South West Scotland Transport Study - Initial Appraisal: Case for Change

January 2020

FINAL

Quality information

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Table of Contents

Figures

Tables

Introduction

01

1 Introduction

1.1 Overview

In the 2017-18 Programme for Government, the Scottish Government committed to commence work for the second Strategic Transport Projects Review (STPR) in the Dumfries and Galloway area. Responding to this commitment, in 2018, AECOM and Stantec were commissioned to carry out the first stage in the Scottish Transport Appraisal Guidance (STAG) process, researching the case for investment in transport interventions in the South West of Scotland through an **Initial Appraisal: Case for Change study**.

The key aim of the work is to consider the rationale for improvements to road, rail, public transport and active travel on key strategic corridors in the South West of Scotland, including those served by the A75, A76, A77, A701 and A709 as well as the railway corridors to Stranraer and Carlisle via Kilmarnock / Dumfries with a particular focus on access to the ports at Cairnryan.

1.2 Approach

The Initial Appraisal: Case for Change constitutes the first stage of STAG[1] and involves the following core tasks:

- **Analysis of Problems and Opportunities:** Establish the evidence base for problems and issues linked to transport on key corridors across the South West of Scotland drawing on targeted data analysis and engagement with the public and key stakeholders;

- **Objective Setting:** Develop initial Transport Planning Objectives to encapsulate the aims of any interventions, and to guide the development of solutions; and

- **Option Generation, Sifting and Development:** Develop a long list of multi-modal options to address identified problems and opportunities, and undertake a process of option sifting and development leading to the identification of a short list of interventions recommended for progression towards Preliminary Appraisal.

An overview of the approach adopted for the study, which follows STAG, is presented in Figure 1-1 overleaf.

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[1] https://www.transport.gov.scot/media/41507/j9760.pdf

Task 1: Inception

Task 2: Problems and Opportunities Analysis

Task 2.1: Define Strategic Corridors

Task 2.2: Baselining

Task 2.2.1: Policy & Context Review

Task 2.2.2: Traffic & Transport Analysis

Define transport problems by corridor

Surveys, data collation/ collection, engagement

Public & Stakeholder Engagement – See Task 3

Task 2.2.3: Socio-Economic Analysis

Define socio-economic problems & opportunities

Secondary data, engagement, quantitative connectivity analysis

Task 2.2.4: Environmental Constraints Review

Checklist Problems / Constraints / Opportunities	Mode				
	Active Travel	Rail	Bus	Freight	Car
Journey times	✓	✓✓	✓	✓✓✓	✓✓
Journey time reliability	✓	✓✓	✓✓	✓✓✓	✓✓
Resilience	✓	✓	✓	✓✓✓	✓✓
Safety	✓✓		✓	✓	✓
Driver frustration				✓	✓✓
Environment			✓	✓✓	✓✓
Service Frequency etc		✓✓	✓✓		

Establish Linkages: Cause and Effect

Checklist Socio-Economic Indictors	Cross-cutting problems and opportunities themes e.g.
Demographics/Health	International and regional competitiveness Economic constraints Population retention and sustainability Inclusive growth The rural economy
Income/Employment	
Productivity	
Connectivity	
Economic structure	

Task 3: Public & Stakeholder Engagement Strategy

Task 2.3: Defining Problems, Issues, Constraints & Opportunities

Task 4: Development of Transport Planning Objectives

Task 5: Option Generation, Sifting & Development

Task 5.1: Initial Option Generation

Task 5.2: High Level Option Appraisal

Option A

Option B

Option C

Option D etc.

Task 6: Reporting

Figure 1-1: Study Approach

Subsequent stages of the STAG process - the Preliminary and Detailed Appraisal phases - involve more detailed appraisal work, considering the feasibility and performance of options to tackle the identified transport-related problems and opportunities and these will be developed as the STPR process moves forward.

In taking forward these tasks, work has been overseen by a project Steering Group comprising Transport Scotland, Dumfries and Galloway Council (D&GC), the Ayrshire Roads Alliance[2], SWestrans and Strathclyde Partnership for Transport (SPT).

1.3 Structure of Report

Following this introduction, the remainder of this report is structured as follows:

- **Chapter 2 – Background & Context**: An overview is provided of the background policy context against which this study has been taken forward.

- **Chapter 3 – Baseline Review:** This section presents the results from a data analysis review used to set out the baseline transport, socio-economic and environmental conditions in the study area, which has subsequently been used as the basis for problems and opportunities analysis.

- **Chapter 4 – Public & Stakeholder Engagement**: This section provides a summary of the approaches used to involve the public and key stakeholders in the preparation of this study, including key consultation findings.

- **Chapter 5 – Problems & Opportunities**: Drawing on relevant data analysis and consultation findings; detail is provided on the identified problems that should be addressed in the South West of Scotland. Consideration is also given to wider Opportunities and Constraints in the study area.

- **Chapter 6 – Transport Planning Objectives**: Based on the key themes identified from the Problems and Opportunities analysis, this section presents the Transport Planning Objectives (TPOs) developed for this study.

- **Chapter 7 – Option Generation, Sifting & Development**: This section details the process used to generate, sift, develop and appraise options identified to address the TPOs for this study, and presents the outcomes from the appraisal.

- **Chapter 8 – Summary and Next Steps**: Outcomes from the appraisal are used to guide the development of next steps.

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[2] The Ayrshire Roads Alliance – comprising East and South Ayrshire Council – delivers shared Council roads and transportation services to communities across East and South Ayrshire.

Background & Context

02

2 Background & Context

2.1 Introduction

This chapter presents an overview of the background to this study, including the policy context against which this study has been taken forward.

2.2 Study Area

Figure 2-1 indicates the boundaries of the study area, which includes Dumfries & Galloway and the southern extents of South Ayrshire and East Ayrshire.
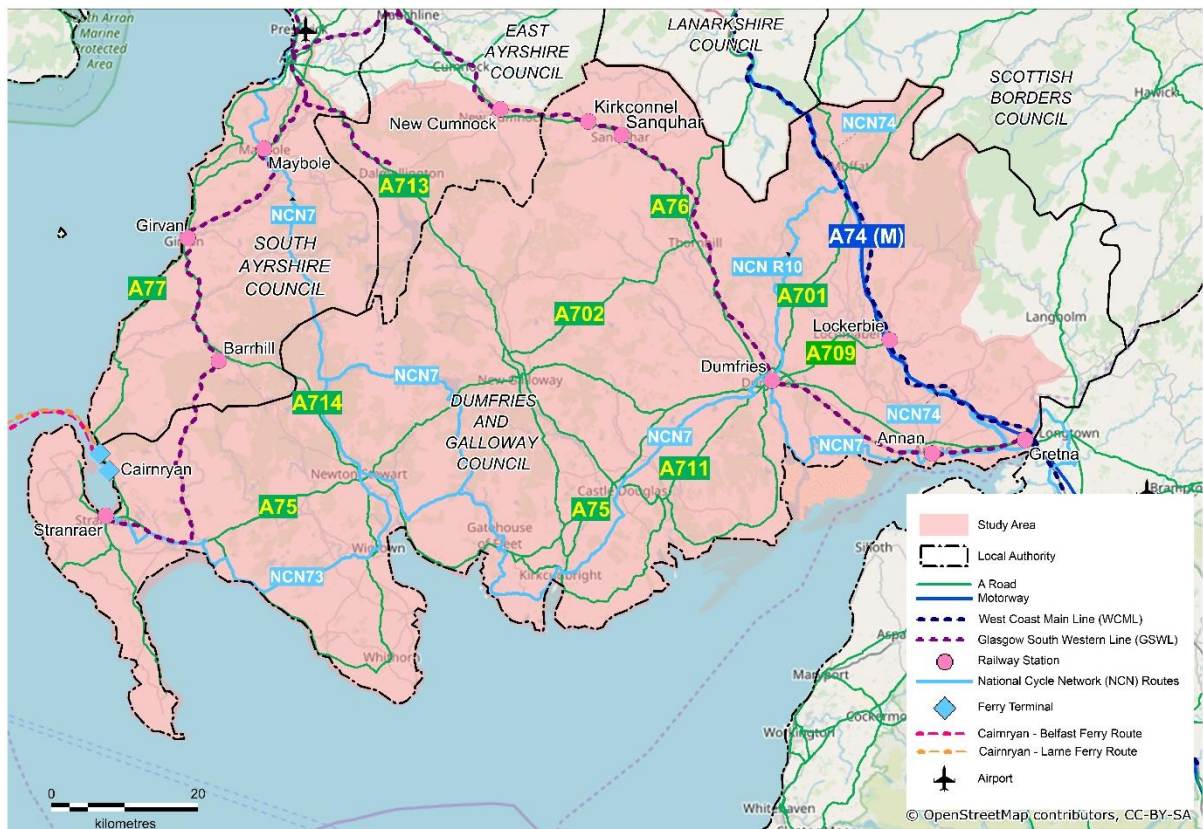
Figure 2-1: Study Area

The key strategic corridors within the study area have been defined considering their use, characteristics, trade flows and logistics operations, particularly with a focus on access to the ports at Cairnryan. The key strategic corridors identified are:

- Gretna – Stranraer

- South of Ayr – Stranraer

- Dumfries – Cumnock

- Dumfries – Lockerbie and Moffat

These corridors include the key routes of the A75, A76, A77, A701 and A709, though it is to be noted that all routes within the study area have been considered and the analysis of problems and opportunities has been carried out across all modes of transport. Rail corridors within the study area include the West Coast Mainline and the Glasgow South West Line (Glasgow to Stranraer and Glasgow to Carlisle / Newcastle via Dumfries).

2.3 Policy Context

Key transport, planning and economic strategies and policies at the national, regional and local levels have been reviewed to provide background context against which this Case for Change study has been undertaken. In completing the Policy Review, focus has centred on identifying key problems and opportunities, and improvement options, identified from previous work.

Figure 2-2 provides an overview of the strategies and policies reviewed.
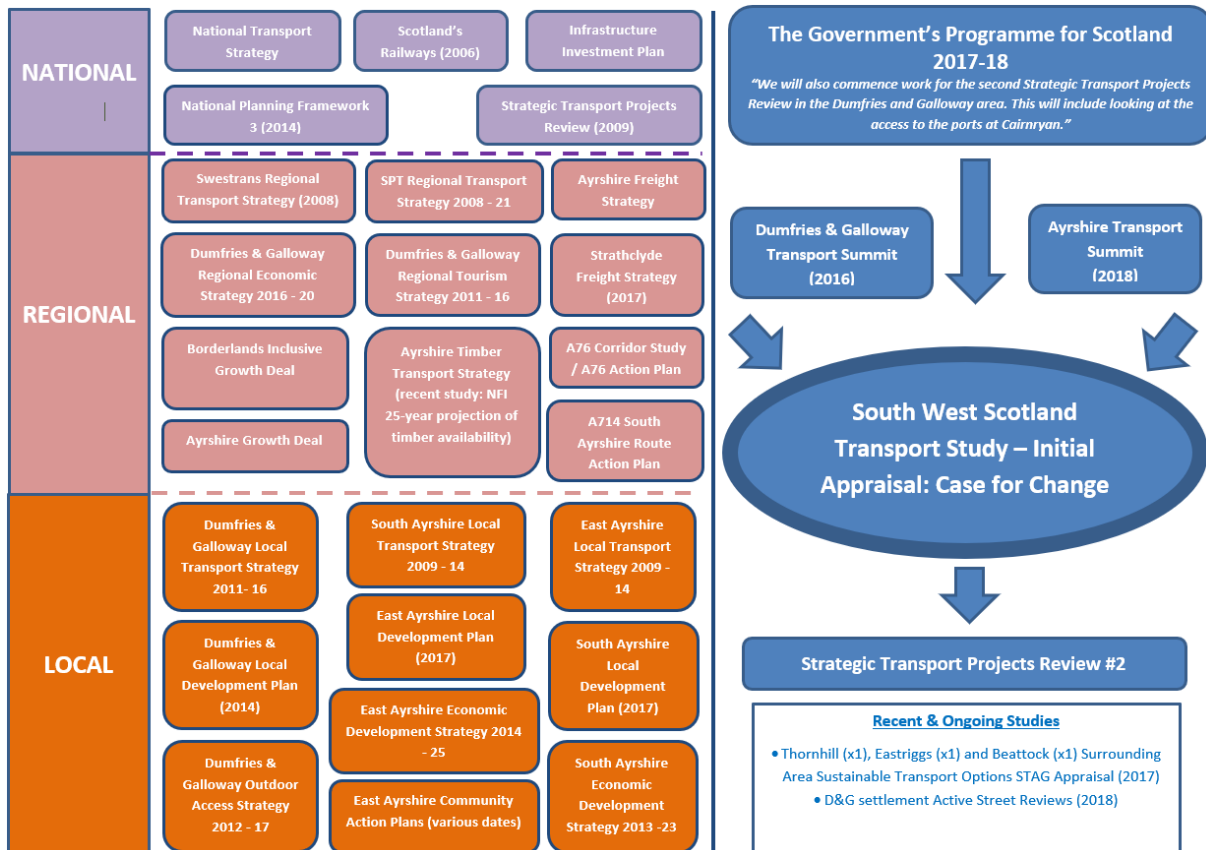
Figure 2-2: Strategy and Policy Overview

At the national level, several key policies provide context for this study and cognisance has been taken of these throughout the process. The Scottish Government's **Programme for Scotland** (PfG) 2017-18 sets out the Government's ambitions to build a modern, dynamic and open economy which benefits everyone in Scotland. This includes a commitment to examine improvements in transport links in the South West of Scotland, indicating that it shall "…commence work for the second **Strategic Transport Projects Review** in the Dumfries and Galloway area. This will include looking at the access to the ports at Cairnryan". The Programme for Government 2019-20 has now also been published. The Programme aims to make Scotland a more successful country with opportunities and increased wellbeing for all and there are four broad themes within the Programme: Ending Scotland's Contribution to Climate Change, A Successful Fair and Green Economy, Improving Outcomes through Our Public Services, and Communities where everyone is Valued, Protected and Respected.

The PfG is closely aligned to the Climate Emergency, particularly under the theme of Ending Scotland's Contribution to Climate Change. The Scottish Government declared a Climate Emergency in April 2019, outlining that action needs to be taken to limit the effects of global warming. The new Climate Change Bill commits to a target of net-zero emissions of all greenhouse gases by 2045, and the Scottish Government aims for an ambitious plan to reduce emissions by 75% by 2030. This strongly demonstrates a commitment by the Scottish Government to reduce greenhouse gas emissions and aligns with sustainability ambitions set out in the **National Transport Strategy 2** (further details below). Dumfries and Galloway Council also declared a Climate Emergency in June 2019 and issued a 12-point plan of commitments. The 12-point plan includes key aspirations such as achieving net-zero carbon status by 2025 and embedding climate change considerations in to all policy measures.

