of development had been very different from previous development in the vicinity; and
- the development has significant traffic generation factors.

3.5.20 Cardiff Business School (1997) discovered that the opening of the latest section of the A470 has assisted in the opening of a new retail development area to the west of Merthyr. Similarly, Gould (1997) found that the M25 has played a significant role in extending the catchment area for regional shopping and warehouses.

3.5.21 The main themes drawn out of the above were:

- that research evidence suggests that major road improvements do reduce production costs in the areas they serve;
- variable evidence on the impact on labour catchment areas;
- road provision only rarely influences inter-regional location decisions; and
- intra-regional and local location decisions are strongly affected by roads investment (particularly retail).

3.5.22 In addition to the above, a further literature review undertaken by Leitham (1996) does demonstrate a wealth of studies which do give some support to the notion that transport infrastructure is a significant economic factor. Equally, there is much evidence that transport infrastructure projects do not fulfil their economic promise. There are pre-project appraisals, where very considerable benefits additional to road-user benefits were predicted, and other studies which demonstrated that significant benefits are difficult to attribute to one infrastructure project. More success in determining a relationship is met when transport
infrastructure is considered at a more aggregate level, over a period of many years. The clearest conclusions are that the methodology and spatial scale adopted in a study are critical in determining likely post-project effects (Rietveld, 1994). As Drew (1990) concluded, ‘measurable, causative relationships between transport and economic development are currently impossible to estimate’, and ‘there is no single causal based policy sensitive methodology applicable to all modes for all levels of analysis’.

3.5.23 It is clear from the literature that there is still much to be learned, both in terms of methodology and data. The importance of perceptions and qualitative factors has also been demonstrated (eg Henley et al, 1989), in order to investigate factors outwith the strict assumptions of much economic theory and cost-benefit analysis.

3.6 Summary and Relevance to the Border Area

3.6.1 The inconclusive nature of the large volume of work which has attempted to quantify the economic effects of transport schemes has influenced the methods used in the appraisal of transport schemes. In the past, Government has been cautious when responding to some of the ‘new jobs’ claims made by promoters of particular schemes. This caution has been based, in part, on the lack of empirical evidence. Nonetheless, promoters of schemes do routinely make claims as to how these schemes will provide a boost to the economy (often without specifying at what spatial scale, ie local / regional / national), and it remains something of an article of faith that improved transport will bring economic benefits. New transport schemes will indeed generally bring reduced travel times – the issue is how these savings feed through into the wider economy, and this remains an area of significant uncertainty. There is a strong theoretical case that the time savings do translate into increased economic activity but the empirical evidence is limited.

3.6.2 Transport costs tend to be a low proportion of operating costs for most businesses, and reductions in transport cost therefore making a small change to a low proportion of operating costs, although this could be a more significant proportion of profits. In addition, from an economic development point of view, the cost of the transport measure is rarely compared with the cost of other policies which could boost economic development, ie the ‘opportunity cost’.

3.6.3 There are no clear ‘rules’ as to in which local circumstances improved transport is likely to bring significant benefits in terms of economic development, eg which industrial mix, which geographical orientation etc. Present day guidance in the Scottish Transport Appraisal Guidance requires that an assessment is made of the impact of any transport proposal in terms of Economic Activity and Location Impacts (EALI). EALI is undertaken separately from Transport Economic Efficiency (TEE), the social cost-benefit analysis element of the appraisal.

Relevance to the Border Area

3.6.4 A recurring theme in the analysis has been doubt over the impact of transport improvements in an area with an already well developed transport network, the UK being a frequently cited example. However, it can be strongly argued that the transport network in the Border area is not currently well developed – the N16 in particular is of a poor standard. One can therefore contend that investment in Border area will, in wider economic terms, potentially offer greater returns than further investment in and around areas like Dublin.
3.6.5 The work of Bradley and Best on the Border area suggested the creation of an economic development zone and it can be argued that targeted transport investment to support such aspirations could be of considerable value.

3.6.6 Evidence from the seminal Eddington study also suggested that improvements to links to key gateways, ports and airports can deliver the largest economic impacts. A number of the proposed interventions in this study would enhance links between the gateways of Derry / Londonderry, Sligo and Letterkenny with the rest of the island of Ireland and beyond.

3.6.7 At a more strategic level, the best strategy is to determine the transport-related issues which act as constraints on the expansion / retention of economic activity (addressed in Chapter 6). Schemes which tackle or resolve these problems are likely to have a greater impact on economic development than other schemes and will therefore generally be of a higher priority.
4 Economic Profile of the Border Area

4.1 Overview

4.1.1 This chapter examines a range of socio-economic data for the Border Area comparing it both with national averages and other regions of the island of Ireland. In undertaking this analysis, we will set the context for how improved transport infrastructure can contribute towards an improvement of the Border Area’s economic fortunes.

4.1.2 It is important to note at the outset that the purpose of this chapter is to demonstrate the economic issues in the Border Area that improved transport links can address. It is not intended to be a detailed review of the local economy (for which there is already a voluminous literature). For example, it does not consider local educational qualifications, as transport improvements would have very little impact on the quality and extent of educational provision.

4.2 Data Considerations

4.2.1 A key challenge encountered in developing an economic baseline for such a large and diverse area is data consistency. Good quality information is available from a variety of sources, including the Northern Ireland Statistics and Research Agency (NISRA) and the Central Statistics Office Ireland (CSO). However, it is often difficult to obtain consistent data for individual Counties or District Councils, both within and across countries.

4.2.2 The issue with data is that, in the case of the RoI, the counties comprising the Border area, with the addition of County Louth, are together identified as one of the eight economic planning Regions of the national economy so the data are only one level down from the comprehensive national data. In the case of Northern Ireland, the local councils comprising the Border Area are not explicitly combined in any official UK or Northern Ireland economic publications. Rather in Northern Ireland, the Border Area has to be constructed from a range of overlapping sub-regional divisions of Northern Ireland – eg NUTS 3, 26 District Council areas, PSNI etc. Furthermore, the resulting sub-regional data is at least two levels down from the comprehensive national UK data.19

4.2.3 Nonetheless, we believe that we have developed a significantly robust baseline which demonstrates that the Border Area lags the economic performance of other areas of the RoI and Northern Ireland.

4.3 Population

4.3.1 A central indicator of the economic vitality of an area is its population. Absolute levels of population, trend growth, population density and migration are important barometers of general economic health. Areas with a large and growing urban population and net in-migration tend to be performing well. Conversely, areas with a low and declining

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population base and net out-migration tend to be demonstrating signs of economic weakness.

4.3.2 Both Northern Ireland and the Republic of Ireland witnessed rapid population growth in the early 2000s. A strong global economy, favourable rates of corporation tax and policies conducive to inward investment (Republic of Ireland) and a stable political climate (Northern Ireland) were just some of the factors that drove the island forward. While the economy, particularly in the Republic of Ireland, has gone into reverse in recent years, the ‘boom years’ created a positive climate for public investment, including the realisation of numerous major transport projects. The growth of recent years has helped transform Ireland from an island traditionally associated with emigration to one witnessing rapid population growth, population retention and net in-migration.

Population Trends

Key Point: Population growth and in-migration has been strong in both Northern Ireland and the RoI in recent years. However, in Northern Ireland, the strongest population growth has been in the areas nearest to Belfast, with weaker and sometimes negative growth in the north and west.

4.3.3 The Border Area experienced strong growth between 2002 and 2006, with the rate of growth outstripping the national average. Table 4.1 shows trend growth and absolute levels of population between 2002 and 2006 in the five ICBAN counties in the Republic of Ireland.

Table 4.1 ICBAN Counties (Republic Of Ireland) – Population Trends

<table>
<thead>
<tr>
<th>County</th>
<th>2002 Population</th>
<th>2006 Population</th>
<th>Actual Change</th>
<th>% Change</th>
<th>% Natural Change</th>
<th>Migration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donegal</td>
<td>137,575</td>
<td>146,956</td>
<td>9,381</td>
<td>7%</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td>Sligo</td>
<td>58,200</td>
<td>60,863</td>
<td>2,663</td>
<td>5%</td>
<td>43%</td>
<td>57%</td>
</tr>
<tr>
<td>Leitrim</td>
<td>25,799</td>
<td>28,837</td>
<td>3,038</td>
<td>12%</td>
<td>7%</td>
<td>93%</td>
</tr>
<tr>
<td>Cavan</td>
<td>56,546</td>
<td>63,961</td>
<td>7,415</td>
<td>13%</td>
<td>17%</td>
<td>83%</td>
</tr>
<tr>
<td>Monaghan</td>
<td>52,593</td>
<td>55,816</td>
<td>3,223</td>
<td>6%</td>
<td>34%</td>
<td>66%</td>
</tr>
<tr>
<td>ROI</td>
<td>3,917,203</td>
<td>4,234,925</td>
<td>317,722</td>
<td>8%</td>
<td>33%</td>
<td>67%</td>
</tr>
</tbody>
</table>

4.3.4 It can be seen from Table 4.1 that population growth in the Republic of Ireland has been extremely strong in the years leading up to 2007. Of particular interest has been the Border Counties of Leitrim and Cavan, which have seen population growth significantly in excess of the national average. The population growth in these areas has been strongly driven by in-migration, which accounts for 93% of the population growth in Leitrim and 83% in Cavan. Other areas like Donegal and Monaghan have witnessed strong growth but have trailed the national average to some extent. Again, this has been driven more by net migration than natural population growth. However, while population has been growing, an uneven pattern

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of growth has reinforced a dispersed settlement pattern across the region, with some clustering around the main towns.\textsuperscript{21}

4.3.5 The preliminary results from the 2011 Census suggests that population growth has continued almost unabated in the Border Counties. The Irish population has grown by 8.1\% since 2006, which compares with a growth rate of 9.8\% in the Border Counties. The fastest growing County was Cavan, which registered growth rates of 13.9\%. Leitrim, Sligo, Monaghan and Donegal also recorded growth of between 5\% and 10\%. There has been a more general trend of out-migration from cities (eg Cork, Limerick and Dublin) to suburban counties (eg Laois, Kildare, Cork County, Fingal etc). This may to some extent reflect the impact of the economic downturn as job opportunities become scarcer in cities.\textsuperscript{22}

4.3.6 Forfás, the Irish economic development agency, explain that population growth in the Border Area has been uneven and concentrated around the larger urban centres and in eastern areas within commuting distance of the greater Dublin area.\textsuperscript{23}

4.3.7 The continued population growth of the Border Counties will naturally put pressure on the transport infrastructure in these predominantly rural areas. Congestion and unreliable journey times can make an area unattractive and stall growth, an important consideration when prioritising new transport investment.

4.3.8 Table 4.2 provides an indication of population growth in the ICBAN Local Council Areas in Northern Ireland.

\textsuperscript{21} Forfás Regional Competitiveness Agenda: Realising Potential: Border, p. 5.
\textsuperscript{22} \url{http://www.cso.ie/census/documents/Commentary%20part%201.pdf}
\textsuperscript{23} Forfas, p. 3.
Table 4.2 ICBAN and NWRCBG Counties (Northern Ireland) – Population Trends

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Armagh</td>
<td>54,958</td>
<td>56,789</td>
<td>59,441</td>
<td>3%</td>
<td>5%</td>
<td>8%</td>
</tr>
<tr>
<td>Cookstown</td>
<td>33,039</td>
<td>34,769</td>
<td>36,655</td>
<td>5%</td>
<td>5%</td>
<td>11%</td>
</tr>
<tr>
<td>Londonderry / Derry City</td>
<td>106,193</td>
<td>107,904</td>
<td>109,826</td>
<td>2%</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>Dungannon</td>
<td>48,232</td>
<td>52,334</td>
<td>57,748</td>
<td>9%</td>
<td>10%</td>
<td>20%</td>
</tr>
<tr>
<td>Fermanagh</td>
<td>58,148</td>
<td>60,570</td>
<td>63,076</td>
<td>4%</td>
<td>4%</td>
<td>8%</td>
</tr>
<tr>
<td>Limavady</td>
<td>33,210</td>
<td>34,346</td>
<td>33,564</td>
<td>3%</td>
<td>-2%</td>
<td>1%</td>
</tr>
<tr>
<td>Magherafelt</td>
<td>40,400</td>
<td>42,419</td>
<td>44,730</td>
<td>5%</td>
<td>5%</td>
<td>11%</td>
</tr>
<tr>
<td>Omagh</td>
<td>48,919</td>
<td>51,030</td>
<td>52,866</td>
<td>4%</td>
<td>4%</td>
<td>8%</td>
</tr>
<tr>
<td>Strabane</td>
<td>38,407</td>
<td>39,132</td>
<td>40,099</td>
<td>2%</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>1,696,641</td>
<td>1,741,619</td>
<td>1,799,392</td>
<td>3%</td>
<td>3%</td>
<td>6%</td>
</tr>
</tbody>
</table>

4.3.9 The pattern of population growth in Northern Ireland has been similar to that seen in the Republic, although the pace has generally been more modest. It is however notable that the largest growth has been experienced on the west side of Lough Neagh - Dungannon (20% between 2002 and 2010), Cookstown (11%) and Magherafelt (11%). This may, to some extent, reflect improvements to journey times brought about by transport investment, which has made Belfast more accessible from these communities.

4.3.10 Population growth has been more limited in the north-west. Indeed, the population in Limavady declined by 2% between 2006 and 2010. This may, some to some extent, reflect the peripherality of these communities from the Belfast and Dublin growth poles.

4.3.11 Table 4.3 assesses levels of migration in the Northern Ireland Local Council areas.

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24 http://www.nisra.gov.uk/demography/default.asp42.htm
### Table 4.3 ICBAN and NWRCBG Counties (Northern Ireland) – Migration Trends

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Armagh</td>
<td>234</td>
<td>416</td>
<td>385</td>
<td>147</td>
<td>220</td>
<td>1,402</td>
</tr>
<tr>
<td>Cookstown</td>
<td>233</td>
<td>312</td>
<td>341</td>
<td>234</td>
<td>90</td>
<td>1,210</td>
</tr>
<tr>
<td>Londonderry / Derry City</td>
<td>-187</td>
<td>75</td>
<td>-31</td>
<td>-214</td>
<td>-133</td>
<td>-490</td>
</tr>
<tr>
<td>Dungannon</td>
<td>1061</td>
<td>1,443</td>
<td>1,421</td>
<td>694</td>
<td>546</td>
<td>5,165</td>
</tr>
<tr>
<td>Fermanagh</td>
<td>282</td>
<td>515</td>
<td>332</td>
<td>202</td>
<td>125</td>
<td>1,456</td>
</tr>
<tr>
<td>Limavady</td>
<td>35</td>
<td>86</td>
<td>14</td>
<td>-49</td>
<td>-43</td>
<td>43</td>
</tr>
<tr>
<td>Magherafelt</td>
<td>191</td>
<td>345</td>
<td>284</td>
<td>169</td>
<td>5</td>
<td>994</td>
</tr>
<tr>
<td>Omagh</td>
<td>287</td>
<td>324</td>
<td>454</td>
<td>266</td>
<td>114</td>
<td>1,445</td>
</tr>
<tr>
<td>Strabane</td>
<td>-99</td>
<td>-17</td>
<td>-2</td>
<td>74</td>
<td>-35</td>
<td>-79</td>
</tr>
<tr>
<td><strong>Northern Ireland</strong></td>
<td><strong>4,671</strong></td>
<td><strong>9,023</strong></td>
<td><strong>8,037</strong></td>
<td><strong>4,311</strong></td>
<td><strong>1,461</strong></td>
<td><strong>27,503</strong></td>
</tr>
</tbody>
</table>

4.3.12 Like the Republic of Ireland, Northern Ireland has largely benefited from net in-migration. The areas that have grown quickest (Dungannon, Cookstown and Magherafelt) have also witnessed significant in-migration. Conversely, the north-west area has witnessed limited net in-migration and, in the case of Derry / Londonderry and Strabane, there has been net out-migration. There has been an almost universal slowdown of in-migration since the onset of the global recession. This suggests that Northern Ireland has become less attractive for foreign immigrants in this period of economic weakness, although growth has continued to be positive in most areas.

**Age Profile**

**Key Point:** The Border Area has a relatively favourable demographic mix, but the ability to retain the young and highly skilled is a challenge and key risk for the futures.

4.3.13 The age profile of an area is also essential to its economic performance. The key demographic is the proportion of working age residents, as this largely defines the potential productive capacity of an area – ie its production possibility frontier. Children under the age of 16 and the elderly (over 65) are generally classed as dependants – ie they have to be supported by those of working age population. This is generally expressed as a ‘dependency ratio’, which defines the number of dependents relative to the number of working age people. A high dependency ratio is generally associated with weaker productivity.

4.3.14 It is important to note that large numbers of children and elderly people are not a bad thing. On the contrary, children are the workforce of the future, while many elderly people are well to do and invest in the local economy. The dependency ratio simply defines the productive capacity of an area.

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4.3.15 Figure 4.1 shows the level of elderly dependency in the ICBAN and NWRCBG areas. Note: there is a slight data inconsistency here – the Republic of Ireland counts elderly dependents as over 65, whereas in Northern Ireland, the measure is women over the age of 60 and men over the age of 65. This inconsistency is unlikely to significantly impact on the analysis.

**Figure 4.1  Level of Elderly Dependency**

4.3.16 It can be seen from Figure 4.1 that the Border Areas of the Republic of Ireland do tend to have a lower level of elderly dependency compared to the national average, and significantly lower than all of the Northern Ireland District Council areas.

4.3.17 In Northern Ireland, the elderly dependency tends to be higher on average than in the Republic. The Northern Ireland Border districts generally have a lower level of dependency than the national average, except in Armagh and Fermanagh, which have higher levels of dependency.

