

Roads Service

---

**A8 Belfast to Larne  
Dual Carriageway  
(Coleman's Corner to  
Ballyrickard Road)**

---

Stage 1 Assessment  
Report - Addendum

ISSUE 1



Roads Service

---

**A8 Belfast to Larne  
Dual Carriageway  
(Coleman's Corner to  
Ballyrickard Road)**

---

Stage 1 Assessment  
Report - Addendum

Ballynure Online Options

March 2010

**Ove Arup & Partners Ltd**

The Linenhall, 8<sup>th</sup> Floor, 32-38 Linenhall Street, Belfast, BT2 8BG  
Tel +44 (0)28 9089 0900 Fax +44 (0)28 9089 0901  
[www.arup.com](http://www.arup.com)

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party



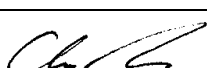
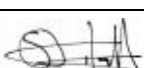
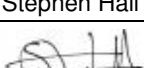
Job number 124785



Job title	A8 Belfast to Larne Dual Carriageway (Coleman's Corner to Ballyrickard Road)	Job number	124785
-----------	--	------------	--------

Document title	Stage 1 Assessment Report - Addendum	File reference	
----------------	--------------------------------------	----------------	--

Document ref

Revision	Date	Filename	Report.doc		
Draft 1	17/02/10	Description	First draft		
			Prepared by	Checked by	Approved by
		Name	Chris Furneaux	John McGill/ Stephen Hall	Stephen Hall
		Signature			
Final Draft	26/03/10	Filename	Stage 1 Addendum Ballynure Online Options Final Draft.doc		
		Description			
			Prepared by	Checked by	Approved by
		Name	Chris Furneaux	Phil Hall/Stephen Hall	Stephen Hall
Signature					
Issue 1	30/03/10	Filename	Stage 1 Addendum Ballynure Online Options ISSUE 1.doc		
		Description			
			Prepared by	Checked by	Approved by
		Name	Chris Furneaux	Simon Lawrence/ Stephen Hall	Stephen Hall
Signature					
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			

Issue Document Verification with Document



## Contents

	Page
Executive Summary	i
1 Introduction	1
1.1 Background to the Scheme	1
1.2 Background to this Report	1
1.3 Scheme Assessment Process	2
1.4 Stage 1 Assessment	2
1.5 Public Consultation Comments	4
1.6 Purpose of this Report	5
1.7 Structure of the Report	5
2 Review of the Stage 1 Assessment of Corridor 1	6
2.1 Environment Objective	6
2.2 Safety Objective	7
2.3 Economy Objective	8
2.4 Accessibility Objective	9
2.5 Integration Objective	10
2.6 Conclusion	11
3 Summary of the Impact of Corridor 1 on Ballynure	12
3.1 Key Impacts	12
4 Review of Alternative Strategies through Ballynure	14
4.1 Alternative Strategies through Ballynure	14
4.2 Option 2 – At-grade solution for the A8 with junctions at both ends	15
4.3 Option 3 – At-grade solution for the A8 with a roundabout in Ballynure	15
4.4 Option 4 – At-grade solution for the A8 with a bridge/underpass connection in Ballynure	16
4.5 Option 5 – Viaduct solution for the A8	17
4.6 Option 6 – Underpass/cutting solution for the A8	18
4.7 Conclusion	19
5 Economic Impact on Ballynure	21
5.1 Existing Economy	21
5.2 Proposed Access to Ballynure with the Preferred Route	21
5.3 Proposed Access Arrangements with an Online Scheme	22
5.4 Conclusion	22
6 Summary and Conclusions	23

## Tables

Table 4.1: Summary of Online Options Comparison to Option 1 (Corridor 1)

## Figures

Figure 1.1: Ballynure Corridor Options

## Appendices

Appendix A

Engineering Plans

## Executive Summary

A review of the Stage 1 Assessment for the A8 Belfast to Larne Dual Carriageway (Coleman's Corner to Ballyrickard Road) has been undertaken. The review considered whether the Stage 1 Assessment had appropriately considered the benefits and disbenefits of an online scheme. It considered the impact of additional, more detailed, information collected and obtained during the Stage 2 Assessment on the Stage 1 recommendations, particularly in relation to the decision to reject the option of online dualling through the village of Ballynure. The review also provided a summary of the impact on Ballynure of an online widening scheme.

The review considered a comprehensive range of options for online dualling through Ballynure to establish whether a better performing option might exist to the one assessed, and rejected, at Stage 1. These options were assessed against additional information now available from more detailed surveys, ground investigations and further public consultation. The economic impact and access arrangements for an online and the various bypass options were also reviewed to identify whether any option would perform significantly better in terms of impact on the village.

The assessment concluded that none of the alternative online dualling options through Ballynure performed as well as the original option assessed at Stage 1 (at-grade solution with a signalised junction and 40mph speed restriction). This therefore validates the original Stage 1 Assessment in the regard that the correct design was considered in the study. Further, the re-assessment of the online dualling option through Ballynure against the additional information now available did not change the outcome of the assessment process, and confirmed the online dualling through Ballynure was correctly rejected at Stage 1. Finally, the review of the economic impact and access arrangements indicated a greater impact on access to Ballynure and local businesses with an online option.

This review of the Stage 1 Assessment has therefore confirmed the original recommendations that an online dualling solution through Ballynure would not perform as well as the bypass options. Based upon the outcome of this review of the Stage 1 study, Roads Service is satisfied the Preferred Route for the A8 Dualling announced by the Minister for Regional Development in August 2009 is the correct route and continues to progress the scheme.



# 1 Introduction

## 1.1 Background to the Scheme

---

The Northern Ireland Regional Development Strategy (RDS) identifies Larne as one of the five major inter-regional gateways in Northern Ireland, and promotes the aim to *'continue to develop the Port of Larne which is the second largest Northern Ireland port, specialising in roll-on/roll off traffic and offering the shortest sea crossings to Scotland.'*

The RDS is supported by a 10-year Regional Transport Strategy 2002-2012 (RTS) which is being progressed through Transport Plans including the Belfast Metropolitan Transport Plan (BMTP). BMTP outlines *'...that options to complete the dualling of the A8 are retained.'*

The Investment Strategy for Northern Ireland 2008-2018 (ISNI) and Investment Delivery Plan for Roads (IDP), includes a number of key goals and includes *'opening the A5 and remaining sections of the A8 dualling schemes during the life of the strategy'* as one of the milestones in working toward those goals. The IDP has therefore defined the scheme to dual the remaining 14km section of the A8, between Coleman's Corner and B100 (Ballyrickard Road), to be within the Roads Service Preparation Pool and estimates delivery of scheme between 2013/14 to 2017/18.