The **National Transport Strategy** was developed in 2009 and refreshed in 2016. The refreshed National Transport Strategy includes the objective to promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network. Since then a new draft National Transport Strategy 2 (NTS2) was published for consultation in July 2019. The draft NTS2 is underpinned by four Priorities: Promotion of Equality, Take Climate Action, Help the Economy Proposer and Improve Health and Wellbeing. Additionally, the NTS2 supports the adoption of a **Sustainable Transport Hierarchy**, which promotes walking, wheeling, cycling, public transport and shared transport options in preference to single occupancy private car use, as well as a **Sustainable Investment Hierarchy**, which prioritises investment aimed at reducing the need to travel unsustainably and maintaining and safely operating existing assets ahead of new infrastructure investment. The NTS2 will act as a 'catalyst for change' by focusing on its priorities and delivering the outcomes to ensure Scotland has a more resilient, reliable and efficient transport system.

At the regional and local level, transport objectives for the region are set out in **SWestrans' Regional Transport Strategy** and the **Dumfries & Galloway Local Transport Strategy**, as well as **SPT's Regional Transport Strategy** and the respective **Local Transport Strategies of East and South Ayrshire Councils**. It is also notable that both SPT and the Ayrshire Roads Alliance have published Freight Strategies in recent years, highlighting the important strategic role of routes in the region to facilitate efficient freight movements associated with the ports at Cairnryan for travel to Northern Ireland, as well as routes serving key markets in the Central Belt and south to England. Both SWestrans and SPT are beginning a process to refresh their respective Regional Transport Strategies and the analysis undertaken in the preparation of the South West Scotland Transport Study will assist the preparation of these important Strategies.

Most recently, the important role of transport infrastructure improvements to address longstanding issues and support economic growth aspirations were the focus of discussion at **Transport Summits** held in Dumfries in 2016 and Kilmarnock in 2018. The Summits brought together officials from across the Scottish Government, local authorities, economic agencies and local stakeholders with an interest in transport to discuss transport-related problems and issues across the region. A key issue discussed related to connectivity issues, including to the ports at Cairnryan, with poor road infrastructure and limited public transport integration highlighted by a number of stakeholders, and interventions put forward across all modes to address identified problems.

As part of the **Growth Deal initiative**, both Ayrshire and The Borderlands (Dumfries & Galloway, Scottish Borders, Northumberland, Carlisle and Cumbria) are involved in taking forward Growth Deals, supported by the UK and Scottish Governments, designed to provide investment that encourages economic growth. Proposals have also been set out by the Scottish Government for the creation of a South of Scotland Enterprise Agency, covering the Dumfries & Galloway and Scottish Borders local authorities, to drive forward economic development. The impetus being given to economic development opportunities in the region, both through the establishment of Growth Deals and a South of Scotland Enterprise Agency, provides further context to this study.

Finally, in taking forward the Case for Change, a number of other transport studies and reports completed over recent years – covering Route Action Plans, Freight Studies and Sustainable Transport feasibility reviews – have been reviewed to inform the baseline of problems and opportunities, as well as potential improvement options, for consideration in this study.

The full list of strategies and reports reviewed in preparing this study including information on how each of these fit within the context of this study is presented in Appendix A.

2.4 Summary

This chapter has presented an overview of the policy context against which this study has been developed. The following chapter provides the baseline transport, socio-economic and environmental conditions in the study area.

Baseline Review

03

3 Baseline Review

3.1 Introduction

This chapter provides a baseline review of transport, socio-economic and environmental conditions in the South West of Scotland drawing in the findings from analysis of traffic and socio-economic data, as well as the results from a high level environmental constraints review. The review outlines existing transport and economic trends in the region. This chapter also provides the basis for the identification of transport-related problems and opportunities which are detailed in Chapter 5.

3.2 Transport Context

This section provides a summary of the existing transport network in the South West of Scotland. The section begins with a summary of transport conditions to and from the ports at Cairnryan, before providing a region wide overview of the current active travel, public transport and road networks.

3.2.1 South West Ports

3.2.1.1   Overview

A key focus for this study is the consideration of access to Scotland's only Irish Sea Ro-Ro (Roll-on Roll-off) ferry routes which operate out of the ports at Cairnryan in the South West of Scotland.

- **P&O Ferries** operate between Cairnryan Port and Larne (around 20 miles north of Belfast) with a crossing time of around two hours. There are seven departures from Cairnryan per weekday with six and five departures on a Saturday and Sunday respectively; and

- **Stena Line** operate between Loch Ryan Port and Belfast with a crossing time of around 2 hours 15 minutes. There are six departures from Loch Ryan with five departures on a Sunday and Monday. In 2011, Stena Line moved from Stranraer to a new site on Loch Ryan, roughly 1.5 miles north of the Cairnryan Port where P&O ferry services are based.

On a typical weekday, there are therefore 13 ferry calls (i.e. arrival + departure) per day at the ports at Cairnryan. Both operators use two vessels on the route and provide a 24-hour service. Although the pattern of ferry calls differs slightly across the day, on average this equates to a ferry call every one hour and 50 minutes at the ports at Cairnryan. Services provided by P&O and Stena Line are wholly commercial.

Ferry operation from the ports at Cairnryan is of a substantial scale with the vessels currently operating the route ranging from around 150m to 200m in length providing circa 1700 – 1950 lane metres of vehicle deck capacity.

3.2.1.2   Traffic Volumes

Table 3-1 provides an overview of traffic volumes at the ports at Cairnryan.

Table 3-1: Ferry Traffic Volumes (2017)[3]

Type	P&O (Cairnryan-Larne)	Stena Line (Loch Ryan-Belfast)	Total
Passengers	551,000	1,202,000	1,753,000
Cars	136,300	276,300	412,600
Goods vehicles	144,200	129,100	273,300
Unaccompanied goods vehicles (trailers)	64,900	64,100	129,000

As shown in Table 3-1, Stena Line has a far larger share of the passenger and car market, in part reflecting the ports used and the on-board offer, whereas the freight market is more evenly split. Between the two operators, 1.75

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[3] SPA S0201 (Passengers), others 'port0499'.

million passengers, 413,000 cars, and over 400,000 goods vehicles were moved in 2017. By way of context, carryings across Scotland's CalMac network in 2017 were 5.2 million passengers, 1.4 million cars but only 80,000 commercial vehicles. It is also notable that around one third of commercial vehicle movements are 'unaccompanied', i.e. trailers which are dropped off / picked up at the port by tractor units with these trailers being loaded / unloaded onto the ferry using 'tugs' based at the port. These are advantageous to hauliers as they can save on lane-meter charges and driver hours.

These figures underline the freight-focussed nature of the Irish Sea routes with the total number of commercial vehicles carried almost matching the number of cars carried at around 400,000. Averaged across the year, around 1,100 commercial vehicles per day are therefore using the ports at Cairnryan, and in rough terms, on average each ferry sails with around 45 commercial vehicles on board, so 45 alight and 45 disembark each time a ferry calls at the ports.

3.2.1.3   Traffic Distribution

Routes from the ports at Cairnryan provide options for those travelling between Great Britain and the island of Ireland. Passenger surveys were undertaken at the ports in 2017 to provide an understanding of origin-destination patterns for cars and commercial vehicles, as shown in Figure 3-1.
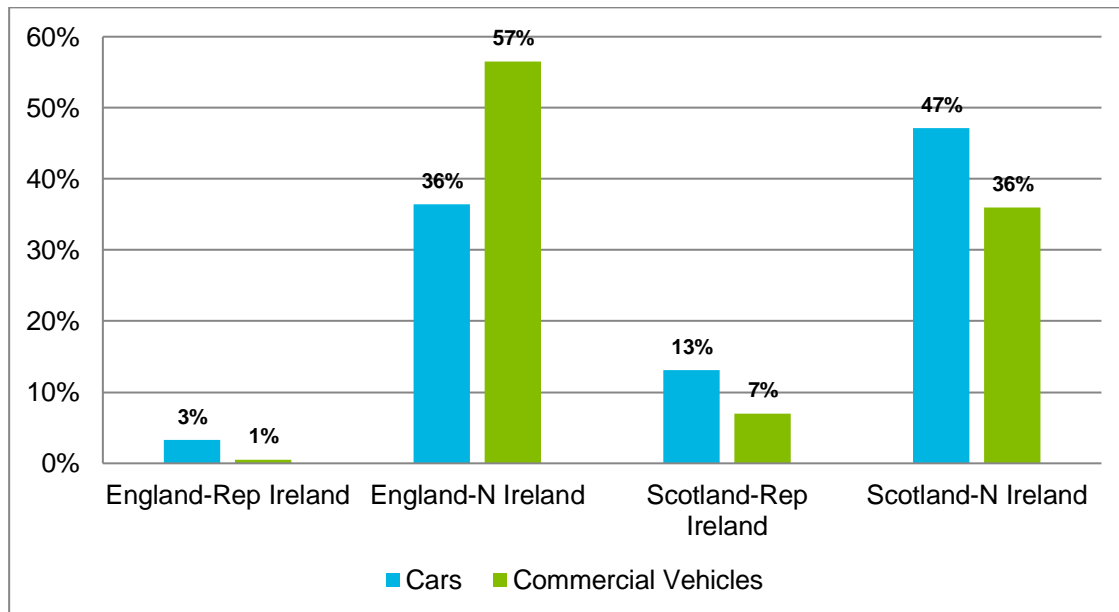
Figure 3-1: Origin-Destination of Trips recorded amongst those traveling Westbound from Great Britain to the island of Ireland

Results indicate that:

- The biggest single car movement is between Scotland and Northern Ireland, whilst the biggest single commercial vehicle movement is between England and Northern Ireland; and

- Trips to / from the Republic of Ireland accounted for 16% of car movements and 8% of commercial vehicle movements. These figures therefore confirm that the large majority of traffic on the route, and indeed more than 90% of freight movements, are associated with Northern Ireland.

Figure 3-2 shows the origins and destinations of car and commercial vehicle traffic departing from the ports at Cairnryan.
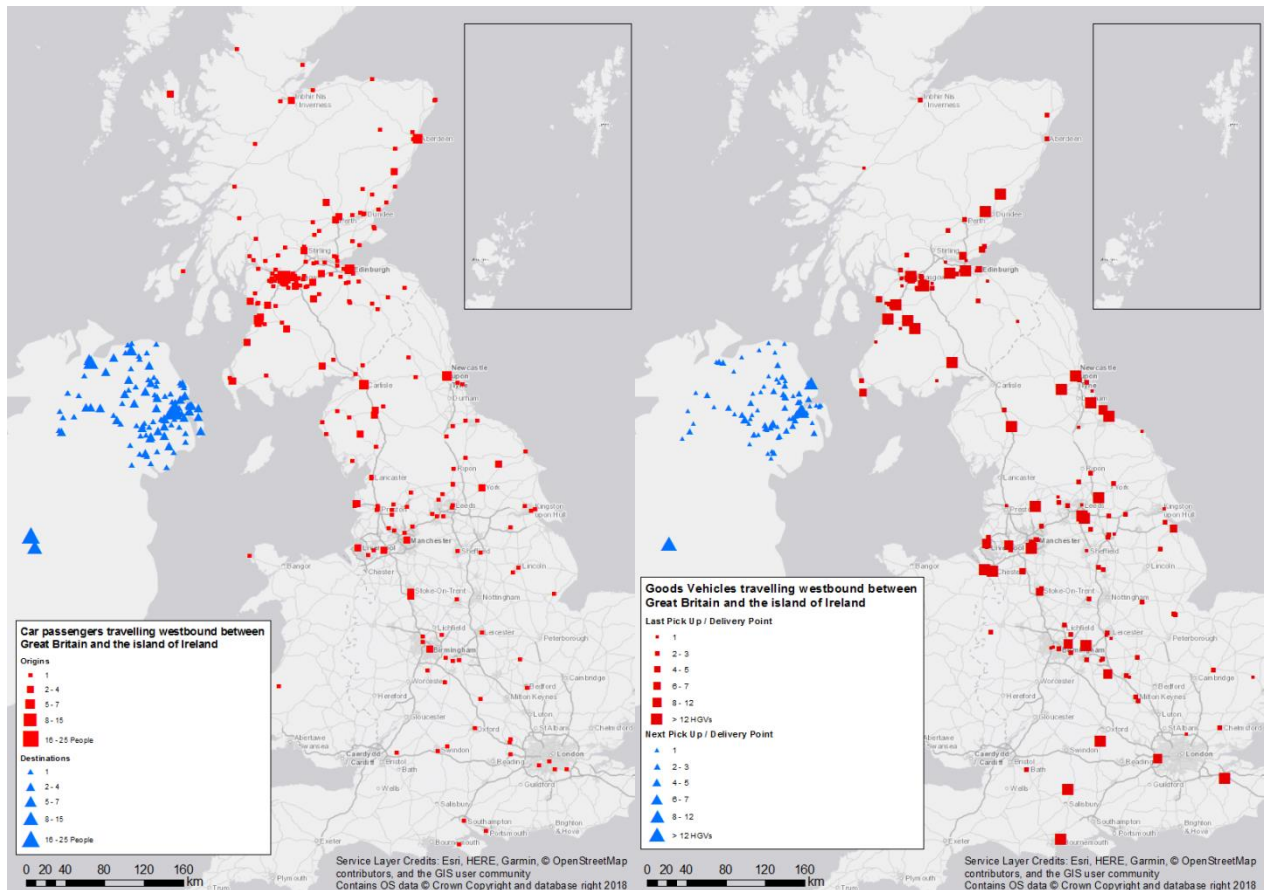
Figure 3-2: Origin Destinations for Car Passengers (left image) and Goods Vehicles (right image) between Great Britain and the Isle of Ireland

As shown in Figure 3-2, car-based journeys are primarily focussed on Scotland, although there is some evidence of journeys originating across much of northern England and the Midlands. In addition to the Central Belt, concentrations of freight movements can be seen around the North West and North East of England in particular, though journeys are also seen to originate from as far away as the south coast, clearly illustrating the national reach of the ports at Cairnryan.