4.3.18 Figure 4.2 shows the equivalent figures for levels of youth dependency.
4.3.19 The level of youth dependency in the Border Areas of both the Republic of Ireland and Northern Ireland are higher than the national average. Coincidentally, Armagh, which has one of the highest levels of elderly dependency also has one of the highest levels of youth dependency (and hence the lowest proportion of working age population).

4.3.20 In all, the Border Areas have a relatively favourable demographic mix, with a comparably higher proportion of working age people than the respective national averages. In particular, the high proportion of youth dependents could be a significant advantage in forthcoming years, as this age group progresses into the workforce. The key risk is that young people migrate out of the Border Areas for reasons of education or work and do not return. Forfas explain that this is currently the case in the Border Counties of the Republic of Ireland.

4.4 Macroeconomic Performance

**Key Point: GVA per capita and incomes are generally lower than the national averages in the Border Area**

4.4.1 This section considers the economic performance of the Border Area in terms of Gross Value Added (GVA). GVA is a measure of the total value of goods and services produced in an area and is generally used as the headline indicator of economic performance. However, GVA is an imperfect metric for a number of reasons, particularly because transfer pricing by multi-national corporations can exaggerate the value of activity taking place at a given location.\textsuperscript{26} Nonetheless, GVA is still the most appropriate output indicator available for this analysis.

\textsuperscript{26} Forfas, p. 20.
4.4.2 It is important to note that the process of collating GVA data takes time. The data available for the Republic of Ireland date from 2006, while the equivalent data for Northern Ireland date from 2008. These datasets will therefore not fully capture the impact of the global recession, which has had a particularly severe impact on the Republic of Ireland. Table 4.4 provides various statistics on GVA in the Republic of Ireland in 2006.

### Table 4.4 GVA per Capita by Region at Current Basic Prices, 2006\(^{27}\)

<table>
<thead>
<tr>
<th>Region</th>
<th>GVA per Person at Basic Prices (Euro)</th>
<th>Region as a % of State GVA per person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Border (including Louth)</td>
<td>€26,545</td>
<td>73%</td>
</tr>
<tr>
<td>Midland</td>
<td>€24,527</td>
<td>67%</td>
</tr>
<tr>
<td>West</td>
<td>€27,451</td>
<td>75%</td>
</tr>
<tr>
<td>Dublin</td>
<td>€51,588</td>
<td>141%</td>
</tr>
<tr>
<td>Mid-East</td>
<td>€28,366</td>
<td>78%</td>
</tr>
<tr>
<td>Mid-West</td>
<td>€31,855</td>
<td>87%</td>
</tr>
<tr>
<td>South-East</td>
<td>€26,745</td>
<td>73%</td>
</tr>
<tr>
<td>South-West</td>
<td>€42,952</td>
<td>117%</td>
</tr>
<tr>
<td><strong>Republic of Ireland</strong></td>
<td><strong>€36,608</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

4.4.3 Table 4.4 clearly demonstrates that the Border Area has a relatively low per capita income – the joint second lowest of the Irish Regions. Indeed, it can be argued that if Louth was removed from the figures, the Border would have the outright second lowest per capita income of the Irish regions.

4.4.4 The 2009 County Incomes and Regional GVA figures suggest that Donegal has an average household disposable income of less than 90% of the Irish average. The position is slightly better in Cavan, Sligo and Monaghan, which have between 90%-95% of the average Irish disposable income. Of all the Border Counties, Sligo is closest to convergence with the national average, with disposable income in the region 95%-100% of the national average.\(^{28}\)

4.4.5 In the interests of consistency, we have presented equivalent data (in £ Sterling) for Northern Ireland in 2006:

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\(^{27}\) Forfas p.20  
\(^{28}\) CSO, County Incomes and Regional GDP 2008, p. 3.
Table 4.5  GVA Per Capita by Region at Current Basic Prices, 2006

<table>
<thead>
<tr>
<th>Region</th>
<th>GVA per Person at Basic Prices (£)</th>
<th>Region as a % of State GVA per person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belfast</td>
<td>£28,688</td>
<td>188%</td>
</tr>
<tr>
<td>Outer Belfast</td>
<td>£12,133</td>
<td>79%</td>
</tr>
<tr>
<td>East of Northern Ireland</td>
<td>£14,114</td>
<td>92%</td>
</tr>
<tr>
<td>North of Northern Ireland</td>
<td>£11,841</td>
<td>77%</td>
</tr>
<tr>
<td>West and South of Northern Ireland</td>
<td>£12,911</td>
<td>84%</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>£15,281</td>
<td>100%</td>
</tr>
</tbody>
</table>

4.4.6 The importance of Belfast in the Northern Ireland economy is clear from Table 4.5. The city produces £28k of GVA per capita, which compares to £14k in the next most prosperous region (East of Northern Ireland). The Border regions (North of Northern Ireland and West and South of Northern Ireland) have relatively low levels of GVA per capita, with the North Region displaying the lowest levels. Belfast’s role as the engine of Northern Ireland growth suggests that improving links to the city could stimulate growth in the more outlying areas.

4.4.7 Figure 4.3 shows the long-term trend in GVA per capita for Northern Ireland and its regions.

Figure 4.3  Northern Ireland GVA at Current Basic Prices, 1995-2008


4.4.8 The figure demonstrates that there has been a long-term trend growth in Northern Ireland GVA across all regions. Belfast has dominated this growth but all of the other regions have delivered steady growth.

4.4.9 We have not attempted to compare the North and the Republic because GVA per capita is not an appropriate measure on which to do so, largely due to the differences in purchasing power between each nation’s currencies. In 2006, the purchasing power of a Northern Ireland resident in the Republic of Ireland would have been significantly greater than at present because Sterling has devalued significantly against the Euro. The reverse is also true. We do not currently hold any Purchasing Power Parity (PPP) data with which to make this comparison.

4.4.10 In summary, the key point is that the Border Areas of both the Republic or Ireland and Northern Ireland tend to lag behind the national averages, potentially as a result of their perceived or actual peripherality.

4.5 Labour Market Performance

Key Point: the area has suffered disproportionately during the economic downturn.

4.5.1 There are two key drivers of GVA, productivity and participation. This section focuses on participation or, put another way, the performance of the labour market. As with other areas of this analysis, there are differences in the means of recording various metrics between the Republic or Ireland and Northern Ireland. Nonetheless, we judge that this will not have an overly significant bearing on the key findings.

Employment

4.5.2 The recent economic difficulties of the Republic of Ireland have been well documented. The sudden collapse of the Irish economy has brought with it the expected consequence of job losses as the labour market adjusts to the markedly lower level of aggregate demand. Figure 4.4 shows the quarterly change in employment levels in both the Republic of Ireland and the Irish Border Counties (including Louth).
4.5.3 The figure very clearly illustrates the decline in the Irish economy in Q4 of 2008. While the national decline was just over 4%, the Border counties were hit particularly hard, with a 7% decline in one year. Despite a brief spike of recovery in 2009 Q3, there has been a definite downward trend in employment. Indeed, between 2007 Q2 and 2011 Q1, the Republic of Ireland witnessed a 13.6% reduction in total employment, a trend exceeded in the Border Counties, which lost 15.6% of its employed workforce. This problem is only likely to worsen with the Irish Government committing to a €4 billion reduction in public spending.32

4.5.4 Forfás explain that there has been a significant decline in manufacturing employment in the Border Region, driven mainly by the collapse of the clothing and textile industry. There has also been a significant dependence on locally traded and non-traded activities for growth in employment and output (eg construction, retail, the public sector etc.).

4.5.5 Time series unemployment data at the District Council level in Northern Ireland were not readily available. However, the figure below presents the rate of claimant unemployment in the Border District Councils compared with the national average:

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31 http://www.cso.ie/px/pixeirestat/Statire/SelectVarVal/saveselections.asp
32 http://www.bbc.co.uk/news/10162176
4.5.6 The Figure shows that the majority of Border Area District Councils have rates of unemployment broadly similar with the national average. There are however three notable exceptions to this:

- Derry / Londonderry, which has a rate of claimant unemployment over 8%;
- Strabane, which has a rate of just over 7%; and
- Limavady, which has a rate of just under 7%.

4.5.7 Interestingly, these three areas are concentrated in the north-west of Northern Ireland. While there are underlying structural unemployment issues in this area, one could argue that poor transport connectivity could be playing a role in the economic and population difficulties being faced by the north-west.

4.6 Sectoral Breakdown

Key Point: the area contains a lower share of high value key sector economic activity, with Northern Ireland in particular having a high proportion of public sector employment.

4.6.1 The distribution of jobs by sector is also a key element in economic success – it is an important determinant of economic productivity. Concentrations in high value and high paid sectors like financial services support GVA growth, while jobs concentrated in lower value industries, often characterised by part-time work, contribute less to economic growth.

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4.6.2 Table 4.6 shows the sectoral breakdown of the economy in the Border Regions of the Republic of Ireland (including Louth) and at the national level.

<table>
<thead>
<tr>
<th>Sector</th>
<th>% of Total Employment – Border</th>
<th>% of Total Employment – Republic of Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Forestry and Fishing</td>
<td>7%</td>
<td>6%</td>
</tr>
<tr>
<td>Other Production Industries</td>
<td>14%</td>
<td>14%</td>
</tr>
<tr>
<td>Construction</td>
<td>13%</td>
<td>11%</td>
</tr>
<tr>
<td>Wholesale and Retail Trade</td>
<td>15%</td>
<td>14%</td>
</tr>
<tr>
<td>Hotels and Restaurants</td>
<td>7%</td>
<td>6%</td>
</tr>
<tr>
<td>Transport, Storage and Communication</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>Financial and Other Business Services</td>
<td>10%</td>
<td>14%</td>
</tr>
<tr>
<td>Public Sector (includes Administration, Education and Health)</td>
<td>22%</td>
<td>23%</td>
</tr>
<tr>
<td>Other Services</td>
<td>6%</td>
<td>6%</td>
</tr>
</tbody>
</table>

4.6.3 It should be noted that the information in Table 4.6 relates to Q4 in 2008 and appears to be the most up-to-date data available. This could give rise to issues of data quality – the Irish economy went into recession in Q3 of 2008 and experienced a sharp decline thereafter. The labour market generally takes some time to adjust to changed economic circumstances, and the main employment impacts in this respect were not felt until 2009 Q1 (there was a 4.3% decline in employment between 2008 Q4 and 2009 Q1). As a result, there is a risk that the respective proportions of sectoral employment could have changed considerably since these data were released – for example, the proportion of employment in financial services may have declined since 2008 Q4.

4.6.4 It is worth noting from Table 4.6 that the sectoral structure of the Border economy is similar in nature to the national average. In terms of absolute employment levels, the largest employer in the Border Counties is the public sector, which accounts for 22% of all employment, compared to 23% nationally. This is followed by the wholesale and retail trade (14%), other production industries (14%) and construction (11%).

4.6.5 Forfás explain that the Border region reflects the trends that have been exhibited across the country in terms of the main sources of employment growth and the shifting importance of certain sectors in the overall employment mix within the region; for example, the declining role of manufacturing, the increasing scale of construction and the emergence of internationally traded services. In recent years, the region has experienced higher than average employment growth in Wholesale and Retail activity, which is a sector facing particular challenges in the current economic climate. The region also accounts for around

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34 Forfas, pp. 11-12.
35 Forfas, pp. 11-12.
one-fifth of total employment in the Irish seafood industry, which has seen considerable decline in recent years and remains vulnerable.36

4.6.6 While there are sectoral challenges in the Border region, it also contains many strong Irish-grown firms (particularly in food processing and engineering / construction related activities), while there is also considerable scope for growth in tourism.37 Building on this, Forfás note that future economic growth in the region will rely heavily (although not exclusively) on the performance of the indigenous sector, with enhanced competitiveness, innovation, productivity and renewal being key elements.38

4.6.7 In terms of business size, the Irish Business and Employers Confederation (IBEC) explained that there are a few large FDI firms in Sligo and Letterkenny. However, employment in the Border Area tends to be concentrated in the SME sector, with a high density of manufacturing firms employing between 50-200 people.

4.6.8 The figure below presents the sectoral breakdown of employment in Northern Ireland Local Council Areas in 2007. The same caveat applies in terms of the age of the data, although the evidence suggests that the Northern Ireland economy has not suffered as severely as that of southern Ireland.

![Figure 4.6 Industrial Structure 2007 – Northern Ireland and Border Local Council Areas](image-url)

**Figure 4.6 Industrial Structure 2007 – Northern Ireland and Border Local Council Areas**39

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37 Forfás Regional Competitiveness Agenda: Realising Potential: Border, p. 6.
38 Forfás Regional Competitiveness Agenda: Realising Potential: Border, p. 8.
The sectoral breakdown of employment in Northern Ireland is typical of a largely post-industrial society, with the service sector dominating the economy. A large proportion of this employment is actually in the public sector, which has dominated the Northern Ireland economy in recent years. This trend is particularly prominent in more urban administrative areas like Londonderry/Derry and Armagh. The area immediately to the west of Lough Neagh (Cookstown, Dungannon and Magherafelt) has a higher than average proportion of manufacturing activity, which tends to be more transport intensive than the service industry.

Northern Ireland has a relatively low concentration of employers clustered in “Transport, Storage and Communication”, which only accounts for more than 5% of total employee jobs in Armagh and Fermanagh. However, this industrial group does tend to have a relatively low concentration of employees per square metre of floor space, so it may still have significant transport requirements.

4.7 Realising Future Potential – Sectoral Opportunities

This section considers the future sectoral opportunities identified for the Border Area and considers the role of transport in supporting each. Forfás identifies five key growth areas:

- Internationally Traded Services (including Financial Services);
- Life Sciences;
- Agri-Food;
- Clean Technology – Renewable Energy and Environmental Services; and
- Tourism.40

Internationally Traded Services

Internationally traded services (ITS) includes high value market areas such as finance; insurance; computer-related activities; R&D; advertising; marketing; accounting; and consultancy. Forfás explain that employment in internationally traded services in the Border Area accounts for 22% of total agency supported employment, which represents an 18% growth since 1998.41

Around 60% of the ITS employment is in Irish owned companies, with just under of half these employed in a small number of financial services companies. Overseas companies in the region are primarily involved in ICT Related services (including Bank of America (MBNA), Pramerica, and Pacificare / United Health) and to a lesser extent financial services (with companies such as IFS, Halifax and Daiwa). The north-west is more heavily dominated by ICT firms and the area has generally proven to be attractive for ‘back office’ activities such as customer support and claims processing as well as software development.42

Forfás notes that there must be a focus on accelerating the development of gateways and key urban centres in the region if this sector is to build on the firm basis it has established over the past 15 years – improved connectivity is central to this.

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40 Forfás Regional Competitiveness Agenda: Realising Potential: Border, p. 10.
41 Forfás Regional Competitiveness Agenda: Realising Potential: Border, p. 11.
42 Forfás Regional Competitiveness Agenda: Realising Potential: Border, p. 11.
4 Economic Profile of the Border Area

Life Sciences

4.7.5 The Life Sciences sector has and will continue to be of critical importance to Ireland’s economic growth and development. At present, the Border Area has a relatively small base of companies within the Life Sciences sector employing just under 3,000 people. The sector is dominated by multi-national overseas investment particularly in medical technologies, manufacturing and includes companies such as Abbott, Hospira, Zeus, Amcor and Becton Dickenson, and in pharmaceuticals with Fort Dodge Laboratories and Stiefel Laboratories (part of GlaxoSmithKlein).  

4.7.6 While transport is not directly important for moving goods and services within this sector, there is a need to ensure good physical and virtual accessibility between research facilities and hubs if the Border Area is to achieve the required critical mass of firms.

Food Sector

4.7.7 The food industry is Ireland’s leading indigenous sector, employing 155,000 people and accounting for over half of the country’s indigenous exports. While the primary sector has faced a number of challenging years, it is anticipated that the growth of agri-food and premium products will assist in its future growth, and the Border Area is well placed to take advantage of this. The north-west also has a comparatively large fishing and aquaculture industry.

4.7.8 A key feature of both agriculture and aquaculture is the need to move produce quickly to key markets, many of which will be in Europe. High quality transport infrastructure is therefore essential in ensuring that the Border Area can compete with the rest of Ireland and other areas of Europe. Evidence gathered by MVA in Scotland suggests that a one day delay in the shipment of fresh fish reduces its value by more than half. While the delays caused by the road infrastructure in the Border Area would not be of that extent, the example does demonstrate why good connectivity is important.

Clean Technology – Renewable Energy and Environmental Services

4.7.9 Renewable energy has offered economic hope for many of the most peripheral areas of Europe and the Border Area is no different. The Border Area has favourable conditions for the production of both wind power and biomass. While the key improvement needed in the area is an enhancement of the electricity grid, good transport links are required for moving biomass products in particular.

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44 Forfás Regional Competitiveness Agenda: Realising Potential: Border, p. 16-18.  
Tourism

4.7.10 Tourism is an established and important enterprise sector in the Border region. Initiatives that promote tourism enterprise often have the added benefit of improving the quality of life of a region’s residents, making it more attractive to skilled labour and investment. Employment in the tourism or related sectors in 2007 was around 28,000 across the Border Area (excluding Louth). While tourism is generally a low value activity, it is an important employment creator.46

4.7.11 While the Border Area has strong tourism potential the product is currently underdeveloped. While the ‘Troubles’ have historically been part of the reason for this, Forfás note that poor transport connectivity is now the principal reason for lack of growth. The connectivity issue has become more pronounced in recent years as the tourism market has trended towards short and weekend breaks.47 Improved inter-urban and intra-Border Area transport (both road and public transport) is seen as key to rectifying this issue.