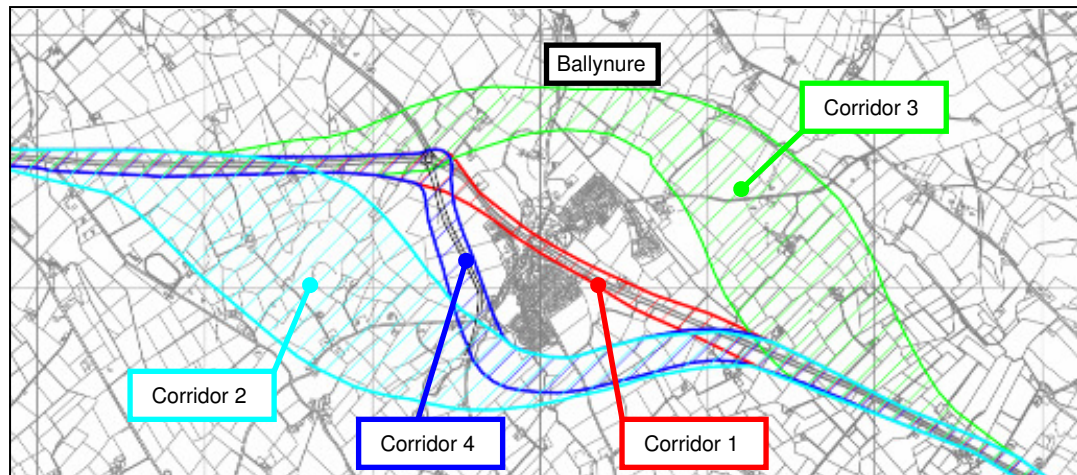
In November 2007 Roads Service issued the project brief 'A8 Route Corridor Study Consultancy Services'. This brief outlined the Roads Service requirements to deliver the A8 Belfast to Larne Dual Carriageway. Arup was commissioned to undertake a Stage 1 (preferred corridor) and Stage 2 (preferred route) Scheme Assessment, leading to the recommendation of a preferred route for the A8 Dual Carriageway.

The Stage 1 corridor study was concluded in November 2008, and the findings presented to the public via a two-day public consultation event. The Stage 1 Assessment recommended two corridor options be taken forward into Stage 2 for further, more detailed assessment, which would lead to a preferred route for the scheme. The Stage 2 route study was concluded in August 2009 with the announcement of the 'Preferred Route'. The announcement was followed by a two-day Public Exhibition.

## 1.2 Background to this Report

---

The Stage 1 Assessment for the A8 Belfast to Larne Dual Carriageway considered eight corridors for the proposed dual carriageway, which encompassed four different corridor options in the region of the village of Ballynure (as shown on Figure 1.1). The four corridors considered at Ballynure included an online option through the village, a bypass to the west and a bypass to the east of the village, and a fourth corridor that reused and widened the existing Carrickfergus link road with an extension to the north completing the bypass of the village.



**Figure 1.1: Ballynure Corridor Options**

Following the Preferred Route announcement in August 2009 a number of local landowners and residents provided comments outlining that they believed the preferred route should have followed the line of the existing A8 through the village. This report is a review of the work undertaken as part of the Stage 1 Scheme Assessment to consider those comments.

### 1.3 Scheme Assessment Process

The scheme assessment for this road improvement proposal has been being carried out in accordance with the requirement of the Department for Transport's (DfT) web-based *Transport Analysis Guidance* (WebTAG) and the Design Manual for Roads and Bridges (DMRB), specifically TD 37/93, Scheme Assessment Report and Volume 11 for the environmental assessment. The DMRB is published by Her Majesty's Stationary Office and is applicable in Northern Ireland.

The scheme assessment process typically involves a three stage approach:

- Stage 1 assessment – a largely desk-based exercise making use of published information and a series of initial site visits and surveys, information collection and review, identification and mapping of constraints and liaison with relevant departments and stakeholders. The preliminary assessment is conducted at the “broadly defined route corridor” level. The output of Stage 1 is normally the recommendation of a preferred corridor to be taken forward to Stage 2.
- Stage 2 assessment – this involves a more detailed assessment including surveys to identify the key effects and factors to be taken into account when selecting and comparing alignments. This requires the application of a formal multi-criteria assessment approach to assist in the identification and selection of a preferred route alignment. The output of Stage 2 is the Preferred Route alignment.
- Stage 3 assessment – this involves further design development of the Preferred Route. This stage of assessment requires completion of an environmental impact assessment and the preparation of an environmental statement. In addition, the production of draft vesting and direction orders will be required.

### 1.4 Stage 1 Assessment

The Stage 1 Assessment that was carried out for the A8 Belfast to Larne Dual Carriageway considered environmental, engineering, economic and traffic advantages, disadvantages and constraints associated with a range of broadly defined improvement strategies. As stated previously the study was undertaken in accordance with the DMRB TD 37/93 and WebTAG, which is based upon the New Approach to Appraisal (NATA) web based Transport Assessment Guidance introduced by the Government's 1998 White paper “A New Deal for Transport : Better for Everyone”. This is the recommended basis for the appraisal of

road schemes throughout the UK. Throughout the NATA process, the Government's five objectives for transport are central:

- Environment,
- Safety,
- Economy,
- Accessibility, and
- Integration.

The Stage 1 Assessment for the A8 included Corridor 1 which was an online option that would widen the existing A8 along the length of the scheme, including the section of the A8 through Ballynure. The Stage 1 Assessment of Corridor 1 was based upon assessing the best performing improvement strategy possible within that corridor in accordance with the five objectives for transport. This was assessed to be an at-grade dual carriageway with a signalised junction in the centre of the village to cater for traffic leaving and joining the A8 from Lismenary Road and Riverside. The corridor was assessed against the Government's five key objectives for transport, but was found to perform poorly in comparison to the other corridors which bypassed Ballynure (Corridors 2 and 3). Corridor 1 was therefore rejected at Stage 1 and not taken forward into the more detailed Stage 2 Assessment.

A summary of the key aspects of the Stage 1 Assessment for Corridor 1 is provided below:

- **Environment** – The environmental assessment demonstrated little overall environmental difference between Corridor 1 and the off-line corridors. This is because the environmental objective covers a number of different sub-objectives including those typically associated with greenfield developments (landscape, biodiversity and historic resources), urban developments (noise, townscape and physical fitness) and more general sub-objectives that can apply to both (air quality, water environment, journey ambience). It was acknowledged that Corridor 1 would perform better in terms of reduced impact upon the greenfield issues, but conversely, it performed worse in terms of the urban issues, and on balance gave the same overall environmental impact as the off-line corridors.
- **Safety** – The safety objective aims to reduce the loss of life, injuries and damage to property resulting from transport accidents and crime. The two safety sub-objectives are focused on reducing accidents and improving security. The Stage 1 safety assessment identified that Corridor 1 would not perform as well as a bypass. This was because it passes through an urban environment with pedestrian and cyclist activity requiring access along and across the road. It was therefore considered the conflict between motorised and non-motorised users would be higher leading to potential safety issues.
- **Economy** – The economy objective considers the overall economic performance, including the user benefits (journey time savings and vehicle operating costs) and accident savings, and not just the capital cost of the scheme. Corridor 1 was assessed to be the cheapest of all the corridors considered during the Stage 1 assessment; however the journey time savings were low as a result of the delays associated with the signalised junction, and slower moving traffic because of the 40mph speed limit through the village. The overall economic performance of Corridor 1 was poor, with the Stage 1 Assessment indicating that it would not deliver a positive return on the investment. The Ballynure bypass options delivered better overall economic returns on investment.
- **Accessibility** – The accessibility objective is focused on the ability with which people in different locations, and with differing availability of transport, can reach different types of facilities. The key consideration for Corridor 1 within the Stage 1

assessment was that severance of the community would be greatly increased. This was compared to a Ballynure bypass solution that would have a greatly reduced impact on severance and hindrance to the village.

- **Integration** – The integration objective is concerned with the ensuring decisions are taken in the context of the Government's integrated transport policy, specifically considering different types of transport, land use policies and other government policies. The performance of the online and bypass corridors were similar, however it was considered Corridor 1 performed slightly better in terms of land use policies although the difference was not considered significant.

## 1.5 Public Consultation Comments

The Preferred Corridors for the scheme were announced in November 2008. This was followed by a two-day Public Consultation event held on the 11<sup>th</sup> and 12<sup>th</sup> November 2008 to present the Preferred Corridors and obtain public feedback which was attended by over 350 people.