3.2.1.4   A75/A77 Freight Research

To support a greater understanding of goods vehicle movements on the A75 and A77 in South West Scotland, and the importance of these strategic routes in supporting the role and operation of the ports at Cairnryan, surveys were undertaken focused on freight movements on these routes, including Specialised Goods Vehicle Counts (SGVCs) and Roadside Interviews. Key findings from the A75/A77 freight research completed for Transport Scotland in 2018 is presented below:

- **Port observations**, including junction turning counts, confirmed the vehicle departure pattern from the port terminals was characterised by an initial spike of traffic in the first 15 minutes after the ship docked (the accompanied trailers). Mainly cars and motorbikes were allowed off first followed closely by freight vehicles. The initial spike was followed by a longer tail of intermittent freight vehicles which had been transported on the ferry as unaccompanied trailers. Observations also confirmed that the dominant flow of freight vehicles (by numbers) from the ports was towards the A75 rather than the A77. The percentage split across the whole day of survey was two thirds towards the A75 and one third to the A77. However, it should be noted that this varied depending on time of day, ranging from 50% towards both routes for teatime sailings (18:00) to 85% towards the A75 recorded from the night sailing camera video footage (02:00 arrival).

- **SGVCs** were conducted to better understand freight movements at two sites; one on the A70/A77 junction at Ayr and the other at the A75/A76 roundabout in Dumfries. Two days were surveyed at each site in consecutive weeks in November 2017. Over the survey period, 3,700 freight vehicles were observed at the Dumfries count site and 2,900 freight vehicles at the Ayr count site. There was 28% more freight traffic at Dumfries than at Ayr. The analysis aimed to see if the level of traffic on a typical Thursday varied from a Friday as there is a

weekend effect with drivers going back home for the weekend. At Ayr there was 17% less HGV traffic on Friday (1,315) compared to Thursday (1,585) but at Dumfries there was just 3% less freight traffic on the Friday. Both sites had a significant volume of port-related traffic (estimated to be around 35%) but there were other important freight flows directly supporting the economy of South West Scotland. The Dumfries site, reflecting its spatial location, had a higher proportion of forestry traffic than at Ayr and both sites have strong agricultural, food and drink and building sectors.
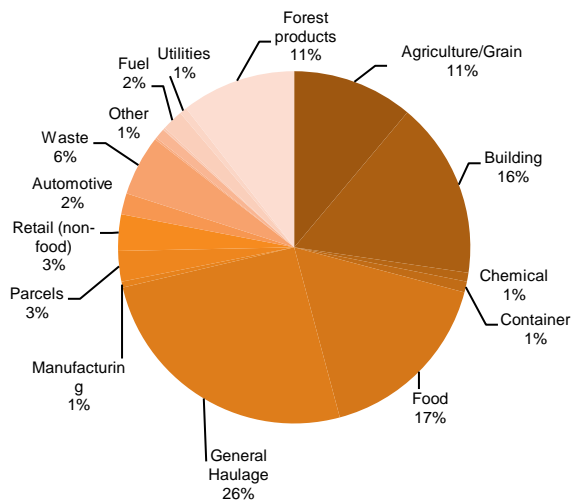
Figure 3-3: Dumfries SGVC Industry Type   **Figure 3-4: Ayr SGVC Industry Type**
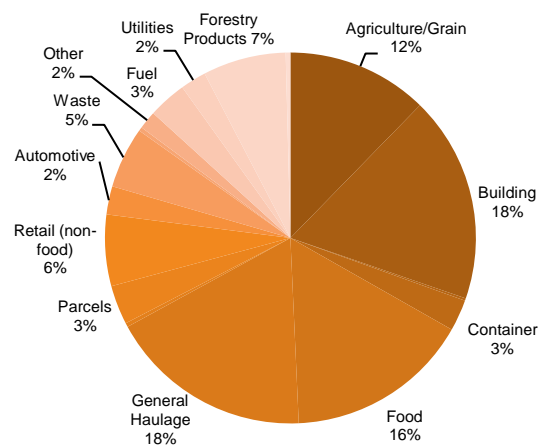
- **Estimated Value of Freight:** Based on the SGVC observations and valuations of the type of goods being transported, approximately £26 million worth of goods per day is estimated to use the A75 East of Dumfries, £20 million on the A75 West of Dumfries with approximately £10 million moving on the A77 south of Ayr. Table 3-2 below summarises the estimated value of freight flows on key routes in the South West of Scotland based on the SGVC work undertaken.

Table 3-2: Summary of value of freight flows

Road	Location of Valuation Value	Value
A70	East of Ayr	£4m
A75	East of Dumfries	£26m
A75	West of Dumfries	£20m
A76	North of Dumfries	£6m
A77	North of Ayr	£11m
A77	South of Ayr	£10m

- **Hauliers:** The SGVC surveys noted a significant volume of temperature-controlled vehicles dominated by a relatively small number of hauliers with notable retail traffic from the liveried vehicles of supermarkets seen at Ayr. Vehicles carrying forestry produce and agricultural tippers were the most observed hauliers at Dumfries and Ayr respectively.

- **Automatic Number Plate Recognition (ANPR) Survey:** An ANPR survey at the ports at Cairnryan clearly showed the wave effect of the ferry arrivals into the ports which can cause platoons of traffic heading east along the A75 and north on the A77. There is also the longer, intermittent tail of the unaccompanied trailers being collected for onward movement. There is a benefit of unaccompanied trade on the road network in that traffic is spread more evenly throughout the day rather than being in platoons. The 21:52 and 22:00 arrivals were shown to be particularly popular with inbound freight.

Overall, the analysis undertaken as part of the freight research confirmed the strategic importance of the A75 and A77 to the freight industry in terms of providing access to the short sea crossings from the ports at Cairnryan.

3.2.1.5 The Strategic Importance of the ports at Cairnryan

The ports at Cairnryan provide:

- the only surface trade route between Scotland and Northern Ireland / Ireland;

- the only ferry routes to enable personal travel directly between Scotland and Northern Ireland, two nations with historic and cultural ties;

- a short sea crossing route to Northern Ireland for traffic from across England;

- local employment on the ferries themselves and at the ports. During the engagement exercise for this study, it was noted by the ferry operators that over 300 people are employed at the ports and on the ships, with a considerable proportion of these employees living locally. In addition, while local benefits of through-traffic to the ports which does not stop (such as driver spend) is likely to be limited, many freight business ferry users employ HGV drivers (and other support staff) from the local area. Any reduction in port usage could therefore reduce locally available employment opportunities; and

- employment across Scotland in the freight and logistics sector involved in moving freight using the South West of Scotland ferry routes.

The future viability and success of these routes is therefore of key importance to Scotland as a society and an economy. The Irish Sea ferry market is highly competitive and any loss of major customers to other routes could lead to a diminution of the current service with associated negative impacts. The following section considers the wider Irish Sea ferries market to provide context.

3.2.1.6 Wider Context: Great Britain - Island of Ireland Ferry Market

There are four operators: Stena, P&O and Irish Ferries providing a full range of ferry services on the Irish Sea, and Seatruck which provides a range of freight only services. The current routes and operators are set out in Figure 3-5 and Table 3-3.
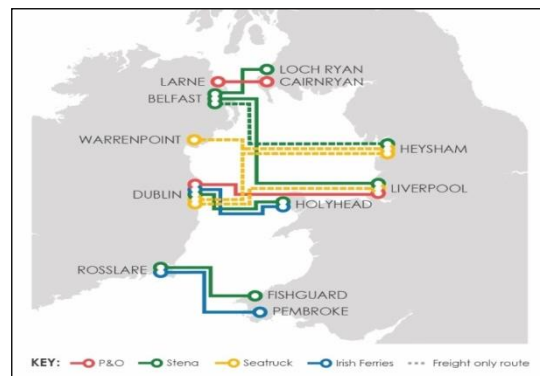
Figure 3-5: Map of Irish Sea Ferry Routes

Table 3-3: Current Routes between Great Britain and the Isle of Ireland

UK Port	Operator	Route	Departures per day
South West of Scotland	P&O	Cairnryan to Larne	7 (Mon-Fri) 6 (Sat) 5 (Sun)
	Stena[4]	Cairnryan (Loch Ryan) to Belfast	6 (5 on Sundays and Mondays)
Heysham	Seatruck (f)[5]	Heysham-Warrenpoint	2 (Tue-Fri) 1 (Sat-Mon)
	Seatruck (f)	Heysham - Dublin	1 (Tue-Sun) 0 (Mon)

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[4] Stena moved its operations out of Stranraer in 2011 to the deeper Loch Ryan Port, together with the introduction of two new ships. This investment was valued at £200m.
[5] Note that (f) denotes a freight ship sailing. These sailings accept a maximum number of 12 passengers per crossing (excluding crew). Foot passengers cannot be accommodated. These services tend to specialise in the movement of unaccompanied freight (i.e. trailers).

UK Port	Operator	Route	Departures per day
	Stena (f)	Heysham - Belfast	2 (Tue-Fri) 1 (Sat-Mon)
Liverpool	Seatruck (f)	Liverpool – Dublin	4 (Tue-Fri) 2 (Sat-Mon)
	P&O	Liverpool – Dublin	3 (Tue-Sat) 2 (Mon) 1 (Sun)
	Stena	Liverpool – Belfast	2 (1 on Monday)
Holyhead	Stena	Holyhead-Dublin	4
	Irish Ferries	Holyhead-Dublin	4
Fishguard	Stena	Fishguard-Rosslare	2
Pembroke	Irish Ferries	Pembroke-Rosslare	2

These services therefore provide a range of connections between Great Britain and the island of Ireland with up to 39 departures per day from Great Britain[6]. Given this range of options, the choice of ferry route for any trip will vary depending on the origin / destination and the nature of the trip, and as such for many people and hauliers there will be a choice of route and therefore competition between routes and operators.

The main 'competitor' ports for the ports at Cairnryan are therefore Heysham (for freight), Liverpool and Holyhead in North Wales. The pattern of commercial vehicle movements shown suggests that these routes could be used at the expense of the ports at Cairnryan, particularly for commercial vehicles. The nature of the road links to these competing ports is one of the factors in the decision-making process, with stakeholder consultation undertaken as part of this study highlighting concerns that poor connectivity to the ports at Cairnryan could see the region lose business if roads are not improved; particularly given the access and transport infrastructure improvements to other ports in the UK.

- The 'Bay Gateway' project opened in 2017 and provides a direct link from the Heysham and Morecambe peninsula to Junction 34 of the M6, bypassing congestion in Lancaster and providing substantially reduced journey times[7]. In 2018, a new £10m linkspan and additional berth was also opened, which will reportedly allow the port to accommodate larger vessels[8].

- Liverpool has connectivity to the national motorway network via the M62, M56 and M53.

- The Welsh Government has a programme for further investment in the A55 dual carriageway leading from the M6 / M56 to Holyhead, including proposals for a third Menai Crossing to Anglesey. There are also supporting schemes being progressed for the removal of the last two remaining roundabouts at J15 / J16 on the A55 and also a new alignment at Deeside from the A55 onto the A494 / towards the M56.

All three of these ports therefore benefit from direct connections to high standard roads, and there are potentially further improvements in the offing. Analysis undertaken for this study[9] has considered typical average road speeds for the 'last 100 miles' of the journey to each port as follows:

- Cairnryan (from Gretna): 44mph

- Heysham (from M6 north): 55mph

- Liverpool Stena Terminal (from M6 north): 51mph

- Holyhead (from M56/M6): 58mph

On this basis, travelling the last 100 miles to Cairnryan takes up to 30 minutes longer than the equivalent trip to Holyhead. This good and / or improved road connectivity could further affect the choice of Irish Sea route, and potentially undermine the competitive position of the ports at Cairnryan. It is worth noting that while the journey

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[6] Isle of Man Steam Packet operate all services to / from the Isle of Man from Heysham, Liverpool / Birkenhead, Belfast and Dublin with 13 sailings weekly to Heysham and 12 sailings weekly to Liverpool.
[7] https://heyshamlink.lancashire.gov.uk/
[8] http://www.logisticsbusiness.com/transport-distribution/ports-shipping/expansion-plans-for-heysham-with-10m-facility-investment/
[9] Here Journey Time Data

between Cairnryan and Ayr is less than 100 miles (45 miles) and is therefore not considered above, typical speeds on this section are also slow, averaging around 38mph. Differing HGV speed limits between Scotland (where lorries over 7.5 tonnes are limited to 40mph on single carriageway roads) and England/Wales (where the speed limit for lorries over 7.5 tonnes is 50mph on single carriageway roads) may also be a factor in the journey time results.

3.2.1.7   Ferry Market

There are two distinct markets for travel from Great Britain to Northern Ireland:

- Road Freight, in the form of self-propelled vehicle and unaccompanied trailers; and

- Persons as foot passengers or car-based travellers.

Note that the DfT port data[10] breaks down carryings at the 'nation' level, i.e. the nation in which the other port sits. It does not distinguish the ultimate destination of ferry users by nation and thus it cannot identify for example how much Holyhead-Dublin traffic is actually destined for Northern Ireland.

Road Freight

Commercial vehicle RoRo traffic between the Great Britain ports above and the rest of the UK (including Isle of Man) and Ireland totalled 1.76 million movements in 2017, equating to 23.7 million tonnes of goods. Of this, 52% of movements were between British and Irish ports and 48% were between British and Northern Irish ports[11].

The share of this market by Great Britain port is shown in Figure 3-6, split by Ireland and Northern Ireland (including the Isle of Man).
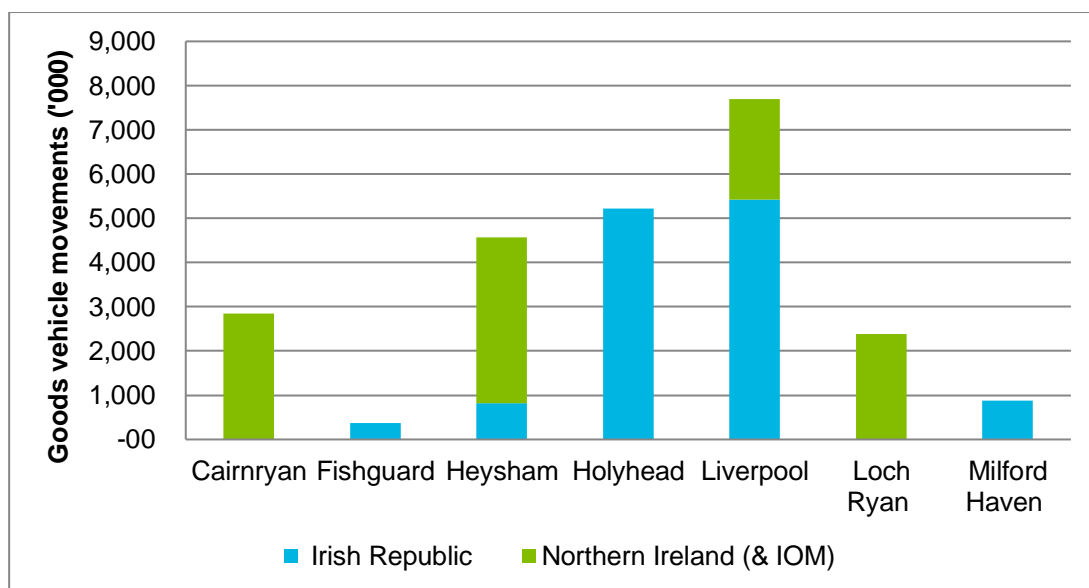
Figure 3-6: Freight Market Share of Great Britain Ports in 2017

On this measure, the four main freight movements are therefore:

- Holyhead to Ireland;

- South West Scotland (combined) to Northern Ireland;

- Liverpool to Ireland; and

- Heysham to Northern Ireland.