4.8 What can transport do for the Border Area?

4.8.1 The above sections provide an overview of the socio-economic characteristics of the Irish Border Area. It is essential to have an understanding of the area’s characteristics to tackle the key issue that this report seeks to identify – ie what can improved (inter-regional) transport do to support the economic development of the Border Area.

4.8.2 It is important to note from the outset that transport improvements cannot in themselves be seen as a panacea for the issues faced. Additional transport provision and investment in transport infrastructure must be accompanied by a package of other interventions such as enterprise zone status, investment in business properties, broadband capabilities, labour force skills, and promotion / marketing. This argument is borne out in the evidence on the relationship between transport and the economy presented in the wider study.

4.8.3 Nonetheless, transport improvements could prove to be of significant value to the Border Area in terms of attracting and retaining both businesses and people. In short, transport improvements can:

- improve business confidence in the future of the Border Area;
- encourage the skilled pool of workers currently resident remain;
- facilitate and support the regeneration of the local and national economy, helping it recover from the current downturn;
- assist in the development of indigenous industries;
- create a better environment for business investment, lessening the dependence on the shrinking public sector;
- assist in maintaining the social and economic fabric of the Border Area; and
- reduce the perception of peripherality, particularly amongst tourists and businesses.

46 Forfás Regional Competitiveness Agenda: Realising Potential: Border, p. 21.
4.8.4 In short, improved transport infrastructure in the Border area will prevent the development of a potential “three speed economy”, where the Border area lags the city-regions of Belfast and Dublin as well as the towns and cities connected by high quality motorways and dual carriageways.
5 Stakeholder Consultation

5.1 Overview

5.1.1 Effective stakeholder consultation was essential in ensuring the development of a robust evidence base to support the conclusions set out in this study. In addition, it was essential in ensuring that the study process was transparent, providing a clear audit trail from the identification of problems and issues through to option development and appraisal.

5.1.2 There were two distinct strands to the consultation:

- issue of a stakeholder questionnaire designed to identify key themes; and
- stakeholder workshops.

In addition, individual follow-up meetings and telephone calls were held with stakeholders who could either not attend the consultation events or who wished to provide additional inputs.

5.2 Stakeholder Workshops – Key Themes

Dates, Invitees and Attendees

5.2.1 Workshops were held in Enniskillen on Wednesday 1 May 2012 and in Letterkenny on Thursday 2 May 2012. A list of invitees is included in Appendix A.

5.2.2 The Enniskillen workshop was attended by:

- Armagh District Council;
- Cavan County Council;
- Department of Environment Planning Service NI;
- Donegal County Council;
- Fermanagh District Council;
- Leitrim County Council;
- Monaghan County Council;
- Omagh District Council;
- South-West College; and
- Translink.

5.2.3 The Letterkenny workshop was attended by:

- Department for Regional Development Regional Planning & Transportation Division NI;
- Donegal County Council; and
- Letterkenny Chamber of Commerce.
5.2.4 The Irish Business and Employers Confederation (IBEC) participated in a telephone consultation.

**Overview**

5.2.5 The stakeholder workshops were wide ranging, identifying a number of key themes relevant to the study. This section provides a thematic overview of emerging issues.

5.2.6 There was a general view that policymakers in Belfast and Dublin must overcome the established approach of ‘predict and provide’ with regards transport provision. Many stakeholders believe that, while traffic flows in the Border Area are low, the wider socio-economic needs of the region must be addressed by government. Indeed, Donegal County Council explained that socio-economic grounds were used to justify other roads in the Republic of Ireland, a number of which have been upgraded more than once. There was broad agreement that there should be a ‘minimum standard of provision’ across all types of transport infrastructure.

5.2.7 Stakeholders also emphasised the need to deliver an upgrade in infrastructure appropriate to the designation of ‘Gateways’ (eg Sligo, Letterkenny and Enniskillen) and ‘Key Transport Corridors’ or ‘Strategic Corridors’ referenced in the spatial planning documents. In addition, a number of stakeholders noted that Derry / Londonderry is the fourth largest city in Ireland, yet it is often overlooked in infrastructure investment terms.

**Sustaining Local Communities**

5.2.8 The Department of the Environment NI noted that improved roads infrastructure is needed to support the long-term sustainability of existing local firms. This is a particularly pertinent point in the Border Area, where there is a high concentration of heavy and bulk industries that are in turn reliant on the haulage industry. This is a key issue both with regards to export and inter-trade with other areas of Ireland.

5.2.9 An Omagh Councillor noted that new infrastructure is vital to the future of Omagh. The town is looking to achieve city status by 2020 but the poor infrastructure in the area at present would be expected to have a negative impact on this goal.

5.2.10 Fermanagh District Council noted that the Border Area is solely reliant on roads and poor infrastructure is a deterrent to new businesses entering the area. They explained that most local businesses are run by people who come from the area or who have a historical connection to it – therefore sustaining this business base is essential.

5.2.11 Poor accessibility also has an impact on actual and perceived peripherality. For example, an analysis of services in the hospitals in Sligo and Letterkenny has shown that each has more departments and specialist services than the national average. This is precisely because they are peripheral and must be more self-contained than in other areas. Such an effect comes with a cost to the public purse. There was therefore a general view that synergies between towns within the Border Area should be encouraged, but that government had to put the road infrastructure in place to improve journey times between towns. This theme of mutual trade between Border towns was supported by the Department for Regional Development (DRD).
5.2.12 An important caveat in improving the quality of roads infrastructure is that town centre vitality must be protected. Too much traffic will make a town centre unattractive but bypasses and other such schemes may take custom away from local business. This is a delicate balance to strike but it is essential that decision-makers get it right. An example of innovative practice is the A9 Trunk Road between Perth and Inverness in Scotland. This 110 mile road was constructed in the 1970s and a specific requirement of planning consent was that there should be no roadside services, meaning that motorists still had to go into the now bypassed towns for fuel and other amenities.

5.2.13 Despite the benefits of new infrastructure, two Councillors did note that new roads can cause disruption, severance of communities, local job losses and increased carbon emission. These are important issues for decision makers to consider – effective mitigation measures must be put in place.

**Attracting and Retaining Foreign Direct Investment**

5.2.14 High value and high technology Foreign Direct Investment (FDI) was important to the economic transformation of Ireland, particularly in the south. Given the proven track record of the island in this respect, attracting and retaining FDI is an important element of future economic sustainability.

5.2.15 Donegal County Council noted that successive rounds of transport investment have created good quality links and now motorways between Dublin and other major cities in Ireland, namely Cork, Limerick, Waterford and Galway. While each investment benefits Ireland as a whole, the lack of investment in the Border Area has led to increasing peripherality, making it difficult to attract FDI.

5.2.16 High technology industries require good quality transport links. Letterkenny Chamber of Commerce (LCC) made this point when they noted that north-west Ireland has all of the necessary infrastructure for FDI (good quality broadband for example), except high quality strategic roads. IBEC concurred with this point, explaining that poor transport links may impact on the competitiveness of the Border Area.

5.2.17 LCC explained that amongst their portfolio of members are five large inward investment businesses, with the two largest companies employing 1,200 people between them. As well as employing local people, there are spin-off benefits for local firms who contribute to the local supply chain. LCC noted that their members as a whole have had difficulties attracting and retaining the required quality of people for senior positions. There is evidence that the peripherality of Letterkenny is viewed as a negative by senior executives who take account of readily accessible employment, education and recreation opportunities for all members of their families.

5.2.18 LCC also pointed out evidence of the peripherality of the Border Area. Large firms bringing senior executives to Ireland are often using helicopters to transport them from the airport, largely because it is too time consuming to travel by road or because the quality of the road infrastructure is seen as ‘sub-standard’. It is also difficult for executives to get to Letterkenny in an ‘emergency’. Connectivity within the Border Area is also seen to be poor.

5.2.19 IBEC noted that large and high value firms in the Border Area are currently performing well, but explained that a number of the local domestic firms, particularly in the tourism sector, are struggling at present. However, the February 2012 Quarterly Business Survey, should
an improvement in confidence in the business environment, but this was still negative overall. Transport infrastructure issues do have an impact on both the food and aggregates industry, as they tend to have a low value to weight ratio.

5.2.20 Omagh District Council also explained that advanced zoning of land in development plans is important for attracting FDI. However, it is difficult to commit zonings for industrial development while there remains significant uncertainty over future transport infrastructure and hence accessibility.

**Investment Prioritisation**

5.2.21 Leitrim County Council re-emphasised the point that the Border Area ranks relatively lowly in the prioritisation of investment within the National Roads hierarchy. Leitrim and other Councils do however invest in their own County roads, the Regional and Local designated routes, making improvements across many corridors. This may lead to a somewhat perverse situation where a Regional road can be of a higher standard than a ‘competing’ National road.

5.2.22 An important consequence of this disparate approach to road infrastructure provision is that there is no single high quality road from the north-west to the east coast. Traffic is dispersed across a number of routes reducing traffic volumes on the National and Trunk route, in particular the N16 / A4 route. The outturn impact is that many roads are not used for the purpose for which they were initially designed. For example, National / Trunk roads carry local access traffic, slow vehicles, agricultural traffic etc, while Regional / non-trunk roads carry a disproportionate volume of strategic through traffic. Various stakeholders pointed out that this unclear roads hierarchy must be resolved.

5.2.23 Evidence of this point was provided by Donegal County Council who explained that Larne is the port of choice for most exporting businesses in the north-west yet it is time consuming to get to along the N16/A4.

**Safety**

5.2.24 A number of stakeholders raised concerns about road safety on existing routes within the Border Area, most notably the N16. In particular, HGVs have difficulties with twisty and narrow alignment and occasional steep gradients on the route. Leitrim County Council noted that two timber trucks have overturned within the County in recent years.

5.2.25 ‘Platooning’ (columns of slow traffic building behind slow vehicles) are also seen as a key risk to road safety. This is a particular issue on the N16 west of Enniskillen where the road alignment and overtaking sightlines are poor, which compounds the issue of slow speeds and consequent driver frustration.

5.2.26 Wide two lane roads in the Border Area also give rise to safety problems. Whilst they provide some overtaking sightlines and opportunities, as traffic increases, the risks involved with overtaking increase due to their ‘uncontrolled’ design (in contrast to modern dual carriageway designs with a central reservation). In particular, the risk of two overtaking vehicles meeting head-on should be taken particularly seriously. This is a particular concern on the N13 Letterkenny – Derry / Londonderry.
Urban Congestion

5.2.27 While few roads in the Border Area demonstrate issues of daily congestion, its tourist appeal can lead to seasonal and slow weekend traffic. For example, Omagh and Enniskillen can suffer from heavy traffic congestion on Fridays and Mondays. A number of stakeholders, including Fermanagh District Council, explained that this is impacting on the appeal of north-west Ireland for short-breaks. The tourist market is highly competitive and the cheap and easy access to continental Europe is proving to be a challenge for Ireland.

5.2.28 This point was confirmed by an Omagh Councillor who explained that joining the A5 from side roads on a Friday or Monday can be extremely problematic and unsafe. In addition, the A5 passes through a number of farming areas – while this sector is a staple of the local economy, agricultural traffic can further slow down strategic traffic and lead to driver frustration.

5.2.29 Donegal County Council explained that ten hauliers from the area use the A5 and find that congestion impacts on their journey time viability and increases overall costs.

5.2.30 Traffic congestion in Derry / Londonderry was also seen to be an occasional issue. One suggested solution was the provision of a new link from the N13 to the proposed new A5 junction at New Buildings, thus providing a southern bypass of the city. Our analysis was not focused at this level but this option is one that could be considered going forward.

5.2.31 Journey time reliability is often seen to be the single most important issue in justifying investment in road infrastructure. Fermanagh District Council note that journey times through Enniskillen can range from 10 minutes to over one hour. This has negative consequences for hauliers and businesses operating ‘just-in-time’ stock systems, as they have to build extra slack into their timetables (at a cost) for undertaking day-to-day activities.

Freight Distribution

5.2.32 Leitrim County Council explained that there is a strategy in place to divert the movement of goods through Dublin port to the northern ports of Dundalk and Belfast. At present, approximately two thirds of the Republic of Ireland’s port traffic goes through Dublin. While this may be the preferred destination for many exporting firms, the port and roads around it are becoming congested. Leitrim County Council note that the current road network elsewhere (especially since completion of the Major Inter Urban Motorways) incentivises traffic to travel to Dublin and noted that improved infrastructure in the north is required to encourage re-routing.
5.3 Questionnaire Findings

Overview

5.3.1 As part of the consultation exercise, a structured questionnaire was issued to all of those invited to the consultation workshops. A copy of this questionnaire can be found in Appendix B.

5.3.2 Ten questionnaires were received by way of return. Of these, four were received from local authorities, namely Cavan County Council; Fermanagh District Council; Leitrim County Council; and Sligo County Council. The remaining respondents were Glenfarne Development; South West College; Translink; Letterkenny Chamber of Commerce; and Forfás.

5.3.3 All of the councils responding to the consultation were concerned with the N16 Sligo-Border route, with all except Fermanagh District Council noting this as the only route in which they had an interest. Fermanagh District Council selected this route in combination with the A4 Border-Ballygawley. Glenfarne Development demonstrated similar concerns, noting an interest in both the N16 Sligo–Border route and the A4 Border-Ballygawley route.

5.3.4 The remaining respondents demonstrated a wider set of concerns with all stating an interest in three or more routes. South West College noted an interest with all except the A4 Border – Ballygawley route; Letterkenny Chamber of Commerce was concerned with all except the N16 / A4 corridors; and Translink expressed an interest in the A5 Derry-Aughnacloy, the N2 Monaghan–Aughnacloy, and the A4 Border – Ballygawley route. Forfás, owing to its national perspective, stated that all five routes were important. They noted specifically that the N2, N14, and, N16 had been highlighted by them in a 2001 submission to the Department of Public Expenditure as short to medium priorities for Enterprise. However, whilst they recognised the importance of all the routes, they did not consider them to be ‘immediate’ priorities in the current context of constrained resources.

N16 Sligo – Border

5.3.5 Safety was the primary concern of respondents with regards to the N16 Sligo – Border route, with travel time being the second most important issue. Glenfarne Development noted that there were a high number of lorry accidents on the route and delays during peak commuting hours with a resultant negative impact in terms of attracting industry and tourism to the area.

5.3.6 All of those responding felt that the route should be improved through selective upgrades. Cavan County Council stated that the unimproved sections should be upgraded to 100 kph single carriageway design with appropriate bypasses of population centres provided. Fermanagh District Council felt that the most important first phase on the route was the Enniskillen Southern Bypass and Glenfarne Development felt that removing the worst bends and providing a bypass around the town of Manorhamilton should be the priority.

5.3.7 Respondents felt that improvements to the route would bring varied benefits including greater Foreign Direct Investment (FDI), tourism and a growth in local businesses. Sligo County Council also noted that it would assist in addressing social development issues in the area. Fermanagh District Council noted that a modern, safe A4/N16 route with a southern bypass around Enniskillen was key to the town achieving its ‘Regional Hub’ status.
5.3.8 Glenfarne Development, Cavan County Council, and South West College stated that business development activities should also be undertaken to complement road improvements. Only South West College foresaw there being risks associated with improving the route, noting that there may be greater competition from business outside the region as a result.

**A4 Border – Ballygawley**

5.3.9 Travel time and safety were both identified as key problems on this route. Glenfarne Development felt that selective upgrades to the route and traffic management in the town centres were required and that such improvements would allow local businesses to grow. In order to assist the economy, they noted that business development activities, improvements in public transport, and third sector education should also be undertaken.

5.3.10 Translink felt that high grade dual carriageway and hill section climbing lanes, along with priority for buses should be provided. They felt these improvements would encourage tourists to travel further into the region and noted outward commuting as a potential risk.

**A5 Derry / Londonderry -Aughnacloy:**

5.3.11 Travel time and safety were both identified as key issues on this route at present. It was felt that full dualling of the route would encourage tourists to travel further into the region, allow local businesses to grow through efficiencies and attract new foreign direct investment.

5.3.12 All respondents felt that the public transport improvements should be implemented alongside road improvements with Translink particularly emphasising improvements to Park and Ride facilities. South West College and Letterkenny Chamber of Commerce also noted that improvements in third-level education or health should be undertaken with the latter organisation further noting the importance of ensuring elements of infrastructure such as telecoms, water, broadband, and electricity were of the highest standard.

**N2 Aughnacloy - Dublin:**

5.3.13 Travel time and safety were noted as problems on this route by all those who expressed an interest. All respondents felt that a high grade dual carriageway should be provided on this route. Both Translink and South West College also wanted to see traffic management in the town centres, with the former specifically noting bus priority improvements.

5.3.14 All respondents felt that improvements would encourage tourism, with Letterkenny Chamber of Commerce and South West College also stating that it would attract foreign direct investment and allow local business to grow through efficiencies.

5.3.15 There was a desire amongst respondents that public transport improvements should also be undertaken, with Translink particularly emphasising new Park and Ride sites.

**N14 – Lifford-Letterkenny:**

5.3.16 South-West College was concerned only with safety, Forfás was concerned with travel times, and Letterkenny Chamber of Commerce was concerned with both travel times and safety.

5.3.17 South-West College wanted to see selective upgrades to the route and felt that this would attract new foreign direct investment and encourage tourism. In contrast, Letterkenny
Chamber of Commerce felt that a high grade dual carriageway was the only safe alternative on this route and noted that this would link in with the dualling of the A5. They felt improvements would attract FDI, allow local business to grow and encourage tourism, particularly for Donegal.