The public was asked to provide answers to the following quantitative questions:

1. *Do you support the principle of improving the A8 between Coleman's Corner and the B100 Ballyrickard Road. YES/NO/Unsure. (Respondents were also asked to provide reasons)*
2. *Would you prefer a western bypass (Green Corridor) or an eastern bypass (Purple Corridor) Please tick as appropriate. West/East. (Respondents were also asked to provide reasons.)*
3. *Would you prefer the carriageway to be dualled online at Bruslee or for a bypass at Bruslee to the east? Online Bruslee/Bypass Bruslee/No preference. (Respondents were also asked to provide reasons)*
4. *Please rank all the sub-corridor options for Ballynure from 1 to 4 to signify your order of preference (1 being your preferred option and 4 being your least preferred) Option A / Option B/ Option C/ Option D/ No Preference. (Respondents were also asked to provide reasons.)*

Consultees were also invited to provide additional comments on the proposed corridor options and whether they supported the principle of improving the A8.

The public feedback received focused on preferences between the two Preferred Corridors presented. There were 212 responses received following the consultation event, Of these, 21 responses stated the route should pass through the village (even though this option had been rejected); and 17 responses stated the route should bypass the village (agreeing with the Stage 1 recommendations).

The Preferred Route Announcement for the scheme was made on the 5<sup>th</sup> August 2009, and was followed by a 2-day Public Exhibition. Following the Public Exhibition, the scheme was to be presented to a Regional Development Committee meeting scheduled for the 30<sup>th</sup> September 2009. This meeting was to update the Regional Development Committee on scheme progress and to give the committee the opportunity to discuss the scheme. Prior to the Regional Development Committee correspondence was received from eighteen local landowners and residents expressing their concerns about the Preferred Route. These were primarily focused on the decision not to progress an online scheme through the village. Roads Service formally responded to that correspondence; however there has been further correspondence and several public meetings between Roads Service officials and Arup, and local landowners and residents.

The comments received through letters and at public meetings in relation to the route around Ballynure have been from landowners and residents to the west of the village, and

from two businesses within Ballynure that have direct access to and from the existing A8. Roads Service has formally responded to all letters received addressing individual landowner and resident specific comments. The general recurring comments and issues raised through written correspondence and during public meetings are summarised below.

- It would be cheaper to widen the existing A8 through Ballynure, and there would be less environmental impact by widening the existing A8 through Ballynure,
- An underpass or viaduct through Ballynure could be provided as part of an online solution to minimise the impact on the village,
- A design of the appropriate standard could be developed through the village,
- What consideration has been given to economic impact on the businesses in Ballynure and therefore the overall village, and
- The route is not busy and does not require dualling and the scheme is unnecessary.

## **1.6 Purpose of this Report**

---

This report considers the comments that have been made by local residents and landowners and aims to address a series of questions:

1. *Did the Stage 1 Assessment appropriately consider the environmental, safety, economic, accessibility and integration benefits and disbenefits of an online scheme and would additional information now available change the outcome of this assessment?*
2. *What would be the physical impact on Ballynure of an online dual carriageway solution designed to the required standard?*
3. *Would a different improvement strategy (underpass or viaduct) have performed better in the Stage 1 Assessment than the improvement strategy assessed for Corridor 1?*
4. *Would the implementation of a village bypass have a more significant economic impact on Ballynure than an online widening scheme?*

The final point made in relation to the need for the scheme is discussed in Chapter 5 of the Stage 1 Assessment Report and therefore this report does not reproduce that information.

## **1.7 Structure of the Report**

---

This Stage 1 Assessment Report Addendum comprises six chapters, which are summarised as follows:

- Chapter 1 is the *Introduction*
- Chapter 2, *Review of the Stage 1 Assessment of Corridor 1*, discusses the appropriateness of the Stage 1 Assessment;
- Chapter 3, *Summary of the Impact of Corridor 1 on Ballynure*, discusses the impact on Ballynure of an online solution;
- Chapter 4, *Review of Alternative Strategies through Ballynure*, discusses the alternative online improvement strategies and how they would perform when assessed in accordance with published guidance;
- Chapter 5, *Economic Impact on Ballynure*, discusses the economic impact of an online or bypass option on the village of Ballynure; and
- Chapter 6, *Summary and Conclusions*, provides a summary of the work undertaken and the conclusions reached.

## 2 Review of the Stage 1 Assessment of Corridor 1

The Stage 1 Assessment for the A8 considered broad improvement strategies including Corridor 1 an online widening option. This chapter provides a review of the Stage 1 Assessment of Corridor 1 to consider whether the assessment adequately considered the advantages and disadvantages of this option and aims to address the following question:

- Did the Stage 1 Assessment appropriately consider the environmental, safety, economic, accessibility and integration benefits and disbenefits of an online scheme and would additional information now available change the outcome of this assessment?

### 2.1 Environment Objective

The Environment Objective is focused on protecting the built and natural environment. WebTAG states the following in relation to the Environment Objective:

*“The Environment Objective aims to protect the built and natural environment. This includes reducing the direct and indirect impacts of transport facilities and their use on the environment of both users and non-users. The environment impacts of concern include noise, atmospheric pollution of differing kinds, vibration, formal intrusion, severance, and impacts on the countryside and wildlife, ancient monuments and historic buildings and so on. While some of these can be readily quantified, others such as severance are much more difficult to define and analyse. More recently, the Environment Objective has been defined more widely to include reduction of the impact of transport on the global environment, particularly through emission of carbon dioxide, but also by consumption of scarce and non-renewable resources.*

*The Environment Objective has 10 sub-objectives that reflect the various impacts of concern:*

- *to reduce **noise***
- *to improve **local air quality***
- *to reduce **greenhouse gases***
- *to protect and enhance the **landscape***
- *to protect and enhance the **townscape***
- *to protect the **heritage of historic resources***
- *to support **biodiversity***
- *to protect the **water environment***
- *to encourage **physical fitness***
- *to improve **journey ambience**”*

The environment objective therefore considers the wider environmental issues and not just the traditional aspects associated with open undeveloped land. The number of sub-objectives demonstrates that the overall assessment is balanced across all sub-objectives.

#### 2.1.1 Stage 1 Assessment

The Stage 1 Assessment identified the environmental features within the area surrounding Ballynure are typically classed as of local importance. There are no major sites that are formally designated sites of national or European importance, e.g a Site of Special Scientific Interest (SSSI) for biodiversity, or a Scheduled Historic Monument (SHM) for archeology. The Stage 1 environmental assessment concluded that the environmental impact of either an online or bypass option was modest in nature. The online route performed better in relation to the greenfield development issues of biodiversity and landscape by minimizing the land requirements, but performed poorly on the urban and social issues of noise and townscape.

### 2.1.2 Environmental Review

This review considered the additional information gathered during the Stage 2 Assessment as part of ongoing surveys and consultation with statutory consultees. This has primarily focused on gathering additional information in relation to the biodiversity sub-objective through additional site surveys, and verifying previous information gathered for the townscape, landscape, water environment and heritage of historic resources sub-objectives through further site visits and consultation. This review has not highlighted any additional sites or features in addition to those considered in the Stage 1 Assessment.

### 2.1.3 Conclusion

The impacts identified as part of both the Stage 1 and Stage 2 environment assessments for a bypass option are a mixture of neutral, slight/minor and moderate adverse or beneficial impacts depending on the option and individual sub-objective. In addition, the review of additional Stage 2 information has not highlighted any extra information not considered as part of the Stage 1 Assessment. Therefore the conclusion of the Stage 1 Assessment that the various corridors around Ballynure performed similarly in terms of the Environment Objective remains valid.