The South West Scotland ports account for 23% of the total Irish Sea freight market in 2017. Further analysis of the market share for routes directly to Northern Ireland is shown in Figure 3-7 (2017 figures).

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[10] https://www.gov.uk/government/statistical-data-sets/port-and-domestic-waterborne-freight-statistics-port
[11] These figures also include the Isle of Man. However, the population of the Isle of Man is only around 85,000 compared to around 1.87m in Northern Ireland, so the impact of this on the figures will be small. It should also be noted that Ireland does also have direct ferry links to mainland Europe (e.g. to Roscoff and St Malo from Dublin, Cork and Rosslare).
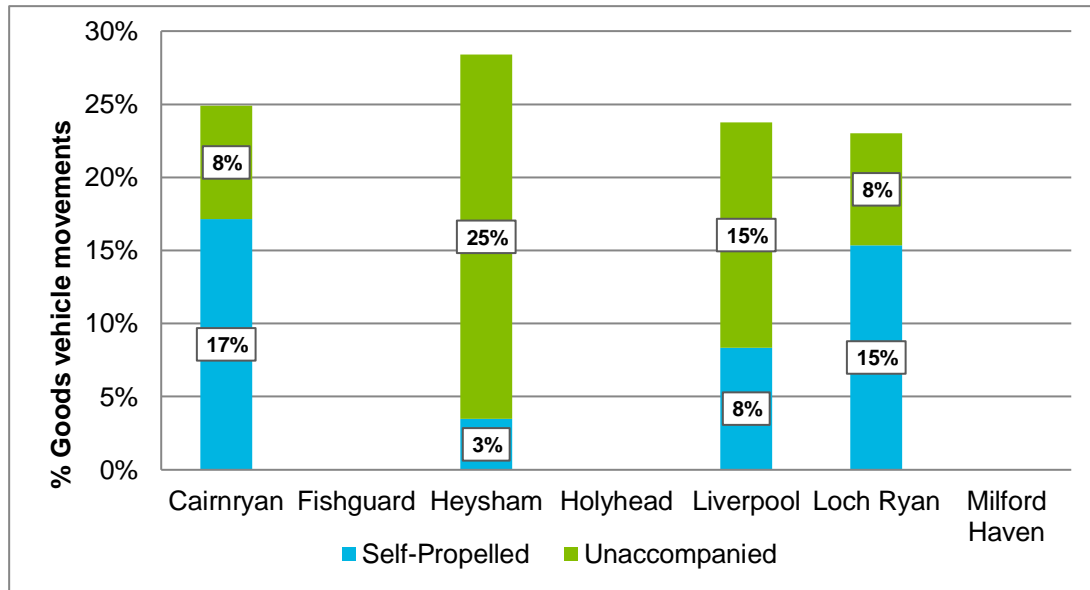
Figure 3-7: Northern Ireland Freight Market Share in 2017

The Scottish ports account for 48% of this market, but as Scottish ports do not serve the Isle of Man, the share of the Northern Ireland market will be slightly higher than this[12]. Heysham traffic is dominated by unaccompanied freight whilst the majority of freight at the ports at Cairnryan is self-propelled.

Passengers (Cars)

Car traffic between the Great Britain ports and the rest of the UK (including Isle of Man) and Ireland totalled 1.34 million movements in 2017, meaning there are actually fewer car than commercial vehicle movements.
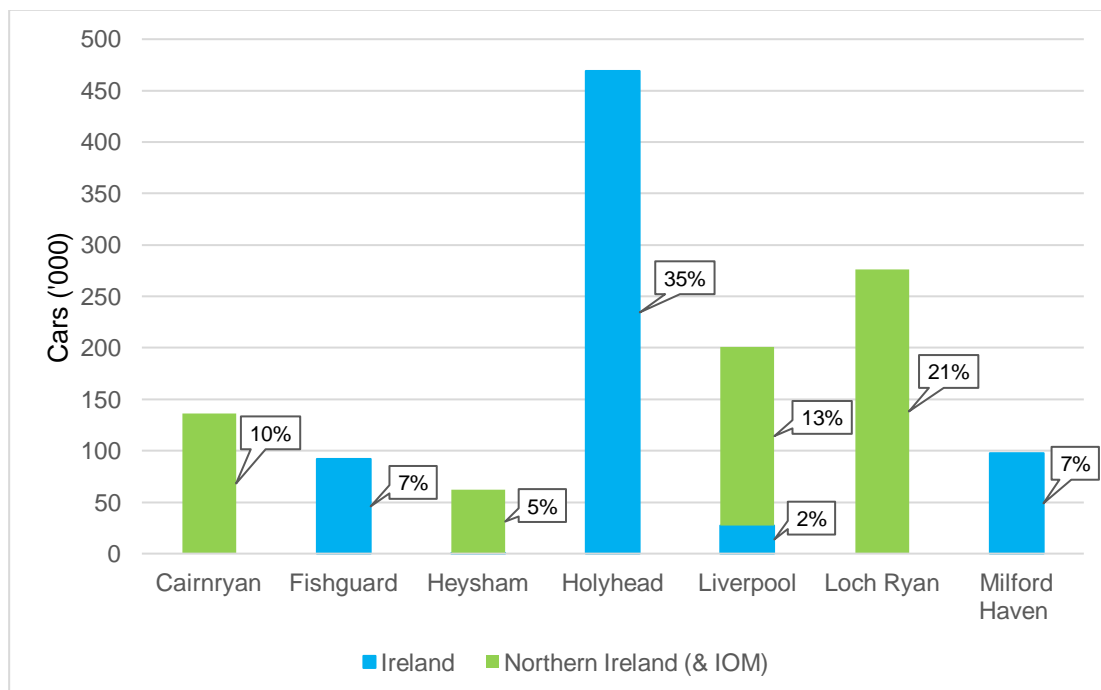
Figure 3-8: Irish Sea Car Traffic Movements from Great Britain Ports in 2017

The Holyhead to Ireland market is by far the largest segment in the Irish Sea car market, with the Scottish ports accounting for 31% of this total. Heysham services are freight only.

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[12] Note, it is not possible to separate out the Isle of Man volumes, which will be included in the Heysham figures.

Of this total, 186,000 passenger vehicles were transported to / from the Isle of Man in 2017[13]. In line with supply, we can assume that these are split evenly between the two routes (Liverpool and Heysham). Accounting for this means that the Scottish ports account for around 87% of the Great Britain to Northern Ireland car market.

3.2.1.8 Trends over Time

The absence of passenger and car-based services out of Heysham reduces the competition in this Great Britain-Northern Ireland market. The greater threat to the Scottish ports is therefore in the freight market. The overall Irish Sea freight market over time is shown in Figure 3-9.
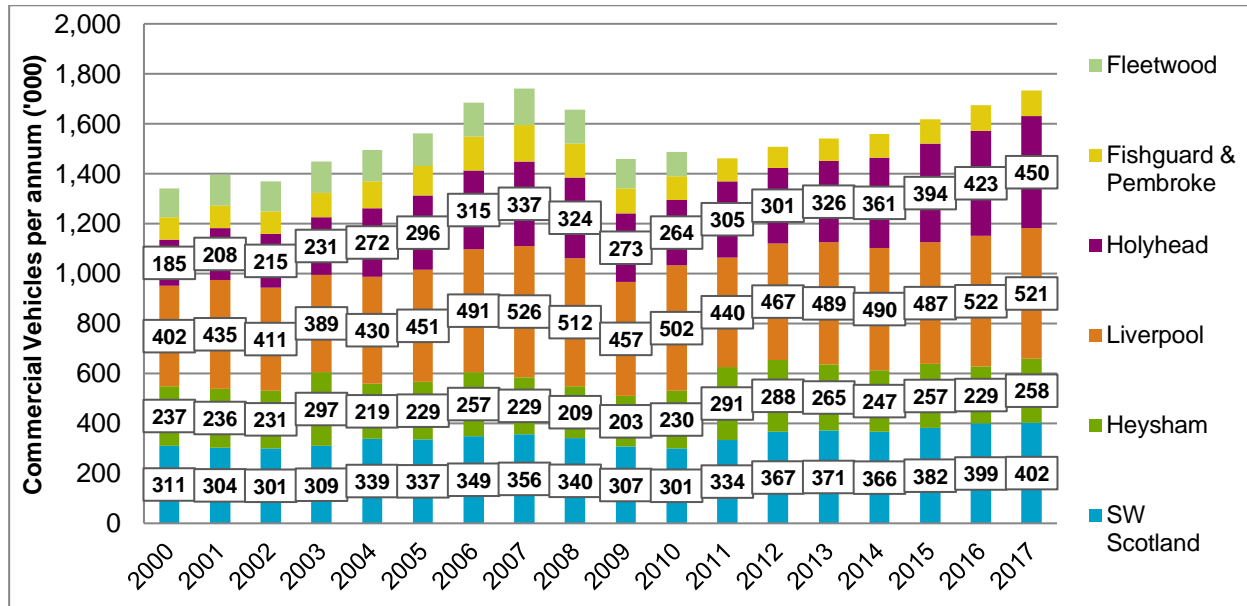
Figure 3-9: Irish Sea Freight Market, 2000-2017

As shown in Figure 3-9, overall freight volumes fluctuate in a broad reflection of the wider UK and wider European economy. Volumes bottomed out in 2009 reflecting the recession of that period and are now 30% higher than 2009 with steady growth observed since 2011. Figure 3-10 presents the evolution of market shares between these routes over the same period.
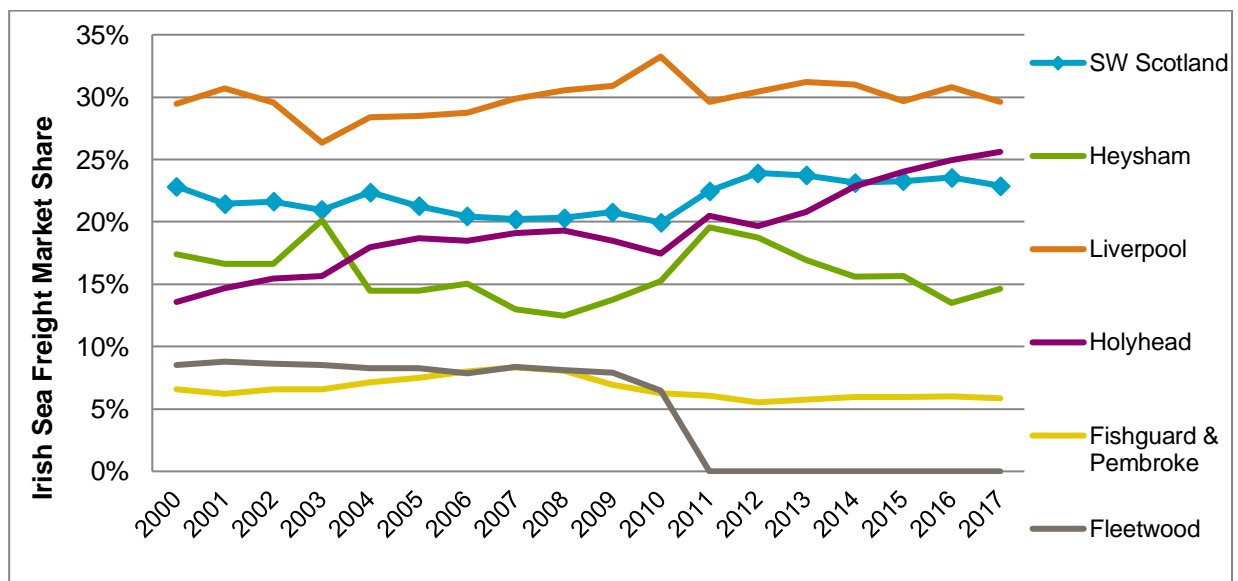
Figure 3-10: Irish Sea Freight Market Share

Based on the market share analysis undertaken, the following observations can be drawn:

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[13] https://www.gov.im/about-the-government/departments/infrastructure/harbours-information/harbour-traffic-information/2017-archived-information/

- In the last four years, the Cairnryan Ports' share of the Irish Sea freight market has remained broadly steady at just under a quarter.

- The main gainer of market share in recent years has been Holyhead which has grown from 20% to over 25% since 2011.

- Heysham's market share has actually reduced since 2011 before bouncing back in 2017.

- Data provided to this study by ferry operators suggests that in the year to date April 2018, South West Scotland routes had declined by 1.4% whilst Heysham routes had increase by 1.4%.

3.2.1.9 Summary

As set out at the beginning of this report, a key aim of this study has been to consider the rationale for transport improvements across the South West of Scotland, with a particular focus on access to the ports at Cairnryan. Analysis has therefore been concentrated on understanding existing access arrangements to the ports and their passenger and freight market share relative to other Great Britain ports. Across the analysis presented, the strategic importance of the ports at Cairnryan is clear, with evidence provided of freight traffic travelling from across the UK to access the ports at Cairnryan owing to the relatively shorter sailing time compared to competitor ports. Research has also shown however that journey times to the ports at Cairnryan are considerably longer for the last 100 miles of their journey relative to Heysham, Liverpool and Holyhead which support the concerns raised by stakeholders in South West Scotland about a potential loss of ferry market share to competitor ports owing to relatively poorer surface access arrangements.

3.2.2 Active Travel

There are several National Cycle Network (NCN) routes within the study area, as detailed below.

- **NCN Route 73 (South)** runs from Stranraer to Newton Stewart. The 41 mile stretch is predominantly on-road.