5.3.18 Both South West College and Letterkenny wanted to see Business Development opportunities undertaken to complement road improvements. South West College and Forfás felt that improvements to public transport, third level education or health, and business development opportunities should also be undertaken where as South West College noted only the latter.
6 Analysis of Problems, Issues, Opportunities and Constraints

6.1 Overview

6.1.1 In order to assess and develop a case for new transport infrastructure in the Border Area, it is important to clearly identify the current problems, issues, opportunities and constraints in the area. Undertaking this task provides a context in which to generate and appraise options for new transport schemes that will help address the problems and realise the opportunities within the Border Area.

6.2 Problems

6.2.1 This section sets out the transport related problems within the Border Area, as identified through our research and detailed consultation with stakeholders.

Accessibility and Peripherality

6.2.2 The fundamental issue raised by stakeholders is that of peripherality caused directly through poor transport accessibility. Key Border towns such as Sligo and Derry / Londonderry are no more remote from the major centres of Belfast and Dublin than other Irish towns like Galway, Cork and Limerick.

6.2.3 However, journey times from these Border towns / cities are longer and average speeds slower – in effect, they are 'further away'. This point is illustrated in Table 6.1 below, which compares distance, travel time and average speeds between a selection of Border Area towns (highlighted in yellow) and other key towns across Ireland.
6 Analysis of Problems, Issues, Opportunities and Constraints

Table 6.1  Distance, Travel Time and Average Speed from Selected Towns / Cities to Dublin and Belfast

<table>
<thead>
<tr>
<th></th>
<th>Distance (KM)</th>
<th>Travel Time (Mins)</th>
<th>Average Speed (kph)</th>
<th>Distance (KM)</th>
<th>Travel Time (Mins)</th>
<th>Average Speed (kph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sligo</td>
<td>231</td>
<td>195</td>
<td>71</td>
<td>201</td>
<td>167</td>
<td>72</td>
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<td>Letterkenny</td>
<td>239</td>
<td>206</td>
<td>70</td>
<td>153</td>
<td>135</td>
<td>68</td>
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<tr>
<td>Cavan</td>
<td>115</td>
<td>96</td>
<td>72</td>
<td>141</td>
<td>131</td>
<td>65</td>
</tr>
<tr>
<td>Omagh</td>
<td>180</td>
<td>150</td>
<td>72</td>
<td>110</td>
<td>88</td>
<td>75</td>
</tr>
<tr>
<td>Enniskillen</td>
<td>164</td>
<td>137</td>
<td>72</td>
<td>134</td>
<td>109</td>
<td>74</td>
</tr>
<tr>
<td>Derry / Londonderry</td>
<td>236</td>
<td>204</td>
<td>70</td>
<td>116</td>
<td>101</td>
<td>69</td>
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<tr>
<td>Galway</td>
<td>207</td>
<td>138</td>
<td>90</td>
<td>322</td>
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<tr>
<td>Tuam</td>
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<td>153</td>
<td>88</td>
<td>307</td>
<td>264</td>
<td>70</td>
</tr>
<tr>
<td>Ballymena</td>
<td>212</td>
<td>167</td>
<td>76</td>
<td>45</td>
<td>40</td>
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<tr>
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<td>77</td>
<td>83</td>
<td>61</td>
<td>60</td>
<td>61</td>
</tr>
<tr>
<td>Cork</td>
<td>252</td>
<td>174</td>
<td>87</td>
<td>421</td>
<td>290</td>
<td>87</td>
</tr>
<tr>
<td>Waterford</td>
<td>164</td>
<td>118</td>
<td>83</td>
<td>332</td>
<td>234</td>
<td>85</td>
</tr>
<tr>
<td>Limerick</td>
<td>196</td>
<td>139</td>
<td>85</td>
<td>364</td>
<td>256</td>
<td>85</td>
</tr>
</tbody>
</table>

6.2.4 Given that distances between each town and Dublin / Belfast vary, the most meaningful comparison is average speed. Overall:

- average speeds from the Border Area towns to Dublin is 71kph, compared to 85kph from the other towns; and
- average speeds from the Border Area towns to Belfast is also 71kph, compared to 76kph from the other towns.

6.2.5 The findings very clearly demonstrate that average speeds are higher when travelling from towns such as Galway, Cork, Waterford and Limerick to Dublin or Belfast compared to the Border Area towns, making them more accessible and thus fostering stronger economic linkages with the core economic hubs. This is a key point – the Border area is, in effect, ‘further away’ from the main economic growth poles and thus is less likely to benefit from investments that require good mobility.

6.2.6 A case in point would be to compare Sligo and Galway, which are both of a similar distance to Dublin. Galway however benefits from the M6 motorway, providing an average speed 19kph higher than Sligo. While both areas are of a broadly similar distance to Dublin, the M6 makes Galway ‘closer’, with travel requiring only two hours 18 minutes as opposed to three hours 15 mins from Sligo.

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48 www.theaa.com
Further evidence of this important point was provided by interrogating the Irish National Traffic Model. The model contains all National and Regional roads and has a total of 874 zones, each of which has data related to population and employment opportunities. Zones with the highest levels of population and employment are the most ‘attractive’ within the model – central Dublin and Cork for example.

By using the data from this model, we developed a set of ‘Hansen Indicators’. Hansen Indicators are a measure of accessibility – they illustrate a single travel time index for each zone calculated as the average index to every other zone in the model, weighted by the attractiveness (ie population and employment) of every other zone. For example, if we take a zone in the centre of Sligo, the indicator will use the average travel time index from that zone to all other 873 zones in the model weighted by the attractiveness of each of the zones – ie zones in major urban areas with high population and employment numbers will carry a higher weighting. The outcomes of this process are illustrated in Figure 6.1 below:

Figure 6.1 Hansen Accessibility Indicators for the Republic of Ireland

The above Figure represents accessibility for all zones for the inter-peak period (1200 – 1400) in 2006. The areas highlighted in the dark blue show the zones with the best accessibility in the model and the areas in the lightest blue show the areas with poorest accessibility. As would perhaps be expected, the Dublin conurbation has the best accessibility. However, one can also see that the zones with the best accessibility outwith the capital radiate out along the National road network.

It is notable that the Border Area (particularly County Donegal) has the poorest accessibility in Ireland alongside the extremities of the west coast. This reinforces the point that transport links to and from the Border Area are comparatively poorer than other areas of Ireland. It should also be noted that the base year of this model is 2006 – it therefore does
not reflect the recent additional expenditure on the Major Inter Urban Motorway schemes in other areas of Ireland outwith the Border Area. These Motorways are shown in Figure 6.2 below, which was sourced from the Chartered Institute of Logistics and Transportation’s recent review of the Transport 21 programme.

![Figure 6.2 Motorways Developed through Transport 21 Programme](image)

6.2.11 It is clear that, if the accessibility map was reproduced for a 2012 base, the relative accessibility of the Border Area would be **significantly worse**. Perhaps the key argument to arise from this section is that the road network in the Border area is incomplete when compared with other areas of Ireland.

6.2.12 Unfortunately, the Irish National Traffic Model does not include Northern Ireland, except as a set of large external zones. We contacted Roads Service in an attempt to obtain similar data for the north but there were no comparative data available.
Journey Time Reliability

6.2.13 Journey time reliability is also a key problem in the Border Area. While the inter-urban stretches of the Border road network are not generally congested, unreliable journey times can arise from urban congestion and traffic ‘platooning’ caused by HGVs and agricultural vehicles and the lack of overtaking opportunities.

6.2.14 During the stakeholder consultation, a number of consultees raised concerns about congestion on the A5, particularly on the approaches to Derry/Londonderry and around Strabane and Omagh. Congestion is seen to be a particular problem at the weekends (including Friday and Monday), where the A5 can become clogged with holiday traffic bound for County Donegal.

6.2.15 The main traffic problems on the A4/N16 corridor are concentrated around the ‘island town’ of Enniskillen. Traffic has to pass straight through the heart of the town and negotiate several busy and strategically important junctions. Through traffic also has to mix with local traffic making use of the town centre amenities, often causing severe congestion. Fermanagh District Council noted that journey time surveys demonstrated that the trip through Enniskillen could take anywhere from ten minutes to one hour. This is a key issue for business traffic and hauliers in particular. In addition, Enniskillen is suffering the negative economic consequences of traffic congestion.

6.2.16 It is worth pausing here to consider freight related issues. A report published in 2008 by Peter Quinn Consultancy identified several key freight flows along the N16/A4 corridor, including:

- a variety of food products and other products from agriculture over the entire length of the corridor;
- various pharmaceutical products and medical devices – there are some large multi-national companies in this sector located in the Border Area;
- timber and related products, including some furniture (as well as which, a large amount of timber is sourced in the west of Ireland for processing in Fermanagh and re-export to the Republic of Ireland);
- a number of engineering products, especially precision engineering, where there is particular expertise in the Sligo area and Sligo Institute of Technology;
- a wide range of building and construction materials, including concrete products, insulation materials, roof tiles etc;
- various plastic and packaging products; and
- a variety of other manufactured products, mostly produced by smaller businesses.49

6.2.17 The report notes that these products have several common characteristics, including a high-weight to value ratio. The heavy usage of the A4/N16 corridor by freight makes journey time reliability a key issue. Logistics firms typically operate a ‘Just-in-Time’ system, which minimises the costs of inventories. The cost efficiency of such a system is heavily dependent on reliable journey times. If for example, a firm knows that travel time through Enniskillen can vary by up to 50 minutes, they have to build this into their schedule, giving

49 Quinn, P., Analysis of Need for Up-Grading the N16-A4 Arterial Route (Peter Quinn Consultancy, 2008). P. 11.
rise to potential ‘dead time’ costs if the journey is at the low end of the scale. Nonetheless, building in such slack is essential, as hauliers often have to be at their destination for a strictly appointed time, be that for a delivery or to catch a ferry to the UK or Europe. Journey time unreliability on both the A4 / N16 and the A5 / N2 therefore has real financial implications for transport costs and competitiveness of firms in the Border Area.

6.2.18 The journey time reliability issue also has an impact on road wear and tear. As noted in an earlier chapter, freight flows from the Border Region (in terms of gross tonnage moved) are the highest on the island of Ireland. It is good practice to provide specific freight routes where there are high freight flows, for example, routes to and from major ports, such as Felixstowe and Southampton in England. However, there is anecdotal evidence to suggest that reliability issues on the A4 / N16 is leading to re-routing effects onto Regional roads whose widths and construction are not appropriate for HGVs. As a consequence these large and heavy vehicles are causing damage to County roads resulting in a significant additional cost in terms of road maintenance.

**Road Standards**

6.2.19 Northern Ireland and the Republic of Ireland both have a clearly defined roads hierarchy, tapering down from motorways to unclassified roads. Central government typically controls a portfolio of roads that are strategically important for moving goods and people – Key Transport Corridors and Trunk roads in Northern Ireland and National Primary roads in the Republic of Ireland.

6.2.20 There is an expectation with such roads that they will be of a high standard, which includes:

- minimum alignment constraints (‘hilliness’ and ‘bendiness’);
- reduced number of intersections per kilometre; and
- whole length alignment matches ‘desire lines’ and associated demand.

6.2.21 While the majority of roads in this study are of a reasonable quality, it can be strongly argued that the N16 in particular falls below the standards which would be expected of a National Primary Road. While the N16 can accommodate existing traffic demand, the road is narrow, bendy and offers limited opportunities for overtaking. This can give rise to safety issues, which are evidenced by an accident rate significantly in excess of the national average.

**Nature of Traffic**

6.2.22 Within the roads hierarchy, there is also a clear expectation of types of use. For example, motorways are seen as a conduit for strategic traffic and thus do not permit agricultural vehicles and cyclists whilst also having defined rules for HGVs, caravans etc. While National Primary roads and Key Transport Corridors / Trunk roads do not have the same stipulations *per se*, they are designated as such because they are seen as routes of strategic importance.

6.2.23 There is some anecdotal evidence that the strategic routes in the Border Area are suffering from issues related to traffic that is local in nature. For example, on the A5, the use of the route by agricultural vehicles and local traffic around Derry / Londonderry, Strabane and Omagh is causing localised congestion and impacting on the journey times and the average speeds of inter-urban traffic. Similarly, strategic traffic on the A4 has to travel through
Enniskillen, where it mixes with shopping and commercial traffic. As has been noted above, this can have severe knock-on effects in terms of journey times and average speeds.

6.2.24 Addressing this issue of mixed road use is important if the Border Area is to realise reduced journey times and increased average speeds.

**Investment Prioritisation**

6.2.25 A repeated theme to emerge in the consultation was a disproportionately low allocation of funding to the Border Area for transport improvements. A number of stakeholders explained that improvements to roads in the Border Area are always at the lower end of the priority scale in roads needs studies. Stakeholders would be accepting of this point if they eventually ‘got their turn’. However, it was noted that as the NRA in particular work through their investment plans, they tend to get to a certain point and ‘start again at the top’ before completing the previous programme. This is seen by stakeholders as highly inequitable, as some roads have had multiple upgrades in a period in which Border roads have had little or no money spent on them.

6.2.26 The claim that the Border Area receives relatively little investment in its transport system is borne out to some extent by the NRA’s spending profile. As part of this study, we have attempted to define the spending on roads in each Irish County Council and NUTS III statistical regions. The NRA provides information on all schemes undertaken within its jurisdiction, including a list of completed roads schemes – these can be found at - [http://www.nra.ie/mapping/](http://www.nra.ie/mapping/)

6.2.27 As part of our analysis, we listed all schemes listed as completed by the NRA between 2001 and the 2011. Thereafter, we sought to establish a cost for each scheme – this was not easy in many cases and estimates have been made based on the cost of similar schemes elsewhere in the Republic of Ireland. Costs are also in nominal rather than real terms. While one should be careful not to draw definitive conclusions from this analysis, Table 6.2 below does suggest that the spending on roads in the Border Area significantly trails most other areas of Ireland.

**Table 6.2 NRA Expenditure by NUTS III Region 2001-2011**

<table>
<thead>
<tr>
<th>Region</th>
<th>No. of Schemes</th>
<th>Nominal Cost (€ million)</th>
<th>Population</th>
<th>Expenditure per Capita (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Border (excluding County Louth)</td>
<td>9</td>
<td>€487</td>
<td>391,344</td>
<td>€1,250</td>
</tr>
<tr>
<td>Dublin Region</td>
<td>9</td>
<td>€3,217</td>
<td>1,221,355</td>
<td>€2,650</td>
</tr>
<tr>
<td>Mid-East Region</td>
<td>12</td>
<td>€2,258</td>
<td>530,437</td>
<td>€4,250</td>
</tr>
<tr>
<td>Midlands Region</td>
<td>10</td>
<td>€1,707</td>
<td>282,195</td>
<td>€6,050</td>
</tr>
<tr>
<td>South-East Region</td>
<td>10</td>
<td>€2,299</td>
<td>512,992</td>
<td>€4,500</td>
</tr>
<tr>
<td>South-West Region</td>
<td>12</td>
<td>€494</td>
<td>663,176</td>
<td>€750</td>
</tr>
<tr>
<td>West Region</td>
<td>9</td>
<td>€726</td>
<td>444,991</td>
<td>€1,650</td>
</tr>
</tbody>
</table>

50 Rounded to nearest €50
Table 6.2 clearly demonstrates that the Border area compares much less favourably in terms of NRA investment, having received only 4% of the total NRA investment. While the number of schemes is broadly equivalent to other areas, the total spend of €487 million was the lowest of all Irish regions, and smaller by almost a factor of five than the Mid-East and South-East regions.

In terms of expenditure per capita, the average Border Area resident has had around €1,250 spent on transport within their area. While this is higher than the South-West region, it is dwarfed by the expenditure per capita in all other regions of Ireland, except the West Region, where the additional spend was only around €400 per person. Nonetheless, ICBAN and residents of the Border Area generally can make a very strong case for their not having received a fair share of the NRA’s investment. The out-turn impact of this is that the Border Area is falling further and further behind in connectivity terms and is thus becoming less competitive overall. The continuation of this spending pattern raises long-term questions about the future economic viability of the Border area.

A number of Irish County Councils also pointed out that the Regional roads under their control are actually of a better standard than the National Primary Roads. It is claimed that this leads to traffic diverting from strategic roads to more local roads. There is no firm evidence to determine the extent of this practice, but it is nonetheless illogical for a Regional road to be of a better standard than a National Primary.

To some extent, Northern Ireland’s Roads Service has prioritised recent investment in the Key Transport Corridors in the east to the detriment of the western Border Area. The major investment has been in two major PPP packages:

- **Package 1**, 2006 – 9, totalling £118m and featuring M1 Westlink upgrade in Belfast and M2 widening on the approaches to Belfast; and
- **Package 2**, 2007 – 11, totalling £224m and featuring A1 dualling near Newry and the A4 dualling between Dungannon and Ballygawley.

### 6.3 Issues

Issues are uncertainties that the study may not be in a position to resolve but must work within the context of. This section reviews the issues relevant to transport infrastructure in the Border Area.

#### The Border

The Border itself has proven to be a particularly significant constraint in terms of spatial and infrastructure planning. In general terms, borders, be they local, regional or national, tend to act as a barrier to effective infrastructure planning – border areas are, by definition, at the periphery of an authority area and thus tend to be seen as a lower priority. This situation was of course accentuated in Ireland for many years by the ‘Troubles’, which impacted on many types of cross-Border cooperation. In addition, currency fluctuations have an impact on business certainty within the Border Area.

The Border itself therefore remains a factor in the modern day but its significance is gradually lessening. Through organisations such as ICBAN, there is a greater emphasis on
coordinated spatial planning and infrastructure development. However, full and complete integration of the Border communities will, in the long-term, depend on developing physical and virtual infrastructure links, bringing communities closer together and realising the benefits of cross-Border trade.