## 2.2 Safety Objective

---

The Safety objective is focused on the safety of the general public, WebTAG states the following in relation to the Safety Objective:

*“Transport interventions may alter the risk of individuals being killed or injured as a result of accidents through a variety of means. Accident impacts occur across all modes of transport and affect non-users as well as users.”*

The safety assessment therefore considered the known causes of accidents. The primary aim would be to remove conflict points that lead to accidents, however where this is not possible measures should be considered to reduce the likelihood of an accident.

### 2.2.1 Stage 1 Assessment

The Stage 1 Assessment concluded that Corridor 1 would not perform as well as a bypass option because of the increase in vehicles passing through the village and the increased conflict between vehicles and non-motorised users.

### 2.2.2 Safety Review

The review in terms of the safety objective has considered the key safety aspects of an online solution and has assessed the risk of accidents that would result. Corridor 1 includes a 4-arm signalised junction in the centre of the village and a series of left-in left-out junctions within Ballynure, this layout alone represents a safety concern as in general terms the greater the number of junctions the greater the risk of accidents. In addition, Corridor 1 would provide footway/cycleways alongside the dual carriageway to provide access to local businesses and properties. The close proximity of large volumes of traffic, including a high proportion of heavy goods vehicles, with non-motorised users represents another potential risk of accidents. Additional measures such as providing pedestrian guardrailing could be considered to reduce the chances of accidents, but the conflicts and risk of accidents would still exist. Conversely, the bypass options include only very limited direct vehicular access on the section around Ballynure and no non-motorised user provision (as they would be routed through the village) and would therefore remove a significant amount of traffic from the village of Ballynure and significantly reduce the conflict between vehicles and non-motorised users.

### 2.2.3 Conclusion

The review has highlighted that an online solution would include more junctions, and have significant sections of the scheme where non-motorised users and vehicles would be in

close proximity. Therefore the Stage 1 Assessment that Corridor 1 would not perform as well as a bypass option in terms of safety is considered valid.

### 2.3 Economy Objective

The Economy objective is focused on supporting economic activity and getting good value for money. WebTAG states the following in relation to the Economy Objective:

*“The Economy Objective is concerned with improving the economic efficiency of transport. The Economy Objective was developed from the principles of **A New Deal for Transport (DETR, 1998)**, the Government’s White Paper on transport. Congestion and unreliability of journeys add to the costs of business, undermining competitiveness particularly in our towns and cities where traffic is worst. The cost to the British economy is estimated to run into billions of pounds every year and is rising.*

*The Economy Objective has five sub-objectives:*

- *to get good value for money in relation to impacts on public accounts*
- *to improve transport economic efficiency for business users and transport providers*
- *to improve transport economic efficiency for consumer users*
- *to improve reliability*
- *to provide beneficial wider economic impacts*

***Appraising against the Economy Objective involves cost-benefit analysis, where the benefits of a scheme are balanced against its costs; and the calculation of the costs includes an assessment of impacts of a scheme on pedestrians, cyclists and other road users; with a monetary value applied to these impacts”***

The economic assessment therefore considers the overall performance of the scheme and not just the capital cost of the scheme. The key aspects of the A8 Stage 1 economic assessment that influence the outcome are:

- **Scheme Cost** – assuming everything else in the economic assessment remains constant a reduction in the cost estimate would deliver a better economic performance.
- **Journey Time and Fuel Savings** – assuming everything else in the economic assessment remains constant a reduction in the journey time either through travelling faster or travelling shorter distances would deliver a better economic performance.
- **Accidents** – accident benefits contribute to the overall scheme benefits however are based on the Stage 2 Assessment are unlikely to provide a significant impact on the economic comparison of different options and therefore are not discussed further.

#### 2.3.1 Stage 1 Assessment

The Stage 1 Assessment concluded that Corridor 1 had the cheapest capital cost, and the benefits of the scheme were lower than for other options. The analysis of the overall economic performance showed the return on the investment for Corridor 1 was less than for both bypass options considered. The Stage 1 Assessment indicated that it would not deliver a positive return on the investment.

#### 2.3.2 Economy Review

This review has considered whether the original capital cost estimate for the scheme could have been conservative, or whether the journey time savings could increase, therefore delivering a better economic performance than assessed at Stage 1.

The review considered a more detailed assessment for the major aspects of the cost estimate including earthworks and pavement quantities from the further design information

and likely bridge arrangements and spans. The revised cost estimate which was developed using more detailed quantities, the latest rates and to current prices, showed an increase in the scheme cost estimate to approximately £110m, which matches the magnitude of the increase in costs for all routes considered during the Stage 2 Assessment. The review therefore confirmed the Stage 1 estimate of £105m for Corridor 1 was realistic, and is unlikely to reduce significantly to give any material improvement in the economic performance.

In terms of the journey time savings the review considered the ability to reduce journey times by reducing the distances travelled by motorists or by increases in vehicle speeds. The length of Corridor 1 was accurately assessed during the Stage 1 Assessment based on the existing road network and therefore there is no opportunity to reduce this distance whilst remaining online. The vehicle speeds in the traffic model are influenced by the imposed speed limit. The Stage 1 Assessment used a 40mph speed limit through the village of Ballynure, with a 70mph national speed limit on the dual carriageway to the east or west. The latest guidance on the choice of speed limits is provided within DfT Circular 01/2006 and would support the use of a 40mph speed limit within Ballynure based on a rural road passing through a village.

### 2.3.3 Conclusions

The review of the scheme costs has validated the Stage 1 cost estimate for Corridor 1. In addition, the journey length is fixed by the existing road network and there is no opportunity to increase vehicle speeds to deliver greater journey time savings. Therefore, it is considered the Stage 1 Assessment has adequately considered the overall economic performance of an online solution, which ultimately did not perform as well as a bypass option.

## 2.4 Accessibility Objective

---

The Accessibility objective is focused on improving access to facilities for those without a car and reducing community severance, WebTAG states the following in relation to the Accessibility Objective:

*“To improve access to facilities for those without a car and to reduce severance.*

*In general terms, accessibility can be defined as ‘ease of reaching’. The accessibility objective is concerned with increasing the ability with which people in different locations, and with differing availability of transport, can reach different types of facility.”*

The key aspects to the accessibility assessment are:

- **Option Values** –the transport options available to individuals.
- **Community Severance** – the severance as it affects those using non-motorised modes.
- **Access to the Transport System** – the availability of the transport system for those within a car.

### 2.4.1 Stage 1 Assessment

In terms of the option values and access to the transport system sub-objectives the Stage 1 Assessment concluded that because the transport services will be the same within Ballynure for an online or bypass option this aspect of the accessibility objective does not provide any differentiation between the online or bypass options as concluded by the Stage 1 Assessment. In terms of the severance sub-objective the Stage 1 Assessment concluded that Ballynure was the key area for severance and providing a dual carriageway through the village would exacerbate problems associated with non-motorised user movements, therefore making pedestrian journeys longer and less attractive. Corridor 1 was therefore

considered to perform poorly in relation to severance, whereas the bypass options would perform positively by improving the arrangements within the village.