- **NCN Route 7** connects Sunderland and Inverness. The Glasgow to Carlisle section runs through Maybole, Newton Stewart, Castle Douglas, Dumfries and Gretna Green. This route is mainly on-road with occasional off-road sections.

- **NCN Route 74** connects Gretna and Glasgow following a route very similar to the A74(M). The 70 mile route is predominantly on-road, though there are some traffic free routes.

- **NCN Regional Route 10** runs between Dumfries and Beattock and is a mixture of on-road and traffic free sections.

Figure 3-11 shows traffic free routes (green) and on-road routes (purple) on the National Cycle Network. As shown, the majority of the NCN network is classified as on-road.

Figure 3-11: National Cycle Network[14]

Baseline active travel levels were unavailable for this study, though a number of active travel audits undertaken for communities in the Dumfries and Galloway region have been analysed to consider the nature of barriers and constraints to increasing active travel levels, as discussed further in Chapter 5.

3.2.3 Rail Network

The following section presents an overview of supply and demand issues for the rail network in the South West of Scotland drawing on relevant data analysis including the results from rail passenger interviews, including car park surveys, undertaken by Transport Scotland across the region in 2018.

3.2.3.1   Supply

There are two rail lines serving the South West of Scotland, as follows:

* Glasgow South West Line (GSWL)
    * o   Glasgow to Stranraer
    * o   Glasgow to Carlisle / Newcastle via Dumfries
* West Coast Mainline (WCML)
    * o   London / Birmingham to Glasgow

The routes are shown in Figure 2-1. There is no rail access in the Stranraer to Gretna Corridor, meaning communities along the route have to travel up to 35 miles to access their nearest station. The *Castle Douglas and Dumfries railway* and *Portpatrick and Wigtonshire Joint Railway* formerly linked Dumfries and Stranraer but was closed in 1965.

3.2.3.2   Demand

Rail Trips by Station

Figure 3-12 shows the total number of journeys to and from each of the rail stations within the study area between July 2017 and June 2018[15].

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[14] Map obtained from Sustrans website: https://www.sustrans.org.uk/map-ncn
[15] Data covers the ScotRail four weekly periods 2018/P5 to 2019/P4 which covers the period 19/07/2017 to 26/06/2018.
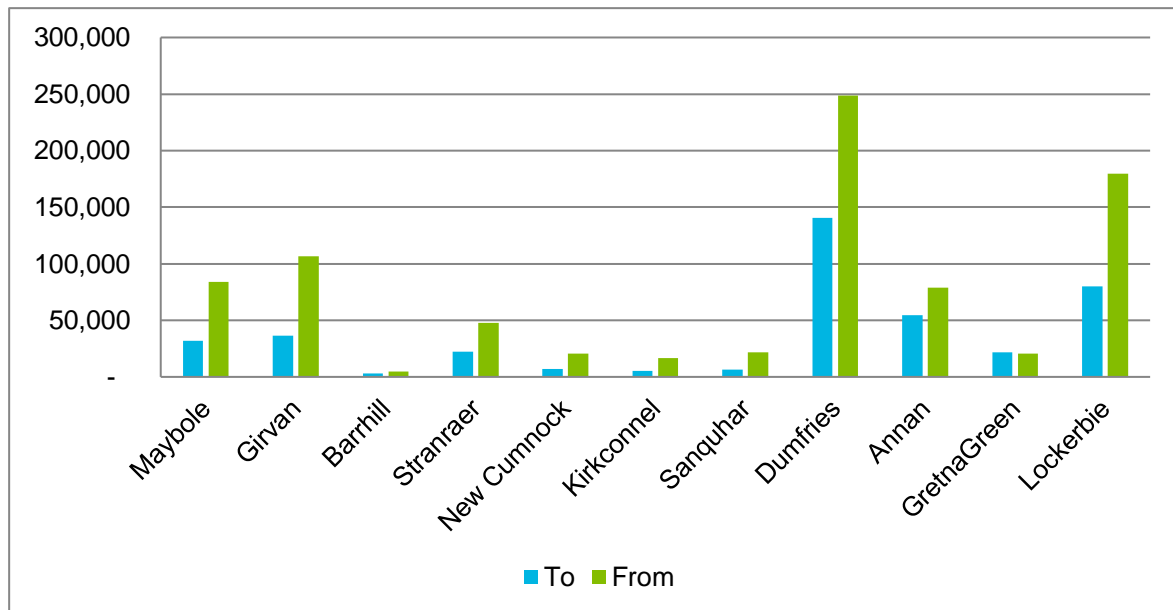
Figure 3-12: Number of Journeys to and from stations within the study area[16]

As shown, Dumfries has the highest number of inbound and outbound journeys of all the stations within the study area, with Lockerbie on the WCML attracting the second highest number of passengers.

On the GSWL to Stranraer, Girvan has the largest number of outbound and inbound trips, followed by Maybole and Stranraer with Barrhill attracting relatively few passengers. New Cumnock, Kirkconnel, and Sanquhar all attract a similar proportion of passengers, with the overall numbers travelling to/from these stations comparatively low. Gretna is the only station in the study area with a higher proportion of inbound than outbound passengers.

The high number of passengers using Lockerbie Station is likely to be a result of the enhanced service from this station to the Central Belt and the cheaper fares compared to the equivalent journeys from Dumfries. Overall, a review of rail journey times and frequencies from stations in the South West of Scotland highlights that:

- Journey times from Lockerbie to Glasgow (55m) are significantly quicker than the equivalent journeys from Dumfries (1h 44m) and, during the week, connections are more frequent. Similarly, journey times from Lockerbie to Edinburgh (1hr 01m) are significantly quicker than the equivalent journeys from Dumfries (2h 18m) with only indirect connections available between Dumfries and Edinburgh.

- The operating day when travelling from Lockerbie to Glasgow / Edinburgh is much shorter on Saturday compared to weekdays with the last return before 19:00 compared to after 22:00 during the week which may limit the opportunities to undertake weekend and evening based activities in Edinburgh / Glasgow.

Table 3-4 shows the anytime return fares (reviewed at November 2019) when travelling from Dumfries / Lockerbie to Glasgow / Edinburgh. By way of a comparison, the anytime return fare to Glasgow from the stations on the Stranraer GSWL are included in Table 3-5. As shown in Table 3-4, owing to the different operators on the GSWL compared to the WCML, in addition to journey times being quicker as noted above, fares between Lockerbie and Edinburgh / Glasgow are cheaper than the equivalent journeys from Dumfries[17]. In comparison, fares to Glasgow from the stations on the GSWL to Stranraer increase broadly in line with journey distance.

Table 3-4: Anytime Return (Return within one month) from Dumfries / Lockerbie to Glasgow / Edinburgh[18]

Station	Glasgow	Edinburgh
Dumfries	£35.90	£158.20*
Lockerbie	£32.00	£39.90**

* Dumfries – Edinburgh fare is based on an Anytime Short Distance Return (within one month) ticket.
** Lockerbie – Edinburgh fare is based on Anytime Short Distance Return (return within one month) ticket.

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[16] Source: LENNON 2017/18
[17] It is noted that fares from Dumfries can be cheaper where separate legs of the journey are purchased separately e.g. Dumfries to Carlisle and Carlisle to Edinburgh / Glasgow.
[18] Correct as of January 2020

Table 3-5: Anytime Return (Return within one month) to Glasgow from the stations on the GSWL to Stranraer[19]

Station	Glasgow
Stranraer	£27.40
Barrhill	£23.80
Girvan*	£21.40
Maybole*	£18.00

* Fares between Girvan / Maybole and Glasgow are based on Anytime Day Return (Return same day) fares.

Figure 3-13 shows the number of trips between Dumfries / Lockerbie and the Glasgow and Edinburgh terminus stations. Owing to the faster journey times, more frequent services, and cheaper fares on the WCML compared to the GSWL, there are a higher number of trips between Lockerbie and Glasgow / Edinburgh than between Dumfries and Glasgow / Edinburgh.
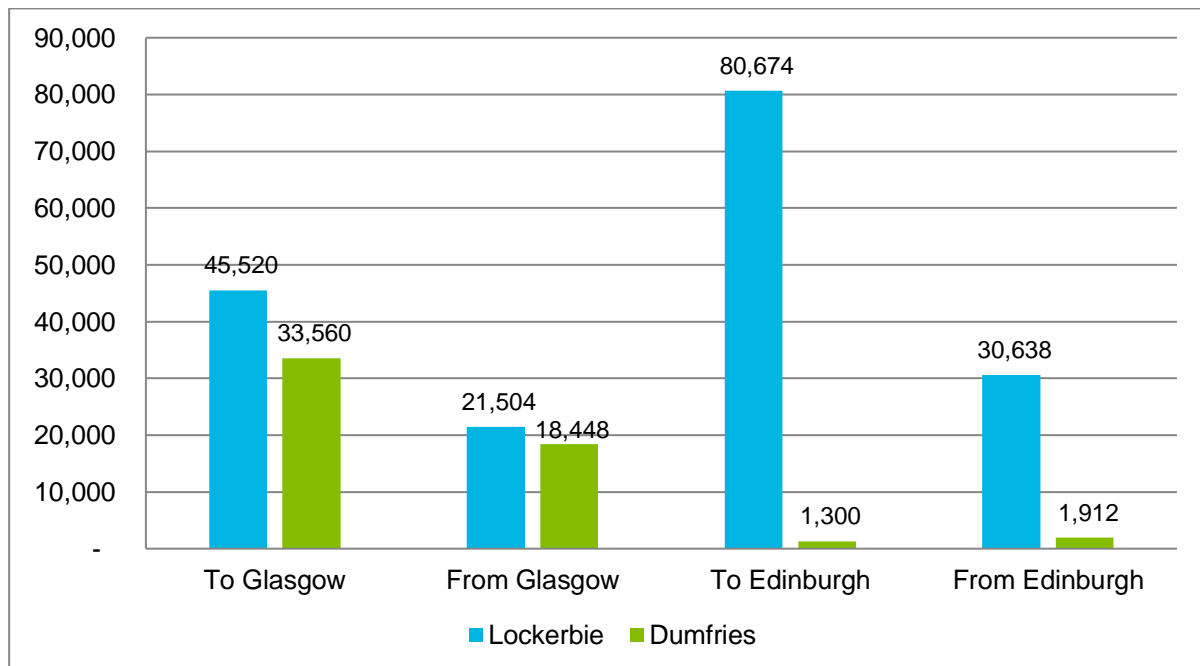
Figure 3-13: Outbound and inbound trips between Dumfries / Lockerbie and Glasgow / Edinburgh terminus stations[20]

Origins and Destinations of Rail Trips

Based on analysis of 2017/18 LENNON data, a review has been undertaken of the most common origin and destination stations for each station within the study area. Key points are presented below:

Glasgow South West Line - Glasgow to Stranraer:

- The majority of trips on the GSWL Stranraer line are northbound. At both Stranraer and Barrhill, the most popular origin and destination is Glasgow while at Maybole and Girvan, the most popular origin and destination station is Ayr.

Glasgow South West Line – Glasgow to Carlisle / Newcastle via Dumfries:

- The direction of travel on the rail line between New Cumnock and Dumfries is mixed. While the majority of trips from New Cumnock are northbound (to either Glasgow or Kilmarnock), there is more of an even split between northbound and southbound trips at both Kirkconnel and Sanquhar, while the proportion of trips to Dumfries increases on progressing further south on the line.

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[19] Correct as of February 2019
[20] LENNON Data

- The majority of trips on the section of the railway between Dumfries and Gretna are eastbound, with Carlisle the dominant origin and destination at all three stations. At both Annan and Gretna, the proportion of outbound trips to Carlisle is far higher than the equivalent figures for Dumfries, highlighting the importance of Carlisle as a regional centre.

West Coast Mainline:

- The majority of trips from Lockerbie are northbound with the Edinburgh terminus stations (Edinburgh Waverley and Haymarket) accounting for the largest proportion of inbound and outbound trips (38% and 45% respectively), followed by the Glasgow terminus stations (27% and 25% respectively).

Station Catchments

Figure 3-14 shows the geographical spread of the origins of respondents to the station surveys grouped by the station at which they were surveyed.
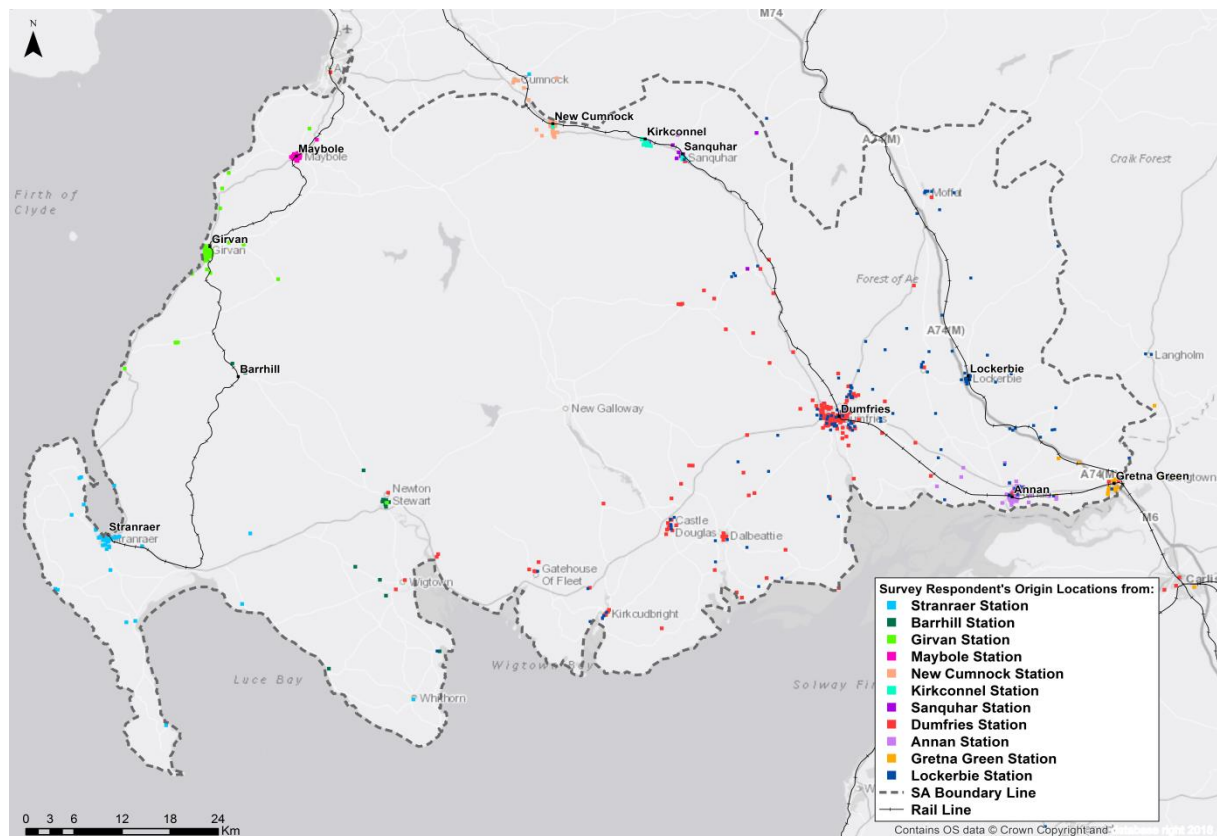
Figure 3-14: Geographical spread of origins of rail station survey respondents

Results indicate:

- As may be expected Dumfries Station has a large catchment with passengers travelling from as far as Wigtown in the south of the study area, Thornhill on the A76 corridor, Moffat on the A701 corridor, and Carlisle to the south east.