**The A5 Western Transport Corridor**

6.3.4 As noted at the outset of this report, the key issue faced is the uncertainty surrounding the A5 Western Transport Corridor. At present, two sections of the A5 have committed funding but there is no clear indication as to whether the Irish Government will fund the remaining section it had committed money to. The outcome of the ongoing negotiations on this issue will be material to the implementation of our study recommendations.

6.3.5 The A5 scheme is also currently going through the Public Inquiry process and the findings of that Inquiry may have an impact on the future of that scheme. At present, the Regional Development Minister is in receipt of the Inspector’s Report and is hoping to publish its findings in early summer 2012.51

**Proposed Transport Investments**

6.3.6 The net positive impact of any proposed transport improvements in the Border Area will be amplified by complementary schemes in adjoining areas providing they improve access to key destinations. However, one must also recognise that improvements to other roads could lessen the case for funding improvements within the Border Area. This is particularly relevant in the case of the N16/A4 between Sligo and Ballygawley given the proposed improvements to the N3 and N4.

6.3.7 The N3 begins 35 kilometres south of Enniskillen and runs to Kells before joining the M3 to Dublin.52 The NRA is currently constructing the N3 Belturbet Bypass and realigning the existing N3 from the Meath-Cavan border at Edenburt to the end of the Cavan Town Bypass. The scheme will also incorporate a bypass of Virginia Town.53

6.3.8 The N4 runs from the south of Sligo to join the M4 at Mullingar before continuing along the M6 to Dublin. A number of improvements are planned for the A4 including a new 11.8km section of single carriageway between Collooney and Castlebaldwin54 and improvements to the Sligo Urban Relief Road.55 The grade separation of the N4 at the Downs is also currently under construction.56

6.3.9 While improvements to the N3 and N4 will be positive for the Border Area overall, they could potentially weaken the case for spending on the N16/A4 corridor, although it should be noted that the case for improved links to Belfast from Sligo would not be affected by improvements to the N3 and/or N4.

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51 [http://www.a5wtc.com/](http://www.a5wtc.com/)
52 [http://www.nra.ie/RoadSchemeActivity/CavanCountyCouncil/N3BelturbetBypass/SchemeName,16540,en.html](http://www.nra.ie/RoadSchemeActivity/CavanCountyCouncil/N3BelturbetBypass/SchemeName,16540,en.html)
53 [http://www.nra.ie/RoadSchemeActivity/CavanCountyCouncil/N3NorthofKellstoCavan/SchemeName,16536,en.html](http://www.nra.ie/RoadSchemeActivity/CavanCountyCouncil/N3NorthofKellstoCavan/SchemeName,16536,en.html)
54 [http://www.nra.ie/RoadSchemeActivity/SligoCountyCouncil/N4CollooneyCastlebaldwin/SchemeName,16443,en.html](http://www.nra.ie/RoadSchemeActivity/SligoCountyCouncil/N4CollooneyCastlebaldwin/SchemeName,16443,en.html)
55 [http://www.nra.ie/RoadSchemeActivity/SligoCountyCouncil/N4N15SligoUrbanRoadImprovement/SchemeName,17941,en.html](http://www.nra.ie/RoadSchemeActivity/SligoCountyCouncil/N4N15SligoUrbanRoadImprovement/SchemeName,17941,en.html)
56 [http://www.nra.ie/RoadSchemeActivity/WestmeathCountyCouncil/N4TheDownsGradeSeparation/SchemeName,16418,en.html](http://www.nra.ie/RoadSchemeActivity/WestmeathCountyCouncil/N4TheDownsGradeSeparation/SchemeName,16418,en.html)
6.4 Opportunities

6.4.1 This section sets out opportunities for improving the transport system and the way it is used.

Low Cost Improvements

6.4.2 It is undeniable that the current economic situation, particularly in the Republic of Ireland, presents a number of challenges in terms of funding new infrastructure projects. Nonetheless, one must realise that there also exists an opportunity in terms of reduced contractor costs. The substantial reduction in tendered work has forced down contractor rates and made bidding highly competitive and hence good value for the public sector at the present time.

6.4.3 There is also a potential opportunity to borrow money at historically low rates of interest, allowing more to be procured for less. However, there are two key caveats:

- the Northern Ireland Assembly is not permitted to borrow money and thus would be dependent on presenting a case to HM Treasury for funding; and
- while the Irish Government can borrow, concerns over its sovereign debts and ongoing Eurozone uncertainty means that Irish Government bond yields (the rate at which it can borrow) is high at present.

6.4.4 These issues are discussed in more detail in Chapter 9.

New Highway Design Standards

6.4.5 The adoption of new highway design standards in both Northern Ireland (TD 70/08\(^{57}\)) and the Republic of Ireland (Type 2 Dual Carriageways\(^{58}\)) represents an opportunity for the improvement of roads in the Border Area. In Northern Ireland, the primary impact of the new standards (which have the principal aim of improving safety), is to reduce the number of locations where wide single ‘2+1’ roads (WS2+1) are appropriate. This is due to the incidence of frequent local accesses (farm or private housing) on NI roads. As a result, in place of WS2+1, which had been a relatively inexpensive way to provide on-line improvements, highway designers are now favouring off-line dual carriageway designs where daily flows are in excess of 11,000 vehicles.

6.4.6 This presents an opportunity for high quality dual carriageway improvements to strategic roads in the Border Area, most certainly the A5 and potentially the A4. However, this also represents a constraint to some extent, as the cost of constructing an off line dual carriageway is far higher per kilometre, and still remains to be justified in terms of value for money. Similarly in the Republic of Ireland, Type 2 Dual Carriageway can be considered for daily traffic flows between 11,600 and 20,000. National roads with lower traffic flows should normally be built to a standard single carriageway design.

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\(^{57}\) www.dft.gov.uk/ha/standards/dmrb/vol6/section1/td7008.pdf

Preparatory Work

6.4.7 It should be noted that preparatory work for a number of improvements to roads in the Border Area is relatively well advanced, providing a series of 'shovel-ready' schemes that can be progressed relatively quickly should the funding be available.

6.5 Constraints

6.5.1 Constraints represent the bounds within which a study is being undertaken. Planners and decision makers must work within these constraints in developing options and solutions.

Funding Environment

6.5.2 As alluded to throughout this report, obtaining the required funding for what could be large capital schemes is a key constraint that must be recognised. The requirement for funding for improvements in an area of relatively low population and set against a backdrop of fiscal tightening is without question a challenge. This issue is also amplified by the borrowing constraints on the respective governments.

6.5.3 ICBAN and their partners are also not only competing against other transport schemes for funding but against the full range of demands for government spending. This is an important point – transport improvements generally have high up-front capital costs with the benefits accruing over a long period of time, typically measured over 60 years. Given the short period in office for most politicians and the pressing economic issues facing the island as a whole, capital expenditure is likely to be squeezed in the near-term.

6.5.4 The funding constraint is not, however, insurmountable and requires the socio-economic case to demonstrate that the proposed improvements do represent value for money, and provide a range of wider social as well as economic benefits. In addition, ICBAN and their partners can also work with the Northern Ireland Assembly and the Irish Government to consider innovative funding packages.

Economic Uncertainty

6.5.5 The current economic uncertainty (in the south of Ireland in particular) may also place something of a constraint on transport expenditure. Spending on transport infrastructure is often targeted at opening up new commercial and housing development opportunities in a growing economy. Attracting foreign direct investment has also often been a justification for transport investment in the Republic of Ireland. However, the global economic instability, the current crisis in the Eurozone and fiscal austerity measures implemented from both London and Dublin have significantly curtailed both the property and commercial markets and the prospects for inward investment. This is a short to medium-term issue but it will have some impact on the perceived need for transport infrastructure funding during this period.

6.5.6 However the converse argument to this is that spending on infrastructure at a time of recession is a way of stimulating growth and as such this could be viewed as a renewed justification for investment in the Border Area.
6.5.7 Ireland is also facing increased long-term competition in the highly mobile foreign direct investment market. As well as competition for market share from emerging economies, recent fiscal austerity measures have made Ireland a less attractive to place to live and undertake business. This is a longer-term structural trend and it is unlikely that Ireland will recover the rapid rates of economic growth (and hence construction boom) it displayed in the 20 or so years before the economic crash.
7 Objective Setting

7.1 Overview

7.1.1 This chapter establishes the Transport Planning Objectives for the option appraisal which follows and these provide a framework in which to appraise the emerging options. They also express the outcomes sought and describe how the problems set out in Chapter 6 will be addressed.

7.1.2 The setting of Transport Planning Objectives is central to the appraisal process and offers significant value for a number of reasons. They:

- provide all stakeholders with a clear indication of what the study is trying to accomplish;
- facilitate accountability; and
- introduce clarity where there may exist strong vested interests and entrenched views on priorities.

7.1.3 This objective-led approach will ensure that all stakeholders can understand and audit the steps taken to establish the preferred options.

7.2 Vision Statement

7.2.1 As part of the baselining for this report, we established an overall Vision Statement for transport in the Border Area, which is:

“The completion of a high quality strategic transport network which ensures safe, efficient and reliable journey times for freight, business and public transport traffic providing competitive access to economic centres and international ports and airports. The network will have built-in resilience to substantial changes in traffic volumes and composition and be well maintained at all times.”

7.3 Transport Planning Objectives

7.3.1 The consultation process and desk-based research identified a lack of connectivity and long and unreliable journey times as the key transport problems facing the Border Area. These problems are seen as detrimental to both local businesses and the attractiveness of the area for both inward investment and tourism. Based on these points, the Transport Planning Objectives (TPO) for this study are:

- **TP01a:** Work towards equalisation of average road travel speeds from the Border Area to Belfast with other comparable regions of Northern Ireland and the Republic of Ireland;

- **TP01b:** Work towards equalisation of average road travel speeds from the Border Area to Dublin with other comparable regions of Northern Ireland and the Republic of Ireland;
7.3.2 The designated key towns in TPO2 have been drawn from the NSS and the RDS 2035 and for the purposes of our analyses are:

- RoI – Letterkenny, Sligo, Carrick on Shannon, Cavan, and Monaghan; and
- NI – Derry / Londonderry, Strabane, Omagh, Enniskillen, Dungannon, and Armagh.

7.3.3 The consultation process also confirmed the desirability of ‘minimum standards’ for designated roads. In view of the need for transparency, this is captured in the next Chapter under ‘Options’

7.4 National Policy Objectives

7.4.1 As well as appraising options against our specific Transport Planning Objectives, it is important to assess how they contribute towards national policy objectives. The common national transport objectives for Northern Ireland and the Republic or Ireland are:

- Safety – in particular reducing the number and severity of road collision casualties;
- Environment – protecting the natural and built environment from harmful transport impacts;
- Economics – improving the efficiency of the transport network and maximising economic growth;
- Accessibility – improving access to essential services for people without cars; and
- Integration – working towards multi-modal transport networks and wider government policies.

7.4.2 Options are also appraised in terms of cost to government.
8 Option Generation and Development

8.1 Overview

8.1.1 This chapter develops and prioritises a series of options which, through addressing the Transport Planning Objectives, will assist the Border Area in tackling the transport related problems and realising the opportunities identified in Chapter 6.

8.1.2 It should be noted at the outset of this chapter that this study is strategic in nature, considering potential transport solutions at a high level. It therefore does not comment on specific route alignments – this would be the preserve of a more detailed scheme based study.

8.1.3 Information regarding individual schemes has been taken from existing technical reports and published documents – these are summarised in Appendix C.

8.2 Optioneering

8.2.1 An important element of the optioneering process is to seek stakeholder views on possible options to create a ‘long list’ of schemes for appraisal. We undertook this process as part of the stakeholder consultation process and underpinned it with a desk-based review of previously suggested schemes.

Defining Corridors

8.2.2 It became evident very early in the process that stakeholders see the development of two transport corridors within the Border Area as their priority:

- A5 / N2 between Derry / Londonderry, Aughnacloy and onwards to Dublin. Included within this overall corridor plan were suggested improvements to links with Letterkenny along the N14; and
- A4 / N16 between Sligo and Ballygawley.

8.2.3 The research undertaken as part of this study clearly identified the importance of both corridors in supporting the future economic prosperity of the Border Area. We therefore consider the merits of each corridor separately. One should not read the analysis as A5 / N2 versus A4 / N16 as the reality is that both corridors will have to be improved if the Border Area is to realise its goal of sustainable and balanced economic development. It is in the interests of all stakeholders to work together in realising improvements on both the east-west and north-south axes.

Minimum Standards

8.2.4 While a number of detailed options emerged for both corridors during the appraisal process, one consistent message that arose was of the need for minimum standards. This is particularly relevant for the N16.

8.2.5 In short, it can be strongly argued that all roads designated as National Primary Roads in the Republic of Ireland or Key Transport Corridors / Trunk roads in Northern Ireland should be of a modern minimum standard permitting safe overtaking. The NRA has set a minimum
standard of Standard Single Carriageway for National Primary road. The construction widths for a Standard Single Carriageway Road are:\n\n- Lane width - 2 x 3.65m;
- Hard Shoulder width – 2 x 2.5m; and
- Verge width – 2 x 3.0 m.

8.2.6 Clearly the N16 is well below the current expected standard – it is narrow, bendy and hilly with limited overtaking opportunities, lower than average speeds and higher than average accident rates. There is therefore a persuasive case for **improvements to the N16 from the perspective of meeting these minimum standards.**

**Travel Information and Safety Precautions**

8.2.7 Two key issues to emerge as part of our research were:

- the prominence of the Border Area as an origin and destination for time critical freight; and
- the ambitions to develop the tourist offering.

8.2.8 Much of the available literature suggests that journey time reliability and poor perceptions of the road network cost logistics firms money and discourage tourists from visiting the area. The change of road number on the corridors (due to its cross-border nature) and the lack of consistent confirmatory signing undermines the confidence of the tourist visitor following the route. The provision of improved travel information would provide some ‘quick wins’ in this respect. Immediate and low cost priorities could include:

- more frequent signage, particularly route confirmatory signs showing distances to major destination towns and tourist information signs; and
- improved lining, signing and lighting.

8.2.9 These measures would be relatively low cost but could go some way towards improving the reliability and perceived quality of journeys along the corridors.

**Public Transport**

8.2.10 The long-distance strategic nature of this study and the paucity of public transport options in the Border area led to a focus on road schemes amongst stakeholders. However, there was a general recognition that public transport provision in the Border area is very poor and that the tourist offering in particular would be markedly improved if a meaningful public transport system could be put in place. Too often the current inter-urban bus services in the Border Area are provided in conjunction with a number of much longer express coach services to Belfast or Dublin. These make the services very difficult to understand and use by infrequent travellers.

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59 NRA TD27/00 Annex A
8.2.11 No specific options were advanced but there is a very clear **opportunity for public transport improvements to complement any improvements to the road network**. This could include express bus services between key towns operated jointly by Translink (Ulsterbus) and Bus Eireann.

8.2.12 There is also a specific need to improve bus services between Derry / Londonderry and Letterkenny in keeping with their ‘Linked Gateways’ status. Stakeholders explained that the current service was inconsistent and infrequent. There may be potential for a Translink and Bus Eireann joint venture to run an express coach service between these two Gateway settlements. The service could have a single definitive branding; clockface timetabling; and real-time information. A simple measure like this would help realise the planning objectives of developing ‘Linked Gateways’.

8.3 **A5 / N2 Corridor**

8.3.1 This section appraises and prioritises the options identified as part of the A5 / N2 corridor analysis. While the analysis which follows considers the phased priority of options, the objective behind the improvements to the A5 / N2 corridor is to create a continuous and high quality link between Ireland’s fourth largest city Derry / Londonderry and its largest city, Dublin. Therefore, we would envisage that the prioritisation set out below relates only to the phasing of improvements and that **all of the options will be delivered within a defined timescale to complete this route**.

8.3.2 Note that at present, traffic between Derry / Londonderry and Dublin is likely to route via the A5 / N2 only as far as Ardee before switching to the M1 to Dublin. Indeed some traffic may omit the N2 altogether routing via Armagh and Newry instead. Alternatively, the relatively short N33 link between the N2 at Ardee and the M1 at Charleville weakens the value for money case, from a Border area perspective, for improvements to the N2 south of Ardee.

8.3.3 Table 8.1 below presents the options identified for the A5 / N2 corridor on a broad north to south basis.
Table 8.1  A5 / N2 Corridor Schemes

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Description</th>
<th>Distance (KM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N14 Lifford to Letterkenny Improvements</td>
<td>Design and construction of Type 2 dual carriageway between N13/N14 junction at Manorcunningham and new N14/N15/A5 Link [NRA – ‘Suspended’].⁶⁰</td>
<td>19</td>
</tr>
<tr>
<td>A5 Link to N14/N15 at Strabane</td>
<td>The N14/N15 to A5 Link will consist of 0.5km of mainline including a major bridge crossing the River Finn [NRA – ‘Planning’].⁶¹</td>
<td>0.5</td>
</tr>
<tr>
<td>A5 Dualling (1) Derry / Londonderry to New Buildings (Strabane)</td>
<td>Construction of a new offline dual carriageway between Derry / Londonderry and New Buildings (Strabane)</td>
<td>24</td>
</tr>
<tr>
<td>A5 Dualling (2) Strabane – Omagh</td>
<td>Construction of a new offline dual carriageway between Strabane and Omagh.</td>
<td>31</td>
</tr>
<tr>
<td>A5 Dualling (3) Omagh – Ballygawley</td>
<td>Construction of a new offline dual carriageway between Omagh and Ballygawley.</td>
<td>26</td>
</tr>
<tr>
<td>A5 Dualling (4) Ballygawley – Aughnacloy (Border)</td>
<td>Construction of a new offline dual carriageway between Ballygawley and Aughnacloy.</td>
<td>7</td>
</tr>
<tr>
<td>N2 Castleblayney – Border</td>
<td>Upgrading of the N2 between Clontibret Village and the Border [NRA – ‘Planning’].⁶²</td>
<td>28</td>
</tr>
<tr>
<td>N2 Ardee – Ashbourne</td>
<td>New dual carriageway between Ardee and Ashbourne [NRA – ‘Suspended’].⁶³</td>
<td>39</td>
</tr>
<tr>
<td>N2 Slane Bypass</td>
<td>Type 2 dual carriageway bypass to the east of Slane [NRA – ‘Planning’].</td>
<td>3.5</td>
</tr>
</tbody>
</table>

8.3.4 Note that, as discussed previously, funding has recently been announced for the dualling of the A5 between Derry / Londonderry to Strabane and Omagh to Ballygawley. The immediate issue here is the ‘gap’ left between Strabane and Omagh in terms of the current ‘commitments’.