#### **2.4.2 Accessibility Review**

The review of the Accessibility Objective has focused on severance and how a proposal affects those using non-motorised modes, especially pedestrians. The review has considered the existing and proposed layout of Ballynure and the number of pedestrian movements and the desire lines across the A8. The existing arrangements and layout of Ballynure have been reviewed and the key features identified:

- Five formal uncontrolled crossing points and a pedestrian underpass. However, there is no pedestrian guardrail or barrier along the existing road and therefore pedestrians can currently cross at any point they wish.
- Pedestrian surveys undertaken in spring 2008 at Riverside showed a total of 37 trips across the A8 between 08:00 and 09:00.
- The development extent of Ballynure in the Belfast Metropolitan Area Plan (BMAP) covers an area of approximately 30Ha, with approximately 43% of the village located on the west of the A8 and 57% to the east.
- There are a number of community facilities within Ballynure located on both sides of the A8, with two churches, a petrol station, public house and shops to the east and another church, primary school, and park to the west.

The village of Ballynure is therefore clearly split by the A8 with a need for individuals to cross the existing road to access local facilities.

Corridor 1 would provide an at-grade dual carriageway and would restrict the number of crossing points to a single location. It would also include pedestrian guardrails or barriers along the edge of the carriageway for safety reasons to discourage pedestrians from crossing at other locations. This restriction on crossing points combine with the wider footprint of the dual carriageway and high traffic volumes will serve to emphasise the separation between the two parts of Ballynure and discourage residents further from making journeys on foot.

#### **2.4.3 Conclusions**

The A8 at Ballynure currently carries approximately 17,000 vehicles per day between the A57 and Lismenary Road with a high proportion of heavy goods vehicles. The delivery of Corridor 1 would reduce the number of crossing points and increase the hindrance to pedestrians. It is also likely to dissuade some residents from making journeys on foot. A bypass option would remove a significant proportion of the existing through traffic from Ballynure. This reduction in traffic would remove part of the perceived barrier and allow greater connectivity between the two sides of the village.

### **2.5 Integration Objective**

---

The Integration Objective is focused on ensuring all decisions are taken in the wider context of government policies, WebTAG states the following in relation to the Integration Objective:

*“To ensure that all decisions are taken in the context of the Government's integrated transport policy.*

*More specifically, this means:*

- *integration within and between different types of transport, so that each contributes its full potential and people can move easily between them;*
- *integration with the environment, so that the transport choices available support a better environment;*

- *integration with land-use planning, at national, regional and local level, so that transport and planning work together to support more sustainable travel choices and reduce the need for travel; and*
- *integration with policies for education, health and wealth creation, so that transport helps make a fairer, more inclusive society.”*

### **2.5.1 Stage 1 Assessment**

The assessment considered published land use policies and other policy documents and strategies. Corridor 1 would comply in full with certain policies, however further design development and mitigation would be required to minimise the impact on aspects of other policies. A number of planning policy documents cover issues such as nature conservation, archaeology and therefore in terms of these Corridor 1 would perform slightly better than a bypass option. However, in terms of other strategic documents that are focused on developing a strategic transport network, Corridor 1, with a 40mph speed limit and signalised junction in Ballynure, would not perform as well.

### **2.5.2 Integration Review and Conclusions**

The additional, more detailed work undertaken as part of the Stage 2 Assessment has not influenced the conclusions reached during Stage 1 with regards to the Integration Objective.

## **2.6 Conclusion**

This review has considered the sensitivity of the conclusions reached during the Stage 1 Assessment. The review has demonstrated that Stage 1 Assessment was undertaken properly and is robust, and that the additional information gathered during the Stage 2 Assessment would not have changed the assessment and conclusions reached during Stage 1. The performance of Corridor 1 in terms of the Economy, Safety and Accessibility Objectives therefore remains poorer than for either bypass option. In terms of the Integration and Environment Objectives the performance is similar and therefore overall the bypass options performed better in terms of the Government's five key objectives for transport, validating the decision at Stage 1 to reject Corridor 1.

### 3 Summary of the Impact of Corridor 1 on Ballynure

The Stage 1 Assessment considered broad improvement strategies and therefore the impact that Corridor 1 would have on the village of Ballynure was not outlined in detail. This chapter provides a summary of the impact of Corridor 1 on Ballynure and aims to address the following question:

- *What would be the physical impact on Ballynure of an online dual carriageway solution designed to the required standard?*

#### 3.1 Key Impacts

The Investment Strategy for Northern Ireland 2008-2018 (ISNI) and Investment Delivery Plan for Roads (IDP), includes a number of key goals, including '*opening the A5 and remaining sections of the A8 dualling schemes during the life of the strategy*'. In dualling the A8 between Coleman's Corner and the Ballyrickard Road, the aim of the project would be to deliver a high speed route (70mph speed limit) to comply with the requirements of the DMRB for that speed limit. This section of dualling would complete the dualling of the A8 and provide a consistent high speed route between Belfast and Larne.

However, designing a dual carriageway through Ballynure would require a reduced speed limit of 40mph and include a signalised junction. It would therefore provide an inconsistent strategy along this key transport corridor and reduce journey times. In addition, the close proximity of motorised and non-motorised users, bus-stops and existing accesses and junctions would require further measures within the design that would not typically be associated with that of a rural dual carriageway.

The key impacts of online dualling through Ballynure are summarised below.

- Closure of A8/Main Street junction due to close proximity of the new A57 junction;
- Gradual increases in traffic volumes leading to congestion at the Riverside/Lisglass Road junction within Ballynure, increased noise levels and reductions in air quality;
- Widening of the existing highway from approximately 20m to approximately 30m. This would increase the physical separation between the two halves of Ballynure and have an adverse affect on the setting of Ballynure;
- The provision of a dual carriageway and large signalised junction in the middle of the village that would be out of keeping with the village character;
- Restricted left-in left-out access to the Petrol Station, Fish and Chip shop and other residential properties with access directly from the A8;
- Reconfiguration and potential reduction in parking facilities at the Petrol Station and Fish and Chip Shop to accommodate new access;
- Limited pedestrian and cyclist crossing facilities increasing the hindrance for pedestrians and cyclists and therefore adversely increasing severance;
- Would require safety barrier along the central reserve of the dual carriageway (except for at the signalised junction) and pedestrian guardrail or safety barrier along both sides of the A8. This will increase the perception of severance and have an impact on the townscape of Ballynure;
- A 40mph speed limit would be required for safety reasons within Ballynure and non-motorised user and vehicle conflict would remain a significant concern. However, if a bypass option were to be implemented, not only would through traffic be removed, but a 30mph speed limit could be implement within the village to further improve safety;

- Major disruption during construction works associated with widening or replacement of the existing Ballynure Water bridge, utility diversions, junction reconfigurations including temporary restrictions on movements and traffic congestion; and
- Demolition of two residential properties with significant land take from a further property. One of these properties was acquired by Roads Service a number of years ago under blight legislation, but has been subsequently sold to a private individual.

The impact on Ballynure outlined above formed part of the Stage 1 Assessment and has been summarised in this section of this report to outline the implications for the village of an online scheme.

## 4 Review of Alternative Strategies through Ballynure

The Stage 1 Assessment considered an online option (Corridor 1) that widened the existing A8 along the length of the scheme, including the section through Ballynure which included speed restrictions and traffic signals. The Stage 1 Assessment of Corridor 1 was based on an at-grade dual carriageway with a signalised junction in the centre of the village that would cater for traffic leaving and joining the A8 from Lismenary Road and Riverside. This was considered to be the best performing improvement strategy and reflects Option 1 below.

There are a number of alternative strategies that could be delivered within an online corridor through the village of Ballynure. These were considered during the Stage 1 Assessment but discounted at an early stage. This chapter outlines the range of alternative strategies considered and aims to address the following question:

- *Would a different improvement strategy (underpass or viaduct) have performed better in the Stage 1 Assessment than that assessed as Corridor 1?*

### 4.1 Alternative Strategies through Ballynure

Option 1 was the improvement strategy considered in the Stage 1 Assessment and therefore represents Corridor 1.