- Lockerbie Station also has a large catchment similar to that of Dumfries. Lockerbie Station's large catchment is likely a result of people travelling to the station to take advantage of the enhanced service and cheaper fares on the WCML compared to the GSWL, with many people living in Dumfries and west of the town electing to travel to Lockerbie for onward travel to the Central Belt rather than travelling direct from Dumfries.
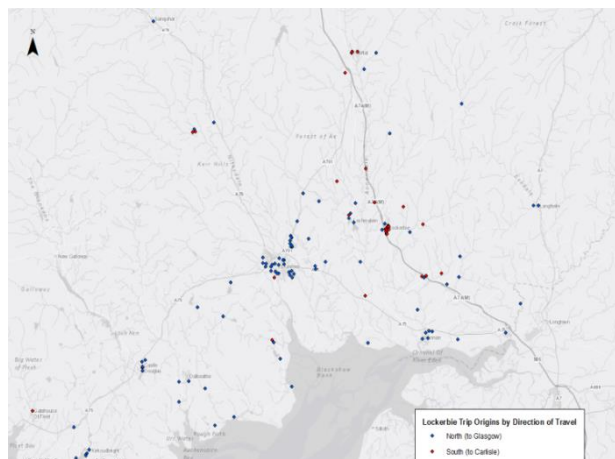
Figure 3-15: Lockerbie Trip Origins Direction of Travel

This is supported by Figure 3-15 which shows that large numbers of those travelling north from Lockerbie, started their journey in Dumfries and west of Dumfries.

- The catchment area for Barrhill Station is also relatively large with just 18% of passengers surveyed travelling less than 3km to access the station and a considerable proportion travelling from Newton Stewart and south of the A75. This is likely to be a result of the lack of rail access in the A75 corridor with Barrhill being the closest station for many in these locations.

- As may be expected, given that it is the last station on the line, Stranraer also has a relatively dispersed catchment area with respondents travelling from as far as Drummore at the southern end of the Rhins of Galloway and Kirkcolm on the western coast of Loch Ryan.

- Outwith Dumfries, Lockerbie, Barrhill and Stranraer, the remaining stations have more concentrated catchments, with the majority of users surveyed (more than 70% in each case) drawn from within a 3km radius.

Journey Purpose

Analysis has also been undertaken of travel purpose for each station in the study area as recorded via the rail passenger interviews completed as part of this study. Key points are noted below:

Glasgow South West Line - Glasgow to Stranraer:

- While there are high levels of weekday commuting from Maybole (71%), the proportion of weekday commuting trips from the other stations on this route is below the study area average, with Stranraer and Barrhill achieving the lowest levels of commuting of all the stations in the study area (39% and 14% respectively).

Glasgow South West Line – Glasgow to Carlisle / Newcastle via Dumfries:

- New Cumnock has the highest level of commuting trips amongst the stations on this section, with 76% of weekday trips and, perhaps unusually, 83% of weekend trips commuting based. The level of weekday commuting trips at New Cumnock is the third highest in the study area following Gretna and Lockerbie. Levels of commuting at the other stations on this section of line are below the study average.

- The majority of weekday trips on the GSWL between Dumfries and Gretna are commuting based, with 62%, 59%, and 79% of weekday trips from Dumfries, Annan, and Gretna respectively commuting based. Overall, Gretna has the highest proportion of weekday commuting trips (79%) of all the stations in the study area, significantly higher than the study area wide average (64%). Given the direction of travel on the line, the majority of these are likely to be Carlisle bound.

West Coast Mainline:

- Lockerbie Rail Station on the WCML has the second highest (after Gretna) level of weekday commuting of all the stations in the study area with 78% of weekday trips commuting based.

Mode used to access the station

Figure 3-16 shows the travel mode used to access each station by respondents to the rail passenger survey.
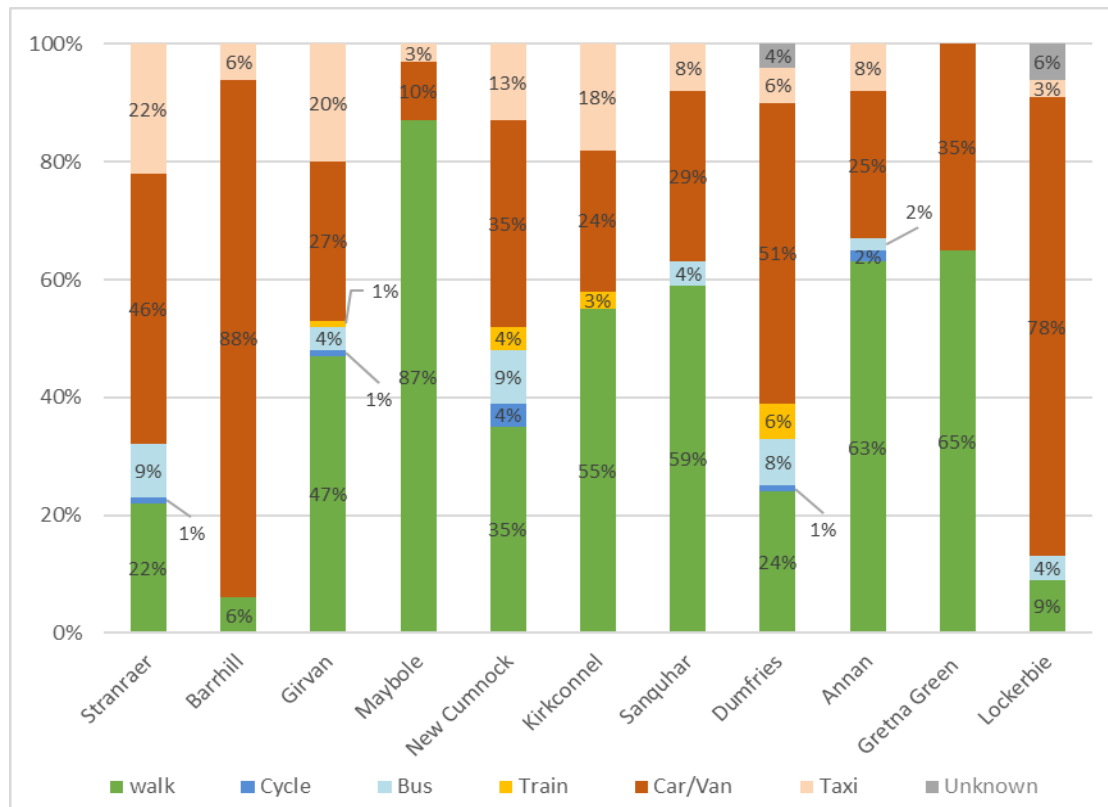
Figure 3-16: Mode of transport used to access the station

Overall, Barrhill Station recorded the highest car use and the lowest proportion of people walking to the station, with 88% (n=15) of those surveyed travelling to the station by car and just 6% (n=1) walking. This is in line with the catchment data which suggests that a high proportion of station users travel from some distance away. No rail users surveyed at Barrhill said they accessed the station by bus as there is no direct service to the station.

Lockerbie Station also recorded a high proportion of car users (78%, n=122) and a relatively small proportion of people walking to the station (9%, n=14). Again, this accords with the catchment data analysis which shows the large catchment area of Lockerbie Station. Bus use at Lockerbie is relatively low, with just 4% (n=7) of respondents travelling to the station by this mode.

Dumfries and Stranraer Stations also have a relatively high car use (51% and 46% respectively) which again accords with the catchment analysis. While 9% (n=6) of respondents at Stranraer travelled to the station by bus, it is worth noting that all of these were either local trips from within Stranraer itself or from Cairnryan – there were no recorded bus trips from further afield.

Maybole Station records the highest proportion of walk trips (87%, n=29) and the smallest proportion of car trips (10%, n=3). This is likely a result of the local nature of the catchment for this station, with 97% (n=32) of the respondents surveyed at Maybole travelling less than 3km to access the station.

Overall, bus use is relatively low across all stations, with New Cumnock and Stranraer recording the highest levels (9%, n=4 and n=6 respectively). Conversely, taxi use is relatively high, with several stations recording more than 15% use. This may suggest there is potential to improve bus provision to access stations in some locations.

3.2.4 Bus Network

The bus sector within the study area faces significant challenges with the overall number of passenger journeys decreasing and service cutbacks in some places which can leave communities without a public transport option.

Table 3-6 provides a summary of the key buses on each of the strategic transport corridors within the study area along with their approximate weekday frequency and Figure 3-17 illustrates current network coverage and frequencies (i.e. buses per hour) for a sample period.

Table 3-6: Summary of key bus services on each of the strategic transport corridors in the study area

Corridor	Service No.	Route	Operator	Approx. Frequency
Gretna – Stranraer	X75	Stranraer - Dumfries or Carlisle	Stagecoach West Scotland	3 per day
	79 / 179	Dumfries - Annan - Gretna - Carlisle / Annan - Gretna - Carlisle	Stagecoach West Scotland	19 per day / 18 per day
	373	Dumfries - Terregles - Shawhead	Houstons Coaches	5 per day
	379	Annan - Gretna	McCalls Coaches	4-5 per day
	385	Dumfries - Carrutherstown - Dalton - Annan	Houstons Coaches / McCalls Coaches	8-9 per day
	416	Newton Stewart - Whithorn - Stranraer	Stagecoach West Scotland	2 per day
	430	Newton Stewart - Stranraer	Stagecoach West Scotland	3 per day
	500	Dumfries - Stranraer	Stagecoach West Scotland	8 per day
	502	Dumfries - Castle Douglas	Stagecoach West Scotland	5 per day
	503	Dumfries - Springholm - Castle Douglas	Houstons Coaches	7 per day
	555	Dumfries - Castle Douglas / Dumfries - Kirkcudbright	Dumfries and Galloway Council Buses	1 per day / 1 per day
South of Ayr – Stranraer	58 / 60 / 358 / 360	Stranraer - Girvan - Ayr / Girvan - Ayr	Stagecoach West Scotland	8 per day / 23 per day
Dumfries – Cumnock	213	Thornhill - Dumfries	Dumfries and Galloway Council Buses	4 per day
	221	Wanlockhead - Sanquhar / Sanquhar - Kirkconnel	Stagecoach West Scotland and W Brownrigg	4 per day / 10 per day
	236	Dumfries - Kirkton - Thornhill - Penpont	Houstons Coaches	10 per day
	246	Cumnock - Sanquhar - Thornhill - Dumfries / Kirkconnel - Sanquhar - Thornhill - Dumfries / Thornhill - Dumfries	Stagecoach West Scotland	7 per day / 2 per day / 4 per day
Dumfries – Lockerbie / Moffat /	74	Dumfries – Beatcock – Moffat	Stagecoach West Scotland	5
	X74	Dumfries – Moffat – Lesmahagow – Glasgow	Stagecoach West Scotland	14 per day

Edinburgh / Glasgow	101 / 101A / 102	Dumfries – Edinburgh	Stagecoach West Scotland	12 per day
	81	Dumfries - Lockerbie	Stagecoach West Scotland	21 per day
	381	Dumfries - Lochmaben - Lockerbie	Houstons Coaches. McCalls Coaches, and Stagecoach West Scotland	5 per day
	117	Lockerbie - Templand - Lochmaben - Hightae - Dumfries	Houstons Coaches	3-5 per day
Lockerbie – Carlisle	382	Lockerbie – Gretna – Carlisle	Stagecoach West Scotland	4 per day
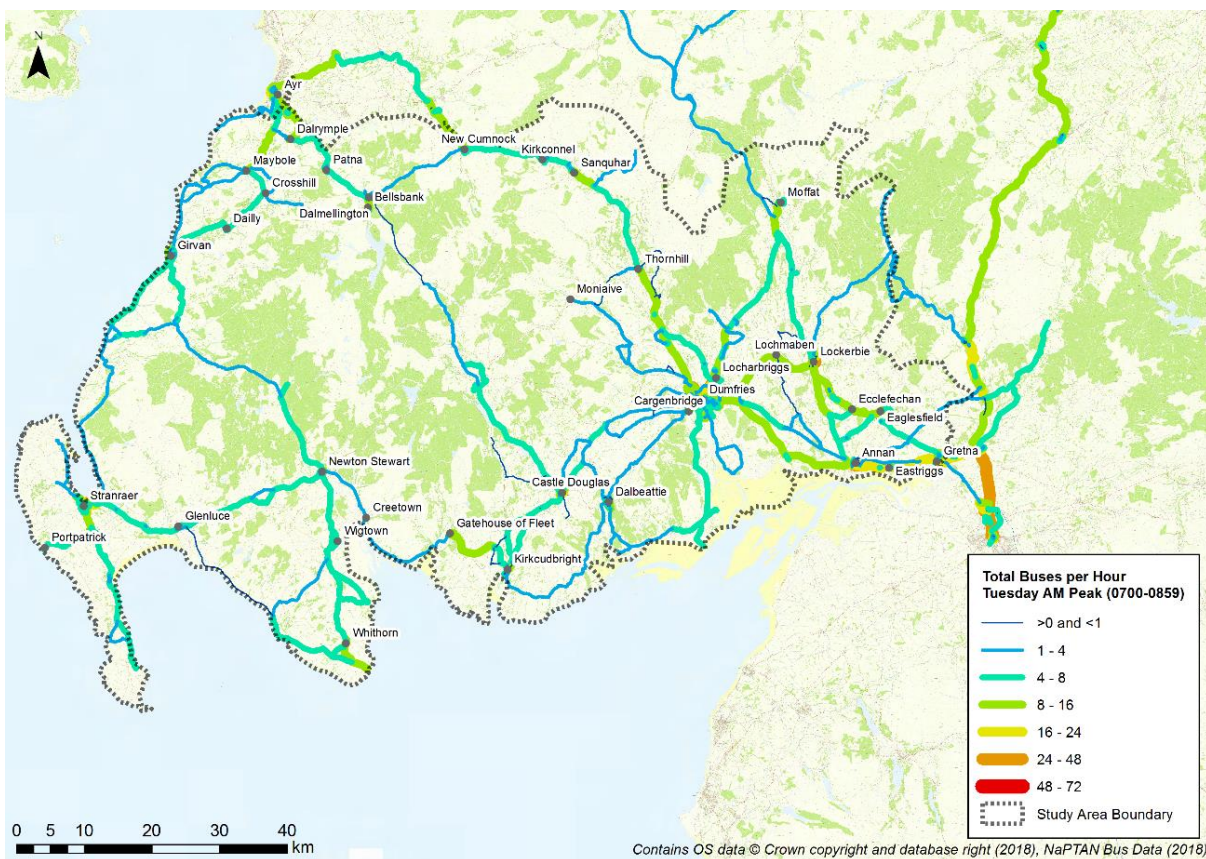
Figure 3-17: Total Buses per Hour Tuesday AM Peak (0700-0859)

As shown, the most developed part of the network and the majority of the commercial services are concentrated in the most populated area in and around Dumfries in the east of the study area as well as Ayr in the north-west. There is relatively high bus frequency between Girvan / Maybole and Ayr and on the key corridors into Dumfries, including the A75 corridor between Dumfries and Gretna, the A76 between Dumfries and Thornhill, the A701 between Dumfries and Moffat, and the A709 between Dumfries and Lockerbie.