**Appraisal of Options**

8.3.5 The Transport Planning Objectives establish a clear rationale for the phasing of interventions within the Border Area. Table 8.2 shows the appraisal of each scheme against the Transport Planning Objectives, using a seven-point qualitative scale.

⁶⁰ http://www.nra.ie/RoadSchemeActivity/DonegalCountyCouncil/N14LetterkennytoLifford/SchemeName,16533,en.html
⁶¹ http://www.nra.ie/RoadSchemeActivity/DonegalCountyCouncil/N14N15toA5Link/SchemeName,17230,en.html
⁶² http://www.nra.ie/RoadSchemeActivity/MonaghanCountyCouncil/N2CastleblayneytoBorder/SchemeName,16469,en.html
⁶³ http://www.nra.ie/RoadSchemeActivity/MeathCountyCouncil/N2AshbournetoArdee/SchemeName,16476,en.html
### Table 8.2 Appraisal of Options against Transport Planning Objectives

<table>
<thead>
<tr>
<th>Option Description</th>
<th>TPO1a – Average Speeds – Border Area</th>
<th>TPO1b – Average Speeds – Dublin</th>
<th>TPO2 – Average Speeds – Intra Border Area</th>
<th>TPO3 – Safe, well maintained network – inward investment in Border Area</th>
<th>TPO4 – Best Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N14 Lifford to Letterkenny Improvements</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>A5 Link to N14/N15 at Strabane</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>A5 Dualling (1) Derry / Londonderry to New Buildings (Strabane)</td>
<td>o</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>A5 Dualling (2) Strabane – Omagh</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>A5 Dualling (3) Omagh – Ballygawley</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>A5 Dualling (4) Ballygawley – Aughnacloy (Border)</td>
<td>o</td>
<td>✓</td>
<td>o</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>N2 Castleblayney – Border</td>
<td>o</td>
<td>✓</td>
<td>o</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>N2 Ardee – Ashbourne</td>
<td>o</td>
<td>✓</td>
<td>o</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>N2 Slane Bypass</td>
<td>o</td>
<td>✓</td>
<td>o</td>
<td>✓</td>
<td>x</td>
</tr>
</tbody>
</table>

Key - ✓✓✓ Major Benefit / ✓✓ Moderate Benefit / ✓ Minor Benefit / o Neutral / x Minor Disbenefit / xx Moderate Disbenefit / xxx Major Disbenefit

**8.3.6** The 19km Lifford to Letterkenny dual carriageway would provide reduced journey times to Dublin but Belfast bound traffic may still route via the N13 Derry / Londonderry so savings here are less. Travel times south to other parts of the Border Area, including Enniskillen would also be reduced. Dualling would provide the highest quality of road link but the high costs combined with relatively low flows reduce the value of this option.

**8.3.7** The A5 / N14 Link is a more modest scheme in scale which provides minor benefits across all categories. As a focussed pinch point / congestion relief scheme though, this proposal may provide better value than the previous two schemes.

**8.3.8** Dualling the A5 as far as the A4 would provide a high quality dual carriageway route all the way from Derry / Londonderry to Belfast. Traffic from Strabane / Letterkenny and the north west of the Border Area would be expected to use this route. Assuming that Derry / Londonderry traffic would continue to use the A6 however as it is much shorter, the Derry / Londonderry to Strabane section would offer no benefits whereas the other two sections would provide substantial time savings in terms of travel times to Belfast. South of Ballygawley, there is no benefit to Belfast bound traffic as it will have left to join the A4. All four sections provide substantial time savings in travel to Dublin regardless of whether the
N2 or M1 is used onwards to Dublin. As the routes with the highest traffic levels the first three sections of the A5 are likely to offer best value, albeit the construction costs would also be very high.

8.3.9 The N2 schemes offer no benefits to Belfast bound traffic from the Border Area towns. Any Dublin bound Border Area traffic currently using the M1 via Newry or Ardee would be expected to switch to the N2 as these new schemes were built out, so substantial time savings are envisaged here, as well as potential knock on benefits to the remaining traffic on the M1. However, the value for money of improvements to the N2 south of Ardee is questionable given the close proximity of the M1. Indeed, an alternative long-term option could be to improve the N33 between Ardee and the M1.

8.3.10 The Castleblayney – Border section would remain single carriageway so the benefits here are relatively modest. The N2 schemes have no impact on intra-Border Area travel times but the improved connectivity to / from the area would benefit inward investment prospects so a minor benefit is noted here.

8.3.11 Table 8.3 below appraises the proposed A5 / N2 corridor schemes against national transport objectives again using a seven point, qualitative scale. It should be noted that these are first preliminary estimates based upon strategic considerations only and illustrate the strengths and weaknesses of the option relative to each other. Clearly much more detailed scheme appraisal would be undertaken following confirmation of precise road alignments and cross-section standards. These appraisals would confirm details such as environmental impacts and economic performance in terms of benefit cost ratios.

**Table 8.3 Appraisal of Options against Government Criteria**

<table>
<thead>
<tr>
<th>Scheme Description</th>
<th>Safety</th>
<th>Environment</th>
<th>Economics</th>
<th>Accessibility</th>
<th>Integration</th>
<th>Cost to Govt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>N14 Lifford to Letterkenny Improvements</td>
<td>vvvv</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>xx</td>
</tr>
<tr>
<td>A5 Link to N14/N15 at Strabane</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>A5 Dualling (1) Derry / Londonderry to New Buildings (Strabane)</td>
<td>vvvv</td>
<td>xxx</td>
<td>v</td>
<td>v</td>
<td>v</td>
<td>xxx</td>
</tr>
<tr>
<td>A5 Dualling (2) Strabane – Omagh</td>
<td>vvvv</td>
<td>xxx</td>
<td>v</td>
<td>v</td>
<td>v</td>
<td>xxx</td>
</tr>
<tr>
<td>A5 Dualling (3) Omagh – Ballygawley</td>
<td>vvvv</td>
<td>xxx</td>
<td>v</td>
<td>v</td>
<td>v</td>
<td>xxx</td>
</tr>
<tr>
<td>A5 Dualling (4) Ballygawley – Aughnacloy (Border)</td>
<td>vv</td>
<td>xx</td>
<td>v</td>
<td>v</td>
<td>v</td>
<td>x</td>
</tr>
<tr>
<td>N2 Castleblayney – Border</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>xx</td>
</tr>
<tr>
<td>N2 Ardee – Ashbourne</td>
<td>vvvv</td>
<td>xxx</td>
<td>o</td>
<td>v</td>
<td>v</td>
<td>xxx</td>
</tr>
<tr>
<td>N2 Slane Bypass</td>
<td>vvvv</td>
<td>xxx</td>
<td>o</td>
<td>v</td>
<td>v</td>
<td>x</td>
</tr>
</tbody>
</table>

Key - vvvv Major Benefit / vv Moderate Benefit / v Minor Benefit / o Neutral / x Minor Disbenefit / xx Moderate Disbenefit / xxx Major Disbenefit
8.3.12 As would perhaps expected, the schemes which (taken as a whole) would comprise the dualling of the A5 between Derry / Londonderry and Aughnacloy offer the greatest benefit in terms of economics. By offering large reductions in journey times and improved connectivity to Belfast and Dublin, the dualling of the A5 could offer significant economic benefits to the Border area. However, these schemes do perform poorly in terms of environmental objectives (as they would be built fully offline) and in terms of cost to government.

8.3.13 The N2 improvements, particularly the improvement to the Ardee – Ashbourne section, would offer few benefits in terms of economics and accessibility given the close proximity of the M1 to Ardee. The offline nature of the route would also have environmental impacts and would be expensive for government to fund. The Slane Bypass would be an integral element of realising any benefits from the N2 Ardee – Ashbourne improvements, but these benefits, would come with a particularly negative environmental impact given the historic importance of the town and surrounding Boyne Valley. In the event that there is no realistic likelihood that this section can be delivered in the medium term, then a pragmatic approach would be to upgrade the N33 between Ardee and the M1.

8.3.14 In this context, the accessibility objective is primarily focussed on those without access to a car. As such these road based improvements have all been scored as a minor benefit as they would open up the opportunity for improved regional and national bus services. Similarly, all these schemes have been developed via a number of policy frameworks so are integrated with existing policies. Cost to government here is a reflection of the scale of the schemes and whether they are off line, on line, single or dual carriageway.

8.3.15 While the main focus of this study is on inter-urban improvements, it is also necessary to consider the intra-Border impacts of each scheme, in terms of access to Belfast, Dublin and between towns in the Border area. Table 8.4 shows the impact of each scheme in terms of access to Dublin for six Border towns and cities.
Table 8.4  Impact of A5/N2 – Access to Dublin

<table>
<thead>
<tr>
<th>Improvements</th>
<th>Letterkenny</th>
<th>Londonderry</th>
<th>Omagh</th>
<th>Enniskillen</th>
<th>Strabane</th>
<th>Sligo</th>
</tr>
</thead>
<tbody>
<tr>
<td>N14 Lifford to Letterkenny Improvements</td>
<td>✔️</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>A5 Link to N14/N15 at Strabane</td>
<td>✔</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>A5 Dualling (1) Derry / Londonderry to New Buildings (Strabane)</td>
<td>-</td>
<td>✔️</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>A5 Dualling (2) Strabane – Omagh</td>
<td>✔️</td>
<td>✔️</td>
<td>-</td>
<td>-</td>
<td>✗</td>
<td>-</td>
</tr>
<tr>
<td>A5 Dualling (3) Omagh – Ballygawley</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>-</td>
<td>✔️</td>
<td>-</td>
</tr>
<tr>
<td>A5 Dualling (4) Ballygawley – Aughnacloy (Border)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>-</td>
<td>✔</td>
<td>-</td>
</tr>
<tr>
<td>N2 Castleblayney – Border</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>N2 Ardee – Ashbourne</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
</tr>
<tr>
<td>N2 Slane Bypass</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

8.3.16 The table demonstrates that the improvements along the A5 / N2 corridor will have the biggest impact on the accessibility of Derry / Londonderry to Dublin. In particular, the offline dual carriageway section from the city to Ballygawley will have a particularly substantial impact. These benefits are largely replicated from Strabane and Omagh.

8.3.17 The improvements to the N14 would only have a notable impact for Letterkenny, while the A5/N2 improvements would do little to improve the connectivity of Enniskillen and Sligo to Dublin.

8.3.18 Table 8.5 shows the equivalent metrics for Belfast:
Table 8.5 Impact of A5/N2 – Access to Belfast

<table>
<thead>
<tr>
<th>Scheme Description</th>
<th>Letterkenny</th>
<th>Londonderry</th>
<th>Omagh</th>
<th>Enniskillen</th>
<th>Strabane</th>
<th>Sligo</th>
</tr>
</thead>
<tbody>
<tr>
<td>N14 Lifford to Letterkenny Improvements</td>
<td>✔️ ✔️ ✔️</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>A5 Link to N14/N15 at Strabane</td>
<td>✔️ ✔️ ✔️</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>A5 Dualling (1) Derry / Londonderry to New Buildings (Strabane)</td>
<td>✔️ ✔️ ✔️</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✔️</td>
<td>-</td>
</tr>
<tr>
<td>A5 Dualling (2) Strabane – Omagh</td>
<td>✔️ ✔️ ✔️</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✔️</td>
<td>-</td>
</tr>
<tr>
<td>A5 Dualling (3) Omagh – Ballygawley</td>
<td>✔️ ✔️ ✔️</td>
<td>-</td>
<td>✔️ ✔️</td>
<td>-</td>
<td>✔️</td>
<td>-</td>
</tr>
<tr>
<td>A5 Dualling (4) Ballygawley – Aughnacloy (Border)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>N2 Castleblayney – Border</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>N2 Ardee – Ashbourne</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>N2 Slane Bypass</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

8.3.19 The A5/N2 schemes have relatively little impact in terms of improving access from the key Border towns to Belfast. Letterkenny and Omagh would perhaps experience the greatest benefit from the dualling of the A5 between the town and Ballygawley, while Strabane would also benefit from this.

8.3.20 Table 8.6 highlights the impact of the A5/N2 schemes in terms of connectivity with the Border area.
Table 8.6 Impact of A5/N2 – Intra-Border Connectivity

<table>
<thead>
<tr>
<th>Scheme Description</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>N14 Lifford to Letterkenny Improvements</td>
<td>✔ ✔</td>
</tr>
<tr>
<td>A5 Link to N14/N15 at Strabane</td>
<td>✔</td>
</tr>
<tr>
<td>A5 Dualling (1) Derry / Londonderry to New Buildings (Strabane)</td>
<td>✔✔</td>
</tr>
<tr>
<td>A5 Dualling (2) Strabane – Omagh</td>
<td>✔✔✔</td>
</tr>
<tr>
<td>A5 Dualling (3) Omagh – Ballygawley</td>
<td>-</td>
</tr>
<tr>
<td>A5 Dualling (4) Ballygawley – Aughnacloy (Border)</td>
<td>-</td>
</tr>
<tr>
<td>N2 Castleblayney – Border</td>
<td>-</td>
</tr>
<tr>
<td>N2 Ardee – Ashbourne</td>
<td>-</td>
</tr>
<tr>
<td>N2 Slane Bypass</td>
<td>-</td>
</tr>
</tbody>
</table>

8.3.21 It should be noted at the outset that the N2 schemes will have no impact on intra-Border connectivity. The same can be said of the improvements of the A5 south of Omagh, as such improvements would do little to improve the connectivity of key towns within the area. The improvement with the biggest impact would be the dualling of the A5 between Strabane and Omagh, as it would benefit a number of key towns. The A5 New Buildings to Derry / Londonderry scheme would also be beneficial but the impacts would be more focused on the trips to and from the Derry / Londonderry.

Scheme Prioritisation

8.3.22 The appraisal of the proposed options against the Transport Planning Objectives and government criteria provide the basis for a prioritisation of schemes. This prioritisation advances the schemes that best address the problems in the transport system as expressed by the Transport Planning Objectives.

8.3.23 The recommended prioritisation is as follows:

- **Priority 1:** Dualling of the A5 between Derry / Londonderry and Ballygawley, followed by Ballygawley to Aughnacloy, including the A5 link between the N14 / N15 at Strabane;
- **Priority 2:** Improvements to the N14 between Lifford and Letterkenny, linking into the new A5 at Strabane;
- **Priority 3:** Improvements to the N2 between the Border and Castleblayney; and
Priority 4: Dualling of the N2 between Ardee and Ashbourne, including the Slane Bypass. An alternative to this scheme, from a Border area perspective, would be to upgrade the N33 between Ardee and Charle ville, providing a direct link to the M1.

8.3.24 In addition in the interests of strengthening the ‘Linked Gateway’ designation of Letterkenny and Derry / Londonderry, it should be a longer-term aspiration to upgrade the N13 to dual carriageway.

8.4 A4 / N16 Corridor

8.4.1 This section appraises and prioritises the options identified as part of the A4 / N16 corridor. As with the A5 / N2 corridor, it must again be recognised that the aim is develop a high quality link from Sligo all the way to the major interchange at Ballygawley. Therefore, we would again envisage that the prioritisation set out below relates only to the phasing of improvements and that all of the options will be delivered within a defined timescale.

8.4.2 Table 8.7 below presents the options identified for the A4 / N16 corridor on a west to east basis. These options have been identified via the stakeholder consultation process. Unlike the A5 corridor, the traffic flows on this corridor are well short of the quantum which would be required to trigger consideration of dualling (see Section 6.4) and as such, dual carriageway options have not been considered here.

**Table 8.7 A4 / N16 Corridor Scheme**

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Description</th>
<th>Distance (KM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N16 Sligo to Glencar</td>
<td>Standard single carriageway to extend from the townland of Gortnagrelly at the Sligo / Leitrim county boundary to the existing N15 at Teesan. [NRA – ‘Suspended’]</td>
<td>7.1</td>
</tr>
<tr>
<td>N16 Glencar to Glenfarne, including Manorhamilton Bypass</td>
<td>Realignment of the N16 from the Sligo county boundary to the Cavan county boundary including the Manorhamilton Bypass. [NRA – ‘Suspended’]</td>
<td>35</td>
</tr>
<tr>
<td>N16 Glenfarne to Blacklion</td>
<td>Realignment of N16 from Glenfarne to Blacklion. [NRA – ‘Suspended’]</td>
<td>7.2</td>
</tr>
<tr>
<td>A4 Enniskillen Bypass</td>
<td>Connecting the A4 on each side of Enniskillen by building a bypass to 2 + 1 standard to the south of the town.</td>
<td>3.2</td>
</tr>
<tr>
<td>A4 Fivemiletown Bypass</td>
<td>Construction of a bypass to 2 + 1 standard around Fivemiletown.</td>
<td>3.4</td>
</tr>
</tbody>
</table>

64 [http://www.nra.ie/RoadSchemeActivity/SligoCountyCouncil/N16SligotoGlencar/SchemeName,16440,en.html](http://www.nra.ie/RoadSchemeActivity/SligoCountyCouncil/N16SligotoGlencar/SchemeName,16440,en.html)
65 [http://www.nra.ie/RoadSchemeActivity/LeitrimCountyCouncil/N16GlenfarneGlencar/SchemeName,16481,en.html](http://www.nra.ie/RoadSchemeActivity/LeitrimCountyCouncil/N16GlenfarneGlencar/SchemeName,16481,en.html)
66 [http://www.nra.ie/RoadSchemeActivity/CavanCountyCouncil/N16GlenfarneBlacklion/SchemeName,16537,en.html](http://www.nra.ie/RoadSchemeActivity/CavanCountyCouncil/N16GlenfarneBlacklion/SchemeName,16537,en.html)
68 [http://www.wesleyjohnston.com/roads/a4fivemiletownbypass.html](http://www.wesleyjohnston.com/roads/a4fivemiletownbypass.html)
Appraisal of Options

8.4.3 As with the A5 / N2 corridor, the schemes that offer the greatest benefits are those which offer the greatest reduction in travel times and increase in average speeds between the Border and Belfast and Dublin.