- **Option 1** - At-grade solution for the A8 with a signalised junction in centre of Ballynure catering for traffic from Lismenary Road and Riverside;

The following strategies could also have been assessed as an online solution;

- **Option 2** - At-grade solution for the A8 with left-in left-out junctions at Riverside and Lismenary Road and a junction at each end of the village to allow crossing and u-turns;
- **Option 3** - At-grade solution for the A8 with a roundabout in the centre of Ballynure connecting Lismenary Road and Riverside to the A8;
- **Option 4** - At-grade solution for the A8 with a bridge or underpass in the centre of Ballynure connecting Lismenary Road and Riverside;
- **Option 5** - A viaduct structure taking the proposed A8 dual carriageway over Ballynure allowing motorised and non-motorised access beneath the A8; and
- **Option 6** - An underpass/cutting taking the proposed A8 dual carriageway beneath Ballynure allowing motorised and non-motorised access above the A8.
- **Option 7** - A half depth cutting taking the proposed A8 dual carriageway beneath Ballynure with a half height embankment connecting Lismenary Road and Riverside.

Ballynure Water flows through the middle of the village under the existing A8. This watercourse could not be easily diverted around an underpass, therefore any proposed changes to the vertical alignment for the dual carriageway would need to remain at existing ground levels or go beneath the watercourse. The option of retaining the existing A8 at grade and taking the side road over is represented in Option 4, and the option of lowering the road to pass under the watercourse, represented by Option 6. Option 7, was discounted because of the vertical constraint imposed by Ballynure Water and is not mentioned further within this Chapter.

These options were considered at Stage 1 and Option 1 was identified as the best performing online solution when assessed in accordance with the DMRB and WebTAG methodologies and against the Government's five key objectives for transport of environment, safety, economy, accessibility and integration. The details of each option are shown on the drawings in Appendix A, and the comparison identifying the key differences

that would result in an option performing better or worse against Option 1 are summarised in the Sections 4.2 to 4.6 .

## **4.2 Option 2 – At-grade solution for the A8 with junctions at both ends**

---

### **4.2.1 Description**

Option 2 would deliver an at-grade widening solution with a 40mph speed limit through Ballynure similar to Option 1. The key difference would be that all access to/from the A8 within Ballynure (including from Liskenary Road and Riverside) would be restricted to left-in left-out. The proposed A57 Templepatrick Road junction south of Ballynure and a new compact grade separated junction north of Ballynure would cater for crossing movements, right turns and u-turns. This junction strategy would have a significant impact on journeys to and from Ballynure, adding approximately 0.7km to every journey, and access to existing business and properties with direct access onto the A8.

Option 2 would require the acquisition of two residential properties (No. 1 Larne Road and No. 1 Liskenary Road) and require significant areas of land from a further property (No. 3 Belfast Road).

### **4.2.2 Environment**

The only difference between Option 2 and Option 1 in terms of the environment objective would be in terms of the townscape/landscape sub-objectives. Option 2 would perform worse in this regard because of the restrictions the junction strategy would impose on the layout and human interaction in Ballynure, it would effectively impose a diversion on all vehicle movements from one side of the village to the other, . Option 2 would therefore perform worse in terms of the environment objective than Option 1.

### **4.2.3 Safety**

This option would perform similarly to Option 1 in terms of safety.

### **4.2.4 Economy**

The construction costs for Option 2 would be similar to Option 1 and the journey time savings for the two options would be similar with a 40mph speed limit imposed in both options. Therefore in terms of the overall economic performance Option 2 would perform similarly to Option 1.

### **4.2.5 Accessibility**

Option 2 would provide a second crossing point, in addition to the crossing point provided with Option 1, at the new proposed junction. Therefore the performance of Option 2 would be slightly better than Option 1 in terms of accessibility.

### **4.2.6 Integration**

Option 2 would perform similarly to Option 1 in terms of the integration and alignment with relevant land use policies and Government policies.

## **4.3 Option 3 – At-grade solution for the A8 with a roundabout in Ballynure**

---

### **4.3.1 Description**

Option 3 would deliver an at-grade widening solution with a 40mph speed limit through Ballynure similar to Options 1 and 2. The key difference would be that all access to the A8 in Ballynure would be via a roundabout at the end of Liskenary Road and Riverside. This junction strategy would provide a similar level of access to Option 1, although a roundabout would require traffic at all times of day to slow and potentially stop while negotiating the junction. The diameter of the roundabout would be relatively large to accommodate a minimum two lane circulatory carriageway and five arms.

Option 3 would require one residential property demolition (No. 2 Old Larne Road) and require significant areas of land from a further three properties (No. 1 Larne Road, No. 1 Lismenary Road and No. 3 Belfast Road).

#### **4.3.2 Environment**

Option 3 would deliver a slightly worse environmental performance to Option 1. Both options provide an at-grade solution with a junction in the middle of Ballynure, although the roundabout would require more land and an additional property than a traffic signal junction (as with Option 1). The additional impact on the layout and setting of Ballynure is considered to result in a slightly worse performance in terms of the landscape and townscape sub-objective.

#### **4.3.3 Safety**

This option would provide an at-grade widening solution similar to Option 1, and therefore in terms of safety performance would be comparable.

#### **4.3.4 Economy**

The construction costs and journey time savings for Option 3 would be similar to Option 1 and therefore the overall economic performance Option 3 would be similar.

#### **4.3.5 Accessibility**

Option 3 would be the same as Option 1 and limit pedestrian and cyclist crossing facilities to a single location where a connection is provided across the dual carriageway linking Lismenary Road and Riverside. Option 3 is therefore considered to perform similarly to Option 1 in terms of accessibility.

#### **4.3.6 Integration**

Option 3 would perform similarly to Option 1 in terms of the integration and alignment with relevant land use policies and Government policies.

### **4.4 Option 4 – At-grade solution for the A8 with a bridge/underpass connection in Ballynure**

---

#### **4.4.1 Description**

Option 4 would deliver an at-grade widening solution with a 40mph speed limit through Ballynure similar to Options 1, 2 and 3. The key difference would be that a bridge connection over or under the A8 would be provided in Ballynure to cater for local traffic across the A8, which could include a short viaduct carrying the A8. This junction strategy would adequately cater for traffic from Lismenary Road and Riverside, however vehicular access to businesses and properties along the A8 would be restricted to left-in left-out. The construction of a bridge or underpass in the centre of Ballynure would have a major physical and visual impact on the centre of the village.

Option 4 would require significant numbers of buildings and land within the centre of the village to be acquired and demolished.

#### **4.4.2 Environment**

The only difference between Option 4 and Option 1 in terms of the environment objective would be in terms of the townscape/landscape sub-objectives. Option 4 would perform poorly in terms of this sub-objective because of the impact of a large bridge or underpass in the centre of the village. The loss of buildings would have a major impact on the layout of the village and there would be a large visual impact associated with the bridge or underpass structure and approach embankments. Option 4 would therefore perform worse in terms of the environment objective than Option 1.

#### **4.4.3 Safety**

This option would provide an at-grade widening solution similar to Option 1, and therefore would be comparable in terms of safety.

#### 4.4.4 Economy

The construction costs for Option 4 would be slightly higher than Option 1 because of the additional structure, approach roads and land required. The journey time savings for the two options would be similar with a 40mph speed limit imposed in both options. Therefore in terms of the overall economic performance Option 4 would perform slightly worse than Option 1.