Bus service frequency is lower across the more rural parts, with particularly low frequency levels between Glenluce and Port William, across several routes into Castle Douglas and Kirkcudbright, between Moniaive and Thornhill, and between Bellsbank and Carsphairn in the centre of the study area. Lower levels of bus connectivity in some of the more rural locations could contribute to a range of social issues, including difficulty accessing employment, social isolation, and higher car ownership.

It is important to note the commercial reality of the bus industry across Dumfries & Galloway within a rural context, which can lead to transportation issues in the area, including the ongoing viability of the bus network. Figure 3-18 shows the operating commercial and subsidised buses in the area and Table 3-7 shows SWestrans bus subsidy budget for the last few years.

Figure 3-18: Commercial and subsidised bus corridors within the study area

As indicated by Table 3-7, there has been a 9% overall subsidy reduction provided by SWestrans between 2015/17 to 2018/19.

Table 3-7: Available SWestrans Bus Subsidy

Year	2015/16	2016/17	2017/18	2018/19
Available Subsidy (£)	£3,735,600	£3,473,040	£3,400,798	£3,395,741
Change in subsidy available compared to previous year		-7%	-2%	-0%

Overall, two-thirds of buses operating in Dumfries and Galloway operate with partial or full subsidy, and this subsidy is reducing due to budgetary pressures. There is uncertainty regarding how much funding will be available in the future. The available resources which operate the bus network across the region are also heavily utilised throughout the day over a variety of routes. For commercially run services, the overall viability of services is, in many cases, only achievable due to the high use on services in the mornings and afternoons by school children. As such, the overall bus network and operation across the region is fragile and even minor changes to routes or services (or any new competition with rail), which have the potential to tie up resources or affect patronage, can have major consequences. This is an important point when considering any changes to the bus network. For those without access to a car, there is often no alternative other than the bus and bus services are lifeline services.

3.2.5 Road Network

3.2.5.1 Supply

From a road perspective, the study focuses on the trunk roads within the study area (A75, A77, A76, and the A701) as well as the A709 which, while not a trunk road is one of the busiest routes in the network and the primary link between Dumfries and Lockerbie providing access to the A74(M). Further information on each of these road corridors is provided below.

A75 Gretna to Stranraer

The A75 between Gretna and Stranraer is the main east-west link in the study area, linking Stranraer and its ferry ports at Cairnryan with the A74(M) at Gretna, close to the Border with England and the M6 Motorway. The route is approximately 155km long and (along with the A751 and the section of the A77 south of the ports at Cairnryan) forms part of European Route 18 (E18) which extends from Craigavon (Northern Ireland) to St Petersburg in Russia. The route is primarily single-carriageway standard. In the last ten-year period as part of a wider Route Action Plan, Transport Scotland has completed several improvement projects[21] on the route, primarily involving the development of stretches of 2+1 carriageway in order to provide overtaking opportunities. In addition, in 2014, the Dunragit Bypass, a 5.3km section around the village of Dunragit in the west of the study area was completed. With the completion of the Dunragit bypass, there are now only two settlements, Springholm and Crocketford, which are not bypassed and through which the speed limit on the A75 reduces to 30mph

A77 South Ayr to Stranraer

The A77 connects the south of Glasgow and Stranraer and extends around 82km within the study area. The road is mostly single carriageway and passes through numerous settlements, including: Minishant, Maybole, Kirkoswald, Turnberry, Girvan, Lendalfoot, Ballantrae, Smyrton, Auchencrosh, and Cairnryan through which the speed limit reduces to 30 or 40mph. Average speed cameras operate on part of the A77 between Ardwell Bay, south of Girvan, to Bogend Toll by Symington. In May 2019, construction began on the £30 million Maybole bypass[22]. The bypass will involve the delivery of a new 5km section of single carriageway and aims to relieve congestion in the town and improve safety and journey time reliability on the A77 trunk road.

A76 Dumfries to Cumnock

The A76 is a single carriageway road running between Dumfries and Kilmarnock. The section within the study area, between Dumfries and Cumnock, covers around 68km. It is mainly rural in nature; however it passes through the settlements of New Bridge, Holywood, Blackwood, Closeburn, Thornhill, Carronbridge, Mennock, Sanquhar, Kirkconnel and New Cumnock. At Enterkinfoot, the A76 has currently been limited to one-way traffic due to landslip works. A scheme has been proposed to construct a new section of trunk road to replace the current route between Thornhill and Enterkinfoot[23].

A701 Dumfries to Moffat

The A701 is a single carriageway road which extends for approximately 32km from Dumfries to Moffat, joining the A74(M) east of Beattock. There is a narrowing of the road to cross the bridge over Kinnel Water at St. Ann's and subsequent single lane running with traffic signals.

A709 Dumfries to Lockerbie

The A709 is a single carriageway road from Dumfries to Lockerbie via Lochmaben. While the route does not form part of the trunk road network, it is well used forming the primary arterial route between Dumfries and Lockerbie. In the centre of Lochmaben the route turns a 90-degree bend.

3.2.5.2 Demand

Traffic Volumes

Figure 3-19 shows the 2017 Annual Average Daily Traffic (AADT) and the change in vehicle volumes between 2008 and 2017 for both Transport Scotland and Department for Transport (DfT) count sites.

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[21] Including the Barfil to Bettyknowes Project, the Newton Stewart Project, Planting End to Drumflower Project, Cairntop to Barlae Project, Dunragit Bypass, and Hardgrove to Kinmount Improvement Project.
[22] https://www.transport.gov.scot/news/work-begins-on-maybole-bypass/
[23] https://www.transport.gov.scot/road-order/the-a76-trunk-road-enterkinfoot-to-thornhill-trunking-order-201/
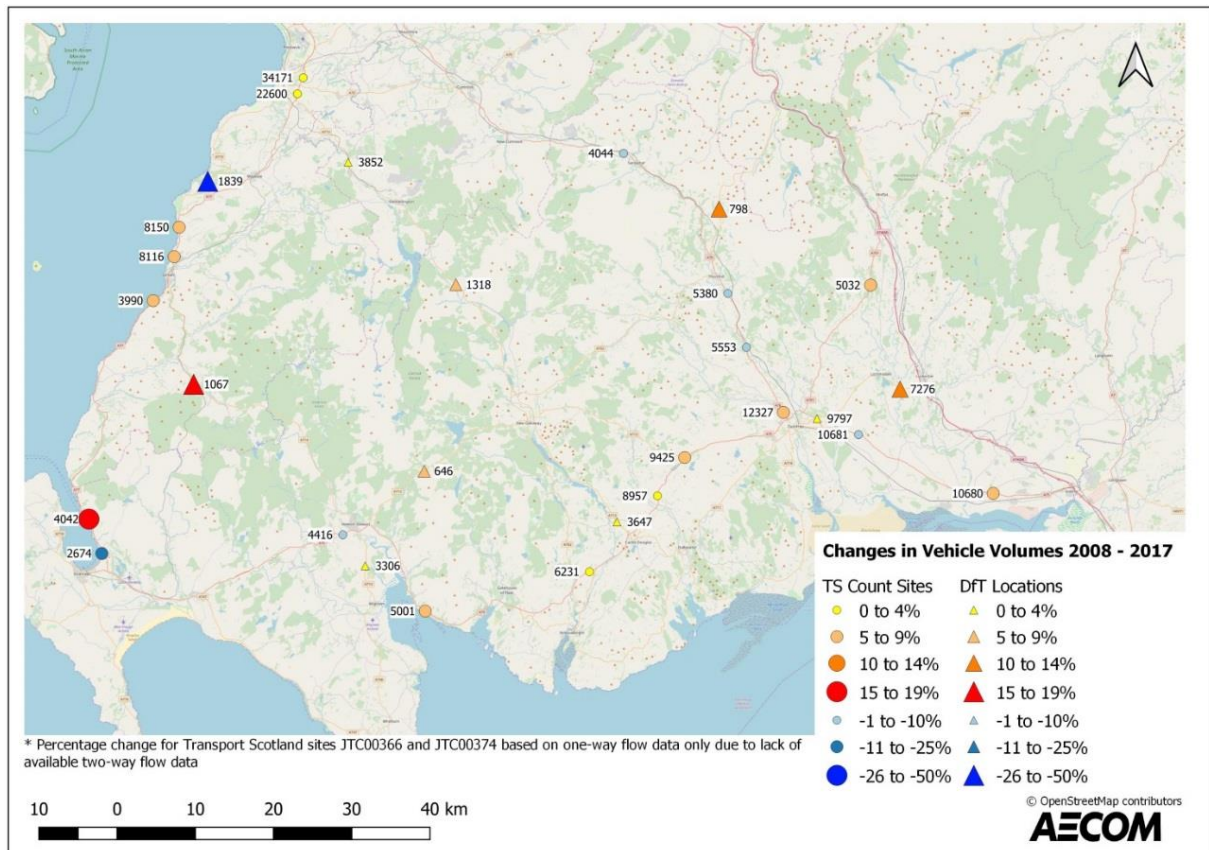
Figure 3-19: 2017 AADT figures and change in vehicle volume 2008-2017

The analysis shows that in 2017 traffic flows across the key routes in the study area varied as follows:

- Traffic levels on the **A75** decrease from east to west, with the highest levels between Gretna and Dumfries (10,700) and the lowest levels west of Newton Stewart (4,400).

- Traffic levels on the **A77** generally decrease from north to south. Approximately 34,000 vehicles were recorded on the A77 east of Ayr in 2017 compared to 8,150 at Turnberry, and just 2,700 at Innermessan just north of Stranraer.

- Traffic levels on the section of the **A76** within the study area are generally higher closer to Dumfries, with approximately 12,300 vehicles recorded on the A76 immediately north of Dumfries, compared to just 4,044 just north of Sanquhar.

- There is just one ATC site on the **A701**, which recorded an AADT of just over 5,000 vehicles in 2017.

- While the **A709** is a local road, traffic levels are higher than the A701 trunk road, with 9,800 vehicles recorded on the route immediately east of Dumfries and 7,300 vehicles recorded immediately east of Lochmaben.

Between 2008 and 2017, traffic levels on the A77 have remained relatively consistent. It is notable that there has been a considerable increase in traffic at Cairnryan (growing by 17%) and a corresponding fall at the ATC just south of the A77/A751 junction at Innermessan (-11%) over this same period, which it is assumed is related to the relocation of Stena Line from Stranraer to Cairnryan in 2011.

Vehicle Composition

To provide more information about traffic in the study area, a series of 12hr Roadside Interviews (RSIs) were undertaken during October 2017. The location of the six sites surveyed as well as the direction of travel is shown in Figure 3-20. A summary of key findings is provided below.
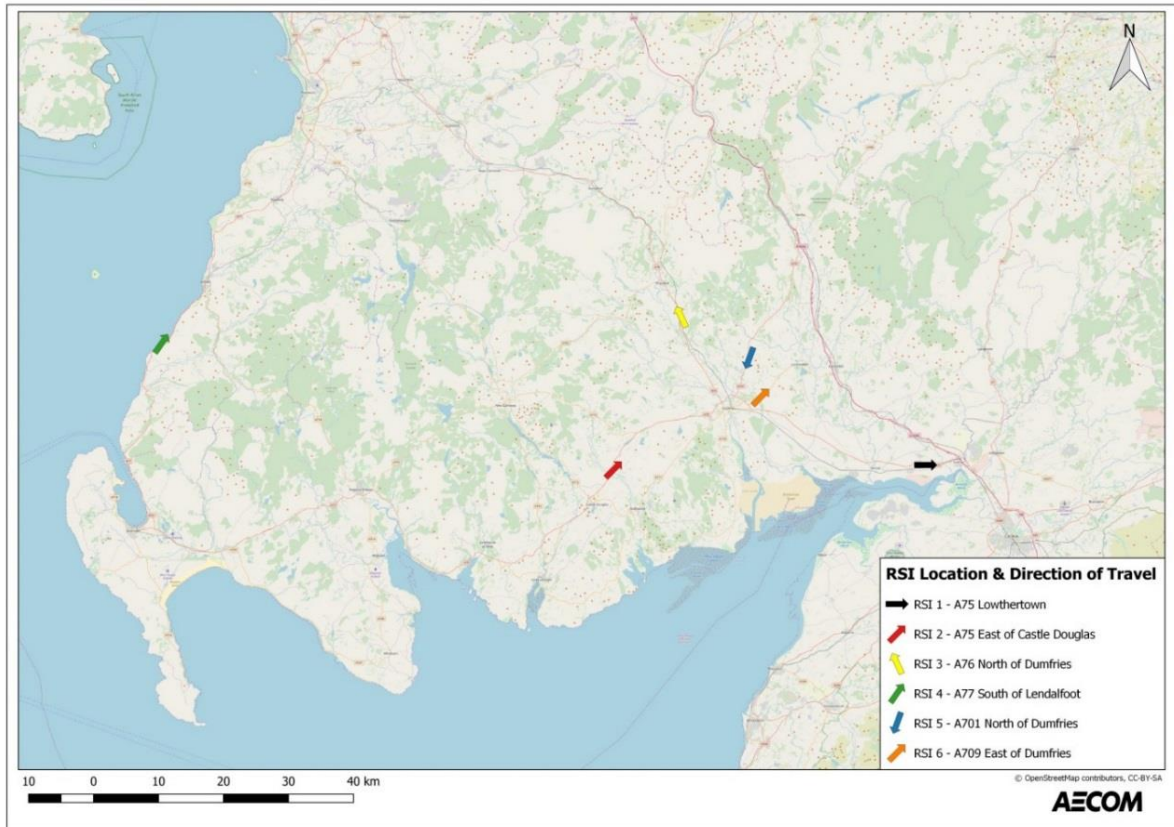
Figure 3-20: A75 RSI Locations and Direction of Travel