8.4.4 The Table below reviews how the proposed options compare against the Transport Planning Objectives.

**Table 8.8 Appraisal of Options against Transport Planning Objectives**

<table>
<thead>
<tr>
<th>Scheme</th>
<th>TPO1a – Average Speeds to Belfast</th>
<th>TPO1b – Average Speeds to Dublin</th>
<th>TPO2 – Average Speeds – intra Border Area</th>
<th>TPO3 – Safe, well maintained network – inward investment in Border Area</th>
<th>TPO4 – Best Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N16 Sligo to Glencar</td>
<td>++</td>
<td>o</td>
<td>++</td>
<td>**</td>
<td>++</td>
</tr>
<tr>
<td>N16 Glencar to Glenfarne, including Manorhamilton Bypass</td>
<td>++</td>
<td>o</td>
<td>**</td>
<td>**</td>
<td>++</td>
</tr>
<tr>
<td>N16 Glenfarne to Blacklion</td>
<td>+</td>
<td>o</td>
<td>+</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>A4 Enniskillen Bypass</td>
<td>+++</td>
<td>o</td>
<td>+</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>A4 Fivemiletown Bypass</td>
<td>+</td>
<td>o</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Key - +++ Major Benefit / ++ Moderate Benefit / + Minor Benefit / o Neutral / * Minor Disbenefit / ** Moderate Disbenefit / *** Major Disbenefit

8.4.5 The alignment of the N16 / A4 corridor is such that it is primarily relevant in terms of travel between the Border area and Belfast. Very few trips from the Border Area to Dublin would use this corridor in any substantive sense except perhaps as a means to access the N4, N3 or N2.

8.4.6 A recurring theme to emerge during the stakeholder consultation and desk based research was the issue of congestion in Enniskillen. There are severe journey time reliability issues impacting on average speeds and overall connectivity of Enniskillen and the area to the west of the town. As a result, the proposed bypass of Enniskillen performs well in terms of improving travel times and reliability and increasing average speeds. In addition, a bypass would take strategic traffic out of the town potentially improving the long-term viability of the town centre as well as tackling safety and potential air quality issues.

8.4.7 Improving the 35 km stretch of the N16 between Glencar and Glenfarne, which would include a bypass of Manorhamilton, also scores well against the Transport Planning Objectives. This section of the route is of a particularly poor quality – an improved alignment would reduce journey times, increase average speeds and tackle the safety issues on the route. However,
the long-term impact of the improvement would be enhanced with the provision of the Enniskillen bypass.

8.4.8 Improving the Sligo – Glencar and the Glenfarne – Blacklion sections of the N16 would also enhance the general connectivity of the route. The A4 Fivemiletown Bypass would also enhance the quality of the route, but it would have the lowest impact in terms of travel times, average speeds and safety.

8.4.9 Table 8.9 below appraises the proposed A4 / N16 corridor schemes against national transport objectives.

**Table 8.9  Appraisal of Options against Government Criteria**

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Safety</th>
<th>Environment</th>
<th>Economics</th>
<th>Accessibility</th>
<th>Integration</th>
<th>Cost to Govt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>N16 Sligo to Glencar</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>N16 Glencar to Glenfarne, including Manorhamilton Bypass</td>
<td>✔️✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>N16 Glenfarne to Blacklion</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>A4 Enniskillen Bypass</td>
<td>✔️</td>
<td>X</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>A4 Fivemiletown Bypass</td>
<td>✔️</td>
<td>✔️</td>
<td>O</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

Key - ✔️✔️✔️ Major Benefit / ✔️✔️ Moderate Benefit / ✔️ Minor Benefit / o Neutral / X Minor Disbenefit / ✔️✔️ Moderate Disbenefit / ✔️✔️✔️ Major Disbenefit

8.4.10 The A4 Enniskillen Bypass performs well in the context of the government criteria. A bypass would significantly improve the economic connectivity and accessibility of the route, as well as addressing the traffic management issues in Enniskillen town centre.

8.4.11 The series of improvements on the N16 between Sligo and the Border also perform well in terms of government objectives. The highest value improvement would be that between Glencar and Glenfarne, but this would also be the most costly and have the largest environmental impacts. The section between Glencar and Sligo also performs well given its proximity to the Sligo urban area. However, it should again be stressed that the impact of any improvements on the N16 would be amplified by the bypass of Enniskillen.

8.4.12 The A4 Fivemiletown Bypass performs less well against the government objectives but would nonetheless be a valuable improvement when considered on a route wide basis.

8.4.13 It can be argued that improvements to the A4/N16 will do little to promote improved connectivity to Dublin as it is not the obvious route choice for those travelling from the likes of Sligo and Enniskillen. Table 8.10 shows the impact of each scheme in terms of access to Belfast for six Border towns and cities.
8.4.14 The Table demonstrates that improvements along the N16/A4 corridor would have substantial positive impacts in terms of connectivity to Belfast for the gateway town of Sligo. There would also be some minor benefits for Enniskillen.

8.4.15 Table 8.11 shows the position with regards to intra-Border connectivity.

8.4.16 The table shows that improvements to the N16 in particular support intra-Border connectivity, providing improved links from Sligo to other key towns in the area. Schemes to the east of Enniskillen do however offer less of a benefit as A4 is essentially heading out of the Border area, except where one is making a trip to the likes of Armagh, Dungannon or Cookstown.
Scheme Prioritisation

8.4.17 As with the A5 / N2 corridor, we have attempted to undertake a prioritisation based on how each proposed scheme would contribute towards the connectivity of the Border Area, as expressed by the Transport Planning Objectives.

8.4.18 The recommended prioritisation is as follows:

- **Priority 1:** Provision of a bypass of Enniskillen;
- **Priority 2:** Progressive upgrades to the N16, beginning with the section between Glencar and Glenfarne, including the Manorhamilton Bypass, followed by the Sligo to Glencar section and finally the Glenfarne to Blacklion section; and
- **Priority 3:** Provision of a bypass of Fivemiletown.

8.4.19 In addition in the interests of a consistent minimum standard of route, it is recommended that improvements are made to the A4 between Enniskillen and Belcoo.
9 Funding Options

9.1 Overview

9.1.1 The key driver of this study was to develop a case for improved infrastructure in the Border Area. However, underlying any such schemes will be the need to accommodate investment within public sector spending constraints. While it may be possible to lever in some private investment, it is nonetheless inevitable that a significant financial contribution will be required from the public sector in both Northern Ireland and the Republic of Ireland.

9.1.2 This chapter therefore sets out potential high-level options for funding infrastructure improvements. Clearly, the options presented below would require further detailed consideration for any particular scheme investment, but they do nonetheless provide a baseline set of options that could be considered going forward.

9.2 Public Sector

Direct Government Spending

9.2.1 Improvements to transport infrastructure have historically been funded through direct government spending, be that at the national or local authority level. This option involves the public sector procuring contractors to carry out all of the necessary work and funding it through agreed capital allocations from HM Treasury or the Irish Department of Finance.

9.2.2 While such an approach has perhaps been successful in the past, the current economic climate has dramatically limited government funding available for new capital investment. In addition, transport investment can often be seen as a low priority for governments. Large transport projects take many years to progress from the initial concept through to opening, something which is unattractive for politicians whose focus can be more short-term in nature. This is a particularly acute problem during periods of spending reductions, as the focus inevitably shifts onto maintaining (or at least minimising the reduction) spending departments like health, education and social services.

9.2.3 It is therefore likely that there will only be limited sums of public sector investment available for new roads infrastructure in the Border Area.

Bond Financing

9.2.4 An alternative option available to the public sector is to fund investment through the issuing of government bonds. A bond essentially involves the government issuing an ‘I owe you’ to those who purchase the bond, typically institutional investors like pension funds. Each bond purchased would have a redemption date at which the government would pay back the money borrowed as well as the interest accrued on that bond.

9.2.5 Debt-related financing has the benefit of allowing the government to amortise the cost of large investments over long periods, such as 30 or 60 years. In terms of government accounting, the cost switches from the capital account to the revenue account, where it is funded over the conceptual lifetime of the asset.
9.2.6 Bond financing has historically been a very popular source of funding as it allows the construction of large schemes for which the cost is spread over many years, much like a private mortgage. Government bonds typically pay a lower borrowing rate (interest rate) than commercial loans because they are seen as safe investments. This is one of the reasons they are popular with institutional investors looking for a safe place to invest the money of risk averse clients. In short, a government bond issue is typically the cheapest way to fund a scheme outwith direct capital spending.

9.2.7 One major drawback with bond financing is that it is counted against the Public Sector Net Cash Requirement (PSNCR), essentially the government debt. As a result, government’s can only commit to a certain number of bond issues, as they are essentially mortgaging revenues and they raise the level of national debt. Increasing the national debt can unsettle the bond market, with investors demanding a higher return (the bond yield) on their investment because of increased risk of ‘default’ (ie the debt becoming unserviceable). This is what happened in the Republic of Ireland, Greece and other countries in the Eurozone.

9.2.8 By extension, there is therefore limited scope for debt related financing in the Republic of Ireland at present. In addition, bond yields (the cost of government borrowing) are higher than average because of the increased risk of default. This would make any borrowing more expensive.

9.2.9 Northern Ireland is not permitted to issue bonds as they would appear on the PSNCR of the UK Government. HM Treasury would have to do this on behalf of the Northern Ireland Assembly, meaning any Northern Ireland transport schemes would be competing against UK transport and non-transport schemes seeking similar funding.

**European Funding**

9.2.10 The Irish transport network has benefited immensely from European funding over the past 15 or so years. Many of the major highway improvements that have been realised have been at least part funded by the European Union.

9.2.11 While in the long-term, access to European funding is declining for Ireland, there are still significant opportunities for the Border Area in the short-term. These include:

- **INTERREG V** – this forthcoming funding stream may offer opportunities for funding under the category of strategic cross border need. Details on the exact make-up of INTERREG V are patchy at present but ICBAN should keep abreast of opportunities that could emerge through this funding scheme;

- **European Social Fund (ESF)** – structural fund designed to reduce the differences in living standards between the people and regions of the EU; and

- **European Regional Development Fund (ERDF)** – Structural fund which concentrates on promoting economic and social cohesion within the European Union through the reduction of imbalances between regions or social groups through infrastructural investments.

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9.2.12 It is unclear at present how much funding would be available through these programmes but their potential should be fully investigated in any further appraisal of options.

9.3 Private Sector

9.3.1 With the current constraints on public sector funding, the leveraging of private sector investment is becoming increasingly prominent.

Public Private Partnerships

9.3.2 The Public Private Partnership (PPP) is a relatively old concept but it has assumed increasing prominence over the past 15 years. PPP agreements take various forms but the most commonly adopted version for transport schemes has been the Private Finance Initiative (PFI) / Design, Build, Finance and Operate (DBFO), which is discussed in more detail below. Note – for ease of reference, the term DBFO is used going forward.

9.3.3 The principle behind the DBFO concept is that a firm or consortia of firms will submit a tender to the government for a concession to design, build, finance and operate an infrastructure project on that government’s behalf. The contract that the private firm / consortia signs should set out very clearly what must be delivered and the various service level agreements (or equivalent) for that asset.

9.3.4 The private sector firm / consortia will thereafter meet the full up-front cost of building the new asset and will also pay to operate and maintain that asset over its assumed lifetime (often 30-60 years). They will recoup their costs through an annual charge levied on government. In order to ensure appropriate incentives are in place to ensure a good quality build and effective maintenance and operation, the annual fee the government pays would be tied to the equivalent of a service level agreement. If the operator falls below standard, they will be paid less than their costs (ie a penalty fine) and if they perform above expectations, they will be paid more than their costs (ie rewarded). At the end of the concession period, the private firm / consortia would hand the asset back to the government as it will have been paid in full.

9.3.5 There are two major benefits of a well specified DBFO contract. Firstly, by moving the cost from the capital to the revenue budget, it allows the government to spread the cost of major projects over a long time period, better equating the costs with the benefits. It also allows the government to transfer much of the risk associated with the design and build to the private sector, lessening exposure to large cost-over-runs. However, one must accept that private bidders will include the price of this risk within their bid – it just caps the liability of government (although this has not always been the case in practice).

9.3.6 Despite these benefits, DBFO and other similar contracts have been heavily criticised in recent years. An important issue is that they mortgage the cost of a scheme against future tax receipts, although as noted above, this does result in a better temporal balance between the costs and the benefits of a scheme.
9.3.7 DBFO is also often seen as expensive. The fundamental assumption underlying the DBFO process is that the private sector can design, build, finance and operate a scheme more efficiently than the public sector, which is not in itself a given. The private sector has to include an acceptable return on capital in order to raise the necessary funds and its rate of borrowing is also well in excess of that of the government. In addition, the contracts for DBFO are extremely expensive and difficult to draw up, giving rise to very high transaction costs. It is also an expensive and arduous process for government to monitor the performance indicators agreed in the contract.

9.3.8 To date, the DBFO process has delivered mixed results with transport infrastructure. There have been some notable successes but there have also been some particularly poor outcomes, such as the London Underground scheme. Early DBFO schemes were generally poorly procured but experience has led to better procurement and lower costs. Both NI Roads Service and NRA have operated or or operating PPP schemes to deliver strategic road improvements. Roads Service has used two separate packages to deliver significant, (untolled) dual carriageway and motorway upgrades in combination with wider route maintenance responsibilities. NRA has undertaken PPP to deliver tolled infrastructure such as the M1 Boyne Bridge. However the latest NRA PPP schemes are untolled and include payments made on the basis of level of service.

9.3.9 The current Scottish Government, which is fundamentally opposed to DBFO type schemes, is currently running an alternative scheme known as the Scottish Futures Trust (SFT). The SFT operates on the same principle as DBFO but caps the level of operator return. While this may theoretically be an appealing proposition, anecdotal evidence suggests that investors do not find the limited return to be particularly attractive.

Developer Contributions

9.3.10 The UK and Ireland currently make extensive use of developer contributions. This is the process where a developer must pay for transport improvements to mitigate the extra traffic generated by that development. Transport modelling techniques are now sufficiently sophisticated to enable assessment of the required cumulative mitigation measures of local or regional development plan.

9.3.11 It can be argued that improvements to transport in the Border Area will lead to new residential and commercial developments adjoining these improvements as the economy recovers. The extent of these developments is unclear but it is nonetheless likely that at least some of the costs of improvements could be recouped through developer contributions. However these contributions historically are levied to fund local, as opposed to these more strategic schemes.

9.4 User Charges - Tolling

9.4.1 In terms of equity, there is an argument that the direct beneficiaries of new transport infrastructure should pay for its use, either through road tolling / pricing or the farebox.
9.4.2 Tolls are not uncommon in Ireland and Europe but they are far less common in Great Britain and unused in Northern Ireland. Indeed, in GB, they are largely restricted to major estuarial crossings, which are expensive to build and maintain.

9.4.3 Road tolling may be one means of recouping the costs of transport improvements in the Border Area. However, given the socio-economic nature of this study, one would have to question the value of building new infrastructure and then charging for its use.

9.4.4 In addition, improvements to roads like the A5 are planned as offline dual carriageways. If these improved routes are tolled, there then becomes an incentive for drivers to switch back to the old road, lessening the benefits of the new route and compromising its economic viability.

9.5 Summary

9.5.1 In summary, there are a number of potential funding options available for developing new transport infrastructure in the Border Area. The choice of funding mechanism will ultimately be a political decision. However, ICBAN may wish to further develop the above options to further assist their case for new transport infrastructure.
10 Conclusions and Recommendations

10.1 Overview

10.1.1 This report has set out the need for a step-change in investment in the transport infrastructure of the Border Area of the island of Ireland. Crucially, the analysis has demonstrated that the major Border area towns compare poorly with other cities and major towns in terms of accessibility.

10.1.2 Investment in the transport infrastructure of the Border area has also significantly lagged that of other regions of the Republic of Ireland in particular. While a number of investment programmes have been committed in principle, they have not been implemented as yet and current economic pressures create uncertainty in terms of the long-term likelihood of funding. The effect of this is the increasingly rapid creation of a ‘three speed’ economy across the island, led by the city-regions of Belfast and Dublin, followed by the regions well connected to these city-regions by high quality motorways and dual carriageways and, lastly, the Border area.

10.2 The Impact of Poor Connectivity

10.2.1 It is clear that poor transport connectivity is having a negative impact on the economic performance of the Border Area. Long and often unreliable journey times have an impact on business competitiveness and make the Border Area a less attractive location for both indigenous growth and foreign direct investment. Indeed, there is anecdotal evidence to suggest that the majority of Border Area firms are owned either by local people or those who have a historic connection to the area, further illustrating the lack of inward investment.