#### 4.4.5 Accessibility

Option 4 would be the same as Option 1 and limit pedestrian and cyclist crossing facilities to a single location where a connection would be provided across the dual carriageway linking Lismerary Road and Riverside. Option 4 is therefore considered to have a similar performance to Option 1 in terms of accessibility.

#### 4.4.6 Integration

Option 4 would perform similarly to Option 1 in terms of the integration and alignment with relevant land use policies and Government policies.

### 4.5 Option 5 – Viaduct solution for the A8



Typical Urban Viaduct Structure

#### 4.5.1 Description

Option 5 would involve the construction of a viaduct to take the A8 through Ballynure maintaining a speed limit of 70mph throughout. However, this would represent a major construction element that would have significant impact on the village. The existing A8 would need to remain beneath the new viaduct to cater for local traffic making the design and construction of the viaduct more complex.

A scheme that delivers a viaduct through Ballynure would require one residential property demolition (No. 1 Larne Road) and require significant areas of land from a further property (No. 3 Belfast Road).

#### 4.5.2 Environmental

This viaduct option would perform worse than Corridor 1 in terms of the noise sub-objective due to increased vehicle speeds and the fact vehicles would be elevated relative to the surrounding area. In addition, in terms of townscape/landscape the introduction of a viaduct would contrast markedly with the context of the existing village setting, layout and road hierarchy. The viaduct would sit unsympathetically above the existing layout, dominating the skyline from certain local and middle distance views leading to a high adverse impact. Option 5 would therefore perform significantly worse than Option 1 in the environmental assessment.

#### 4.5.3 Safety

The grade separation of the dual carriageway will remove the potential conflict between motorised and non-motorised users. The viaduct would effectively provide a vertical bypass of Ballynure and therefore would perform similarly in terms of safety to the bypass options, and hence better than Option 1.

#### 4.5.4 Economy

The construction of a viaduct through Ballynure would significantly increase the construction cost of the scheme. The additional costs of Option 5 when compared to Option 1 are mainly associated with the structure and would be in the region of £30m (including allowances for contractor's overheads and profit, preparation, surveys, design and supervision, and risk). Therefore the total project cost estimate for an online solution with a viaduct would be in the region of £135m, which is significantly higher than the completely off-line corridors considered during the Stage 1 Assessment.

At Stage 1 it was assessed that there would be £20m of additional benefits (largely associated with journey time savings) from implementing a 70mph solution (Corridor 2) compared to a 40mph solution (Corridor 1). For the purpose of this assessment it is therefore assumed that Option 5 would deliver approximately £20m of additional benefits to Option 1. However the additional benefits in journey time savings of approximately £20m, associated with a consistent 70mph speed limit, is less than the additional construction costs of approximately £30m, and therefore in terms of the overall economic performance Option 5 would perform significantly worse than Option 1.

#### 4.5.5 Accessibility

Option 5 would provide an opportunity to maintain the majority of the existing pedestrian and cyclist crossing facilities. Although the new viaduct may dissuade some people from making journeys. Option 5 is considered to perform better than Option 1 in terms of accessibility.

#### 4.5.6 Integration

Option 5 would place a large viaduct structure within a village setting and significantly impact on Ballynure. Therefore in terms of the integration and alignment with relevant land use policies and Government policies Option 5 would perform worse than Option 1.

### 4.6 Option 6 – Underpass/cutting solution for the A8



Typical Urban Retained Cutting



Typical Rural Open Cutting

#### 4.6.1 Description

Option 6 would involve the construction of an underpass with a retained or open cutting to take the A8 through Ballynure maintaining a speed limit of 70mph. This option would represent a major construction element that would have a significant impact on the village. The existing A8 would need to be maintained to cater for the existing traffic during the works and therefore the alignment of the underpass would need to be positioned parallel but off-line to the west of the existing road. Ballynure Water passes through the village and would need to be accommodated through a culvert in the roof of the underpass. A pumping station would be required to provide carriageway drainage for the underpass and cutting. In addition, there would be utility diversions required in Ballynure to divert those present in Lismenary Road, Church Road and along the western verge of the existing A8.

A scheme that delivers an underpass through Ballynure would require five residential properties to be demolished (No. 1, No. 14, No. 16, No. 18 and No. 20 Larne Road) and require significant areas of land from a further two properties (No. 1 Lismenary Road and No. 3 Belfast Road).

#### **4.6.2 Environmental**

The provision of an underpass is likely to perform better than Option 1 in terms of the noise sub-objective. The underpass will help to reduce noise levels, although the hard concrete walls of an underpass are likely to reflect some noise. However, Option 5 is considered to perform significantly worse than Option 1 in terms of impact upon the water environment and biodiversity because of the need to culvert a section of Ballynure Water over the underpass. In addition, in terms of townscape/landscape the introduction of an underpass would be inconsistent and out of scale with the existing townscape character and road hierarchy leading to a high adverse impact. Option 5 would therefore perform significantly worse than Option 1 in the environmental assessment.

#### **4.6.3 Safety**

The grade separation of the dual carriageway will remove the potential conflict between motorised and non-motorised users. The underpass would effectively provide a vertical bypass of Ballynure and therefore would perform similarly in terms of safety to the bypass options and better than Corridor 1 assessed in the Stage 1 Assessment.

#### **4.6.4 Economy**

The construction of an underpass, bridge connections and a pumping station in Ballynure would significantly increase the construction cost of the scheme. The additional costs of Option 6 when compared to Option 1 are associated with the structures and additional land requirements. The additional construction and land costs would be approximately £25m (including allowances for contractor's overheads and profit, preparation, surveys, design and supervision, and risk). Therefore the total project cost estimate for an online solution with an underpass would be in the region of £130m, which is significantly higher than the completely off-line corridors considered during the Stage 1 Assessment.

The difference in benefits associated with journey time savings with a 70mph speed limit would be approximately £20m, based on the difference between Corridor 1 (40mph speed limit through Ballynure) and Corridor 2 (70mph speed limit bypass) considered in the Stage 1 Assessment. Therefore the additional benefits in journey time savings of approximately £20m, associated with a consistent 70mph speed limit, is less than the additional construction costs of approximately £25m, and therefore in terms of the overall economic performance Option 6 would perform worse than Option 1.

#### **4.6.5 Accessibility**

The construction of an underpass would limit pedestrian and cyclist crossing facilities to a single location where a connection would be provided across the dual carriageway linking Lismenary Road and Riverside. This would therefore increase the hindrance for pedestrians and cyclists and therefore adversely increase severance within Ballynure in a similar manner to Option 1. Option 6 is therefore considered to perform similarly to Corridor 1 in terms of accessibility.

#### **4.6.6 Integration**

Option 5 would place a large underpass within a village setting and significantly impact on Ballynure. Therefore in terms of the integration and alignment with relevant land use policies and Government policies Option 5 would perform worse than Option 1.

### **4.7 Conclusion**

The comparison of the other potential improvement strategies with Corridor 1 is summarised in Table 4.1 below.

**Table 4.1: Summary of Online Options Comparison to Option 1 (Corridor 1)**

	<b>Option 2</b>	<b>Option 3</b>	<b>Option 4</b>	<b>Option 5</b>	<b>Option 6</b>
<b>Environment</b>	Worse	Slightly Worse	Worse	Significantly worse	Significantly worse
<b>Safety</b>	Similar	Similar	Similar	Better	Better
<b>Economy</b>	Similar	Similar	Slightly worse	Significantly worse	Worse
<b>Accessibility</b>	Slightly Better	Similar	Similar	Better	Similar
<b>Integration</b>	Similar	Similar	Similar	Worse	Worse

The comparison shows that none of the alternative options assessed perform better than the at-grade solution for the A8 with a signalised junction in centre of Ballynure (Option 1) in terms of the Government's five key objectives for transport.

Table 4.1 shows Option 1 is the best online solution. Option 1 formed the basis of the Stage 1 Assessment and therefore this review of the alternative options available has validated the work undertaken in the Stage 1 Assessment in that the correct option for online dualling through Ballynure was assessed, and rejected at Stage 1.

## 5 Economic Impact on Ballynure

As outlined in earlier chapters, a bypass option has been assessed to perform the best when compared against the five key objectives for transport. However, it is appropriate to discuss the potential impact on businesses in Ballynure and access to the village. This chapter discusses the impact on access to local businesses and aims to address the following question:

- *Would a different improvement strategy (underpass or viaduct) have performed better in the Stage 1 Assessment than that assessed as Corridor*

The economic assessment of the different corridors and routes has been undertaken in accordance with published guidance within WebTAG and takes account of user benefits and capital costs and considers them in the context of the wider economy of the region; however the delivery of all highway schemes and major infrastructure projects is likely to have some impact on an individual business or at community level. This is dealt with in a number of ways, for example:

- The vesting process considers the direct impacts on businesses associated with the loss of land or property.
- Impacts associated with changes to the surrounding road network, and connections provided, are considered as part of the overall scheme assessment process and alongside the Government's key objectives for Transport. In some cases it may be appropriate to provide signage or other measures as part of the scheme design to direct motorists to local businesses and services.

### 5.1 Existing Economy

There are various businesses operating within Ballynure. The majority of these do not have direct access to the A8 and are served by the village's local road network and are set back away from the A8 with no open views of the premises from the road. At the time of writing, two businesses within Ballynure (The Ballad Inn and Costcutter Supermarket) currently have adverts along the A8 directing motorists to their premises.

There are two businesses within Ballynure orientated towards the A8 that have access directly on to the A8. Access into these businesses is via an all-movement priority junction, and would attract an element of passing trade from the A8. One business is a petrol filling station which also has a small shop, and the second is a Fish and Chip shop and restaurant.

The existing businesses and village facilities as a whole have good access to and from the road network, allowing the general public from within or outside the village to easily access local facilities.

### 5.2 Proposed Access to Ballynure with the Preferred Route

The Preferred Route for the A8 dualling considers and caters for access to the village of Ballynure. The junction strategy for the scheme provides good connections to the new dual carriageway with a junction provided at both ends of the village, therefore allowing motorists to choose to go through the village if they wish to use local services. During the design development consideration will be given to appropriate signage on the A8, advising motorists of the local services available. It is acknowledged, however, that through traffic through the village will be greatly reduced,

This road arrangement retains existing road links across the proposed bypass to the west of the village, allowing residents from the area and settlements to the west to continue to access the village without significant diversions. The access to businesses within Ballynure will be unchanged and continue to cater for traffic to and from all directions.

### **5.3 Proposed Access Arrangements with an Online Scheme**

---

As outlined in Chapter 4 there are a number of online improvement options through Ballynure that could be delivered. The best performing option was an at-grade solution with a signalised junction in the middle of Ballynure providing all-movement access to Lismenary Road and Riverside. This option however would impact on access to and from Ballynure and businesses along the existing A8.

The at-grade option would limit access to Ballynure. The provision of additional junctions or gaps in the central reserve represent safety issues and therefore the remaining existing accesses onto the A8 would be either closed or restricted to left-in left-out. In the case of the two existing businesses currently benefiting from direct access onto the A8, this would be restricted to left-in left-out, therefore imposing significant diversions on all customers except through traffic travelling along the new southbound carriageway of the A8.

### **5.4 Conclusion**

---

The options to provide a dual carriageway online through Ballynure would have a more severe impact on access to Ballynure and especially those businesses currently with direct access onto the existing A8. The Preferred Route for the dual carriageway and bypass of Ballynure provides the opportunity to retain existing all-movement accesses within Ballynure, therefore maintaining good access for local residents and business from all directions. The design development will consider and provide appropriate signage to ensure motorists using the new dual carriageway are aware of the local services available within Ballynure, and the ability to rejoin the dual carriageway without retracing their steps.

## 6 Summary and Conclusions

This Stage 1 Assessment Review for the A8 Belfast to Larne Dual Carriageway considered a number of questions, as outlined below, in response to comments received from local residents and landowners.

- *Did the Stage 1 Assessment appropriately consider the environmental, safety, economic, accessibility and integration benefits and disbenefits of an online scheme and would additional information now available change the outcome of this assessment?*

The review of the Stage 1 Assessment concluded that the Stage 1 Assessment was undertaken properly and the outcome of the Stage 1 Assessment would not change with greater design detail or with the benefit of additional information now available. The economic assessment confirmed that an online option through Ballynure would be the cheapest to deliver, but would perform poorly in terms of overall economic performance against the Preferred Route. The environmental assessment concluded that on balance, over the range of sub-objectives assessed and the absence of any major designated sites, the online and bypass options performed similarly in terms of the overall Environment Objective.

- *What would be the physical impact on Ballynure of an online dual carriageway solution designed to the required standard?*

The impact of an online solution through Ballynure was not specifically outlined in the Stage 1 Assessment Report and this impact has now been discussed. The major impacts on Ballynure from an online solution would be access to and across the new dual carriageway, the impact on the layout and character of the village, increased noise levels, safety concerns and the major disruption and impact on the village during the construction works.

- *Would a different improvement strategy (underpass or viaduct) have performed better in the Stage 1 Assessment than that assessed as Corridor 1?*

The suggestion by various local residents that an underpass, viaduct or other solution could be delivered through Ballynure has been reviewed. Although the underpass and viaduct solutions would perform better than Corridor 1 in terms of safety and accessibility for the viaduct option, they would perform significantly worse in terms of other objectives. The Stage 1 Assessment was based on an at-grade widening solution of the existing road with a signalised junction in the centre of Ballynure. This review has assessed that this road arrangement is the best performing online option that is available for this route. Any other option would perform less well and was therefore discounted.

- *Would the implementation of a village bypass have a more significant economic impact on Ballynure than an online widening scheme?*

There were a number of concerns expressed about the economic impact that a bypass would have on Ballynure, and specifically the impact on two local businesses. The review highlighted that an online solution would limit access to local businesses for both local and through traffic, therefore potentially having a greater impact on the village. The proposed bypass maintains full access to all facilities within the village by providing an all movement junction at either end of the village, providing full access from either side to Ballynure. Appropriate signing should be considered in the development of the design to ensure traffic on the A8 is aware of local services available, however, it is acknowledged there will be less traffic passing through the village with this arrangement.

The assessment has concluded that none of the alternative online dualling options through Ballynure performed as well as the original online option assessed at Stage 1 (at-grade solution with a signalised junction and 40mph speed restriction). This validates the original Stage 1 Assessment in the regard that the correct design was considered for the study.

Further, the re-assessment of the online dualling option through Ballynure against the additional information now available has not changed the outcome of the assessment process, and confirmed the online dualling through Ballynure was correctly rejected at Stage 1.

Therefore this review of the Stage 1 Assessment has confirmed the original recommendations that an online dualling solution through Ballynure would not perform as well as the bypass options that were taken forward as Preferred Corridors. Based upon the outcome of this review of the Stage 1 study, Roads Service is satisfied the Preferred Route for the A8 Dualling announced by the Minister for Regional Development in August 2009 is the correct solution and continue to progress the scheme.