10.2.2 In macroeconomic terms, the Border area has been shown to perform poorly when compared with other areas of Ireland. Key headlines include:

- economic productivity lags behind the national average;
- there is a lower share of high value economic sectors, and a higher share of manufacturing and construction sectors, both of which are being badly hit by the current economic downturn;
- there is also a ‘brain drain’ of young and talented people from the Border Area; and
- the Border Area has a lower GVA per capita than other regions of the Republic of Ireland.

10.2.3 Transport in itself cannot of course resolve all of the Border area’s economic difficulties. Any infrastructure improvements would need to be accompanied by investment in communications technology, industrial premises and skills development. Indeed, the long-term development of the area may be best supported by designating it as an enterprise area – ie a Border Development Zone. Nonetheless, improved transport improvements are a central element of any such economic stimulus package in that they can assist in:

- improving business confidence in the future of the Border Area;
- encouraging the skilled pool of workers currently resident to remain;
facilitating and supporting the regeneration of the local and national economy, helping it recover from the current downturn;

- assisting in the development of indigenous industries;

- creating a better environment for business investment, lessening the dependence on the shrinking public sector;

- assisting in maintaining the social and economic fabric of the Border area; and

- reducing the perception of peripherality, particularly amongst tourists and businesses.

10.3 Developing the Border Area Transport Network

10.3.1 The analysis provided in this report has set out a clear case for investment in transport in the north-west of Ireland. As such it is clear that the transport network in the Border Area is incomplete and requires significant investment to bring it up to a 'fit for purpose' standard.

Understanding the Problems

10.3.2 Journey times and average speeds between Border towns and both Belfast and Dublin compare unfavourably with other similar areas of the island of Ireland.

- average speeds from the Border Area towns to Dublin is 71kph, compared to 85kph from the other towns; and

- average speeds from the Border Area towns to Belfast is also 71kph, compared to 76kph from the other towns.

10.3.3 This difference in speeds is largely down to poorer quality road standards. There is little in the way of high quality dual carriageway or motorway standard road links in the Border area or its key external links. The N16 in particular is of a very poor standard and is below the standard that would reasonably be expected of a National Road. The physical infrastructure problems are being compounded by a lack of public transport, poor travel information and little route-based information. Strategic traffic is also mixing with local traffic and a lack of overtaking opportunities thus gives rise to unreliable journey times, driver frustration and safety issues.

10.3.4 There is also compelling evidence to suggest that the Border area has not received its fair share of infrastructure investment compared to other areas. For example, a review of NRA investment in road schemes suggests that spending per head on transport infrastructure in the Border Area is only around 45% that of other Irish regions. This a key point – if this disproportionate spending pattern continues, the Border Area will fall further behind economically, amplifying the issue of a three speed economy.

Addressing the Problems

10.3.5 As part of this study, we have established a clear set of guiding principles that should be used to shape future investment. First and foremost, it is not unreasonable to suggest that National / Trunk roads should be upgraded to meet the minimum standard that would be expected for that type of road. As noted above, this is particularly true of the N16, which falls well below the standard that would be expected of a strategic inter-urban corridor.
10.3.6 More generally, there should be a clear goal of working towards the equalisation of average inter-urban travel speeds between key Border towns and the economic growth poles of Belfast and Dublin. The road network should also be safe, efficient and well maintained, ultimately meeting the needs and expectations of both business and leisure travel.

**Future Priorities**

10.3.7 It became evident very early in the process that stakeholders see the development of two transport corridors within the Border Area as their priority:

- **A5 / N2** between Derry / Londonderry, Aughnacloy and onwards to Dublin. Included within this overall corridor plan were suggested improvements to links with Letterkenny along the N14 and N13 corridors; and
- **A4 / N16** between Sligo and Ballygawley.

The research undertaken as part of this study clearly identified the importance of *both corridors in supporting the future economic prosperity of the Border Area*. One should not read the analysis as A5 / N2 versus A4 / N16 as the reality is that both corridors will have to be improved if the Border Area is to realise its goal of sustainable and balanced economic development. It is in the interests of all stakeholders to **work together** in realising improvements on both the east-west and north-south axes.

10.3.8 In the long-term, ICBAN should look towards a time-specific commitment to improve both corridors along their entire length. This research has prioritised these improvements for each corridor:

- **A5 / N2:**
  - **Priority 1:** Dualling of the A5 between Derry / Londonderry and Ballygawley, followed by Ballygawley to Aughnacloy, including the A5 link between the N14 / N15 at Strabane;
  - **Priority 2:** Dualling of the N14 between Lifford and Letterkenny, linking into the new A5 at Strabane;
  - **Priority 3:** Improvements to the N2 between the Border and Castleblayney;
  - **Priority 4:** Dualling of the N2 between Ardee and Ashbourne, including the Slane Bypass (Note that an alternative to this scheme, from a Border area perspective, would be to upgrade the N33 between Ardee and Charleville, providing a direct link to the M1.); and
  - **Other:** Dualling of the N13 between Letterkenny and Derry / Londonderry. This will strengthen the Linked Gateway designation of Letterkenny and Derry / Londonderry and also facilitate the operation of express coach services.

- **A4 / N16:**
  - **Priority 1:** Provision of a bypass of Enniskillen;
  - **Priority 2:** Progressive upgrades to the N16, beginning with the section between Glencar and Glenfarne, including the Manorhamilton Bypass, followed by the Sligo to Glencar section and finally the Glenfarne to Blacklion section;
  - **Priority 3:** Provision of a bypass of Fivemiletown; and
10.3.9 These improvements are summarised in Figure 10.1 below. The dark blue lines represent the principal recommended improvements identified in this report. In addition the roads linking the principal Border Area towns should be reviewed and improved in order that the target average inter-urban speed of 80 kph is achievable.
10.3.10 The improvements include extensive upgrades to the A4 / N16 and A5 / N2 corridors providing the following linkages to a high standard:

- Sligo – Enniskillen – A5 (Ballygawley) – Dungannon and onwards to Belfast and Larne;
- Letterkenny and Derry / Londonderry – Strabane – Omagh – A4 (Ballygawley) – Monaghan and onwards to Dublin.

10.3.11 The improvements also include a network of inter-urban links providing connectivity between the key designated towns in the Border Area. These links should be reviewed and improved in order that the target average inter-urban speed of 80 kph is achievable.

10.4 Additional Recommendation

10.4.1 One additional recommendation to emerge from this research is the need for a programme of consistent data collection for the Border area, both socio-economic and transport related. A weakness in any analysis of the Border area stems from the different datasets, reporting standards and traffic data used in Northern Ireland and the Republic of Ireland. This should be an immediate priority as it would assist in more fully developing the case for continuing improvements to the A5/N2 and A4/N16.
## Appendix A – Consultation Invitees

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About Your Organisation

1. Your Organisation:
2. Organisation’s Role:
3. Your Name:
4. Your Position:
5. Your contact details:

Would you be willing to take part in a follow-up phone call to expand upon your answers if necessary?

1. Yes
2. No

Following consideration of the stakeholder responses, MVA Consultancy will be leading a Workshop to discuss the emerging findings. Please indicate your preferred venue; you will be sent additional details closer to the date:

3. Enniskillen on the afternoon of Thursday 26th April
4. Letterkenny on the morning of Friday 27th April

Which Route or Routes does your organisation have an interest in? Please Tick

5. A5 Derry - Aughnacloy
6. N2 Monaghan – Aughnacloy
7. N14 – Lifford – Letterkenny
8. N16 Sligo – Border
9. A4 Border – Aughnacloy
10. All five Routes

For each Route of interest, please answer the subsequent questions on the appropriate sheet
**A5 Derry - Aughnacloy**

What are the **Current Problems** on the Route relevant to your Organisation?

1. Travel time
2. Safety
3. Other

How will the dualling of the Route assist the **economy** of the border region?

4. Attract new Foreign Direct Investment
5. Allow local businesses to grow through efficiencies
6. Encourage tourists to travel further into region
7. Other

Any **other priority initiatives** which must complement road improvements to the Route to assist economy?

8. Public transport improvements
9. Business development activities
10. Third-level education or health
11. Other

Might there be any **risks to the economy** of the border region of improving the Route?

12. Outward commuting
13. Competition from businesses outside the region
14. Other

15. Any other comments you wish to make
N2 Monaghan – Aughnacloy

What are the **Current Problems** on the Route relevant to your Organisation?

1. Travel time
2. Safety
3. Other

What will be the **Future Problems** on the Route relevant to your Organisation?

4. Travel time
5. Safety
6. Other

What **improvements** would you like to see on the Route and why?

7. High grade dual carriageway
8. Selective upgrades – bypasses, widening, junction rationalisation
9. Traffic management in town centres
10. Other road or traffic improvements

If the Route was improved in sections, how would you **prioritise** which section first?

11. Safety
12. Travel times
13. Open up development lands
14. Other

How will improvements to the Route assist the **economy** of the border region?

15. Attract new Foreign Direct Investment
16. Allow local businesses to grow through efficiencies
17. Encourage tourists to travel further into region
18. Other

Any **other priority initiatives** which must complement road improvements to the Route to assist economy?

19. Public transport improvements
20. Business development activities
21. Third-level education or health
22. Other

Might there be any **risks to the economy** of the border region of improving the Route?

23. Outward commuting
24. Competition from businesses outside the region
25. Other

26. **Any other comments you wish to make**
N14 – Lifford – Letterkenny

What are the **Current Problems** on the Route relevant to your Organisation?

1. Travel time
2. Safety
3. Other

What will be the **Future Problems** on the Route relevant to your Organisation?

4. Travel time
5. Safety
6. Other

What **improvements** would you like to see on the Route and why?

7. High grade dual carriageway
8. Selective upgrades – bypasses, widening, junction rationalisation
9. Traffic management in town centres
10. Other road or traffic improvements

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13. Open up development lands
14. Other

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16. Allow local businesses to grow through efficiencies
17. Encourage tourists to travel further into region
18. Other

Any **other priority initiatives** which must complement road improvements to the Route to assist economy?

19. Public transport improvements
20. Business development activities
21. Third-level education or health
22. Other

Might there be any **risks to the economy** of the border region of improving the Route?

23. Outward commuting
24. Competition from businesses outside the region
25. Other

26. Any other comments you wish to make
**N16 Sligo – Border**

What are the **Current Problems** on the Route relevant to your Organisation?

1 Travel time
2 Safety
3 Other

What will be the **Future Problems** on the Route relevant to your Organisation?

4 Travel time
5 Safety
6 Other

What **improvements** would you like to see on the Route and why?

7 High grade dual carriageway
8 Selective upgrades – bypasses, widening, junction rationalisation
9 Traffic management in town centres
10 Other road or traffic improvements

If the Route was improved in sections, how would you **prioritise** which section first?

11 Safety
12 Travel times
13 Open up development lands
14 Other

How will improvements to the Route assist the **economy** of the border region?

15 Attract new Foreign Direct Investment
16 Allow local businesses to grow through efficiencies
17 Encourage tourists to travel further into region
18 Other

Any **other priority initiatives** which must complement road improvements to the Route to assist economy?

19 Public transport improvements
20 Business development activities
21 Third-level education or health
22 Other

Might there be any **risks to the economy** of the border region of improving the Route?

23 Outward commuting
24 Competition from businesses outside the region
25 Other

26 Any other comments you wish to make
A4 Border – Aughnacloy

What are the **Current Problems** on the Route relevant to your Organisation?

1. Travel time
2. Safety
3. Other

What will be the **Future Problems** on the Route relevant to your Organisation?

4. Travel time
5. Safety
6. Other

What **improvements** would you like to see on the Route and why?

7. High grade dual carriageway
8. Selective upgrades – bypasses, widening, junction rationalisation
9. Traffic management in town centres
10. Other road or traffic improvements

If the Route was improved in sections, how would you **prioritise** which section first?

11. Safety
12. Travel times
13. Open up development lands
14. Other

How will improvements to the Route assist the **economy** of the border region?

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16. Allow local businesses to grow through efficiencies
17. Encourage tourists to travel further into region
18. Other

Any **other priority initiatives** which must complement road improvements to the Route to assist economy?

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20. Business development activities
21. Third-level education or health
22. Other

Might there be any **risks to the economy** of the border region of improving the Route?

23. Outward commuting
24. Competition from businesses outside the region
25. Other

26. **Any other comments you wish to make**
All Five Routes

What are the **Current Problems** on the Route relevant to your Organisation?

1. Travel time
2. Safety
3. Other

What will be the **Future Problems** on the Route relevant to your Organisation?

4. Travel time
5. Safety
6. Other

What **improvements** would you like to see on the Route and why?

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15. Attract new Foreign Direct Investment
16. Allow local businesses to grow through efficiencies
17. Encourage tourists to travel further into region
18. Other

Any **other priority initiatives** which must complement road improvements to the Route to assist economy?

19. Public transport improvements
20. Business development activities
21. Third-level education or health
22. Other

Might there be any **risks to the economy** of the border region of improving the Route?

23. Outward commuting
24. Competition from businesses outside the region
25. Other

26. Any other comments you wish to make
<table>
<thead>
<tr>
<th>Publisher</th>
<th>Title</th>
<th>General</th>
<th>Economics</th>
<th>Transport</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRA - 2010</td>
<td>N2 Clontibret to Border – Constraints Study</td>
<td>Engineering study</td>
<td>Refers to national policies / strategies</td>
<td>Limited relevance</td>
<td>Explores physical constraints for new road</td>
</tr>
<tr>
<td>Sligo CC and Fermanagh DC</td>
<td>Analysis of Need for Up-Grading of N16-A4 Arterial Route (PQCS)</td>
<td>Includes a review of previous studies, a socio-economic review and a summary of consultation</td>
<td>Includes socio-economic review in corridor (Cavan Leitrim Sligo and Dungannon Fermanagh)</td>
<td>Includes reference to NRDO studies in N16 and roads in local development plans</td>
<td>Limited business statistics and no quantification or analysis of transport need</td>
</tr>
<tr>
<td>NRA</td>
<td>Donegal National Roads Design Office</td>
<td>Engineering study of route options.</td>
<td>Cost estimate €60m approx Benefit Cost Ratio = 0.6</td>
<td>Standard single carriageway, total width 18.3 metre. Year 2027 traffic estimated as 5232 vehicles AADT</td>
<td>Economic impact rated neutral, it is recommended that the possibility of EU funding be explored further.</td>
</tr>
<tr>
<td>NRA</td>
<td>Donegal National Roads Design Office</td>
<td>Engineering study of route options. 1998 National Roads Needs Study rated Phase 2 (medium need)</td>
<td>Cost estimate €30m approx Benefit Cost Ratio = 1.0</td>
<td>Standard single carriageway, total width 18.3 metre. Year 2027 traffic estimated as 8120 vehicles AADT</td>
<td>Economics recorded as poor however &quot;should (therefore) not be viewed solely on economic terms&quot;.</td>
</tr>
<tr>
<td>NRA</td>
<td>Donegal National Roads Design Office</td>
<td>Engineering study of route options. 1998 National Roads Needs Study rated Phase 4 (lowest need)</td>
<td>Cost estimate €35m approx Benefit Cost Ratio = 1.0</td>
<td>Standard single carriageway, total width 18.3 metre. Existing traffic estimated as 2730 vehicles AADT</td>
<td>Economics recorded as poor however &quot;should (therefore) not be viewed solely on economic terms&quot;.</td>
</tr>
<tr>
<td>Dept for Regional Development</td>
<td>Investment Delivery Plan for Roads 2008/9 – 2017/8</td>
<td>Road schemes in NI in line with ISNI2.</td>
<td>Includes committed dates: A4 Dungannon / Ballygawley; A4 Annaghilla and A5 Tullyvar; A32 Cherrymount Link, Enniskillen; Includes committed future: A5/N14 Strabane – Lifford Link A6 Derry / Dungiven Dual Carriageway A5 Derry / Aughnacloy A8 Larne</td>
<td>Only partly completed. A5 overtaken by funding events in RoI.</td>
<td></td>
</tr>
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<tr>
<td>NI Roads Service</td>
<td>A5 WTC: Macro-Economic Study (ECOTEC 2009)</td>
<td>Includes: economic profiling of corridor, telephone surveys of businesses, consultations with key stakeholders and modelling of wider economic impacts. Estimated benefit of £143 million due primarily to agglomeration economies centred in Londonderry, Omagh and Strabane.</td>
<td>Assumed upgrading of A5 between Londonderry and Aughnacloy</td>
<td>Not fully incorporated into Mouchel’s economic appraisal results presented to Public Inquiry</td>
<td></td>
</tr>
<tr>
<td>NI Roads Service</td>
<td>A4 Enniskillen Bypass Stage 1 Assessment Report</td>
<td>Corridor assessment (inner and outer) for southern bypass of Enniskillen</td>
<td>Scheme cost £20m – £30m depending on variant. Inner corridor provides BCR of 2 approx and is preferred</td>
<td>2+1 carriageway. Gives significant relief to town centre and carries approx 9000 vehicles (AADT) at 2019</td>
<td>Further engineering and environmental studies plus statutory procedures needed.</td>
</tr>
<tr>
<td>NI Roads Service</td>
<td>A4 Fivemiletown Bypass – Public Information Brochure (November 2009)</td>
<td>Initial assessment considering all possible alignment corridors</td>
<td>None provided</td>
<td>2+1 carriageway of 3.4 km in length. Gives significant relief to town centre and provide overtaking opportunities</td>
<td>Engineering, and environmental studies plus economic appraisal needed.</td>
</tr>
</tbody>
</table>
A project supported by the European Union’s INTERREG IVA Programme, managed by the Special EU Programmes Body and delivered by

the Irish Central Border Area Network in partnership with the North West Region Cross Border Group.