Figure 3-21 shows the vehicle composition at each of the RSI sites surveyed. Overall, the A75 at Lowthertown site and the A77 site south of Lendalfoot had the highest proportion of HGVs (19% and 16% respectively). This reflects the role of the A75 and A77 as the primary access routes to the ports at Cairnryan. The proportion of HGVs recorded at the A75 East of Castle Douglas site (12%) was lower than that recorded at the A75 Lowthertown site (19%). This likely reflects the role of Dumfries as a key origin and destination of freight. In comparison to the A75 and A77, the A76, A701 and A709 had much lower levels of HGV traffic (9%, 9%, and 6% respectively).
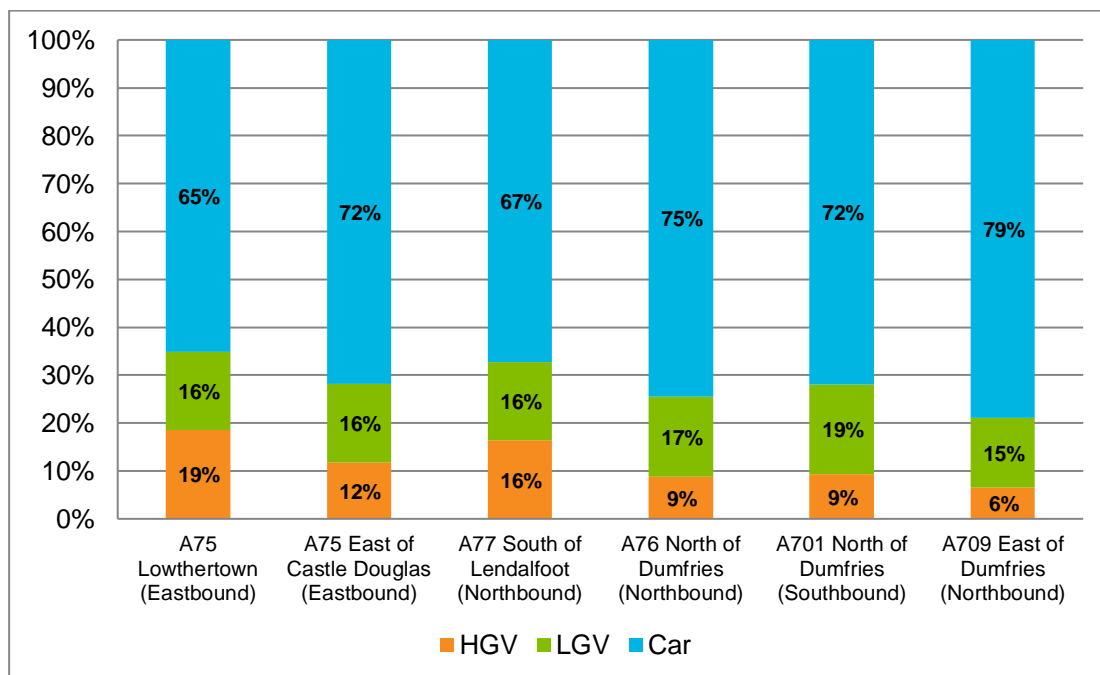
Figure 3-21: Vehicle composition at RSI sites

Traffic Origins and Destinations

The results from non-HGV and HGV traffic surveyed at each of the RSI sites are as would be expected based on the direction of travel. Key points to note are as follows:

- A sizeable proportion of traffic on the A75 and A77 originates in Northern Ireland which reflects the importance of the ports at Cairnryan in terms of traffic composition on these routes.

- The proportion of HGV traffic which originates in Northern Ireland is higher than the proportion of general traffic which originates in Northern Ireland on both the A75 and the A77, highlighting the dominance of HGVs amongst port traffic.

- The proportion of general traffic which originates in Northern Ireland is highest at the A77 RSI site while the proportion of HGV traffic originating in Northern Ireland is highest at the A75 East of Castle Douglas site, suggesting that the A75 is used more by HGV port traffic and the A77 is used more by non-HGV port traffic.

Journey Purpose

Figure 3-22 shows the breakdown by journey purpose of non-HGV traffic surveyed at each of the RSI sites.
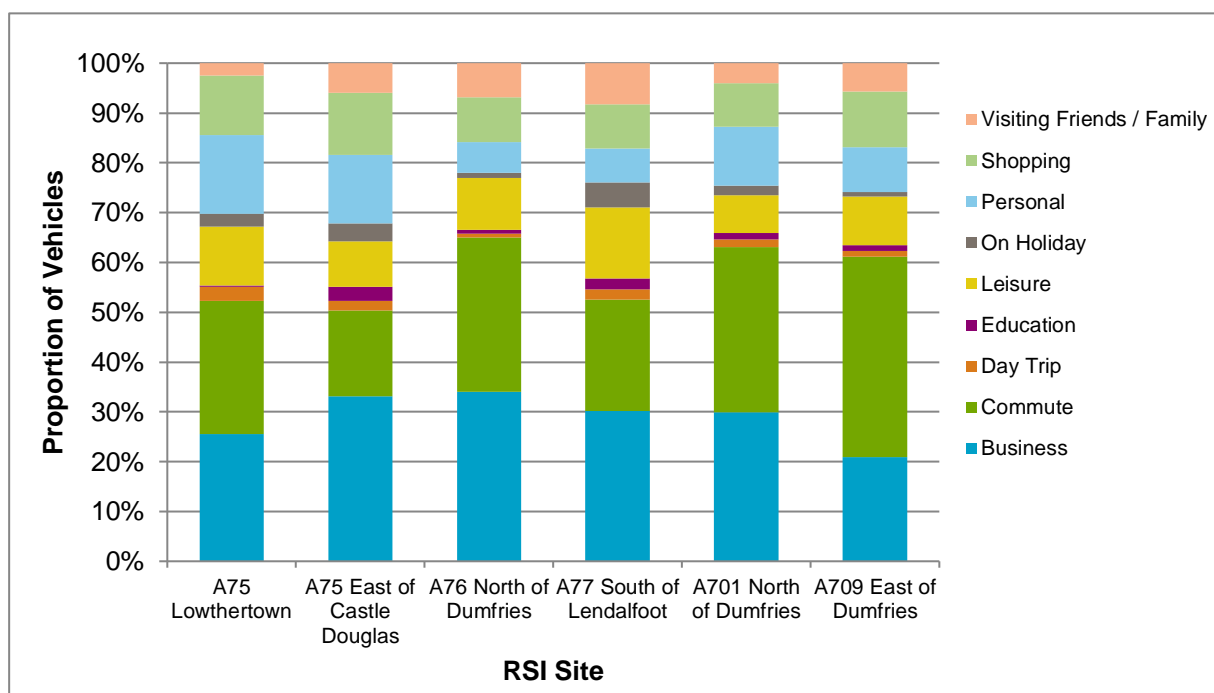
Figure 3-22: Journey Purpose of non-HGV Traffic

Key points to note from this data are as follows:

- The A709 has the highest proportion of commuting journeys (40%), followed by the A701 (33%) and the A76 (31%). In comparison, the level of commuting on the A75 and A77 is lower (17-27% and 22% respectively).

- The high levels of commuting on the A709 may in part be a result of people travelling from Dumfries and areas west of Dumfries to Lockerbie in order to access the WCML for onward trips to the Central Belt by rail.

- The proportion of respondents who said they were on holiday is higher on the A77 and A75 (5% and 3-4% respectively) compared to the other routes (1-2%) which likely reflects people travelling from the ports at Cairnryan.

- The proportion of education trips is higher at the A75 East of Castle Douglas (3%) and on the A77 (2%) compared to the other routes (1% or less) which likely reflects people travelling from areas in the south of the study area where there are relatively few higher and further education sites to Dumfries and Ayr respectively.

3.3 Socio-Economic Context

This section summarises the socio-economic profile of the study area.

3.3.1 Population

The distribution of population across the area is shown in Table 3-8. Dumfries & Locharbriggs accounts for almost a fifth of the total population and is over three times the size of the next largest settlement, Stranraer. This highlights its importance as a local hub.

Table 3-8: Population by Settlement 2016[24]

Sector	Total Population	% of Total
Dumfries + Locharbriggs	34,230	19.0%
Stranraer	9,852	5.5%
Annan	7,992	4.4%
Girvan	6,452	3.6%
Lockerbie	4,213	2.3%
Dalbeattie	4,183	2.3%
Newton Stewart	4,052	2.2%
Maybole	3,967	2.2%
Castle Douglas	3,911	2.2%
Gretna	3,356	1.9%
Kirkcudbright	2,941	1.6%
New Cumnock	2,701	1.5%

South West Scotland has a low population spread over a large geographic area. This low population density can make provision of viable public transport services more challenging and lead to higher levels of car dependency. Socio-economic analysis has also highlighted that the study area has a larger older population and lower working age population than Scotland as a whole. This can place additional burdens on health care, public transport and other services required by a more elderly population.

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[24] Source: Census 2011, NOMIS

3.3.2 Economy & Labour Market

As shown in Figure 3-23, GVA per head is generally lower in the study area than for Scotland as a whole highlighting lower levels of economic productivity in South West Scotland.
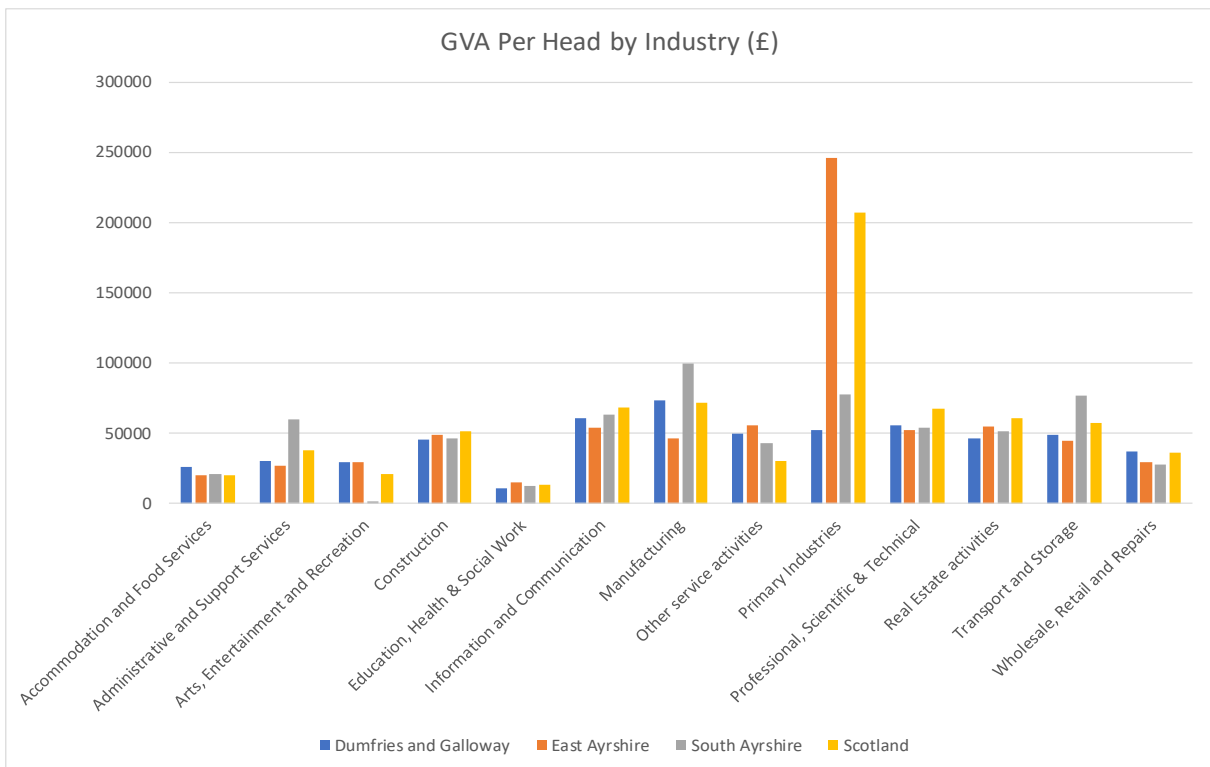
Figure 3-23: GVA per Head by Industry 2014 (£)[25]

The area is heavily dependent upon Dumfries & Locharbriggs as a centre of employment. Overall, a quarter of all employees in the South West Scotland area are located in Dumfries & Locharbriggs whilst just under a quarter (22.6%) are employed in the Health industry[26] which is concentrated around Dumfries & Galloway Royal Infirmary and Ayr & Ailsa Hospital. This contributes to an above average dependence on the public sector for employment in the region.

Analysis of Census 2011 economic activity data shows that only Annan and Dumfries & Locharbriggs have economic activity levels above the national average of 69.0% (see Figure 3-24). The lowest levels of economic activity are in New Cumnock (59.0%) and Girvan (60.8%). In addition, when economic activity data is broken down further, it is evident that there are:

- lower numbers of economically active full-time students across all locations within the study area compared to Scotland as a whole, with figures as low as 1.1% in Newton Stewart compared to the Scottish average of 3.7%. This suggests there may be limited further education opportunities and points to a potential skills gap in the future labour market.

- high proportions of economically inactive residents due to being long-term sick or disabled in several locations in the study area, including New Cumnock (8.3%), Girvan (8%), Stranraer (7.6%) and Ayrshire (7.3%). This compares with the Scottish average of 5.1%. High proportions of long-term sick / disabled individuals will place burdens on local health services and could potentially create accessibility problems where mobility is affected.

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[25] Source: Scottish Government Statistics

[26] Source: BRES 2016, NOMIS
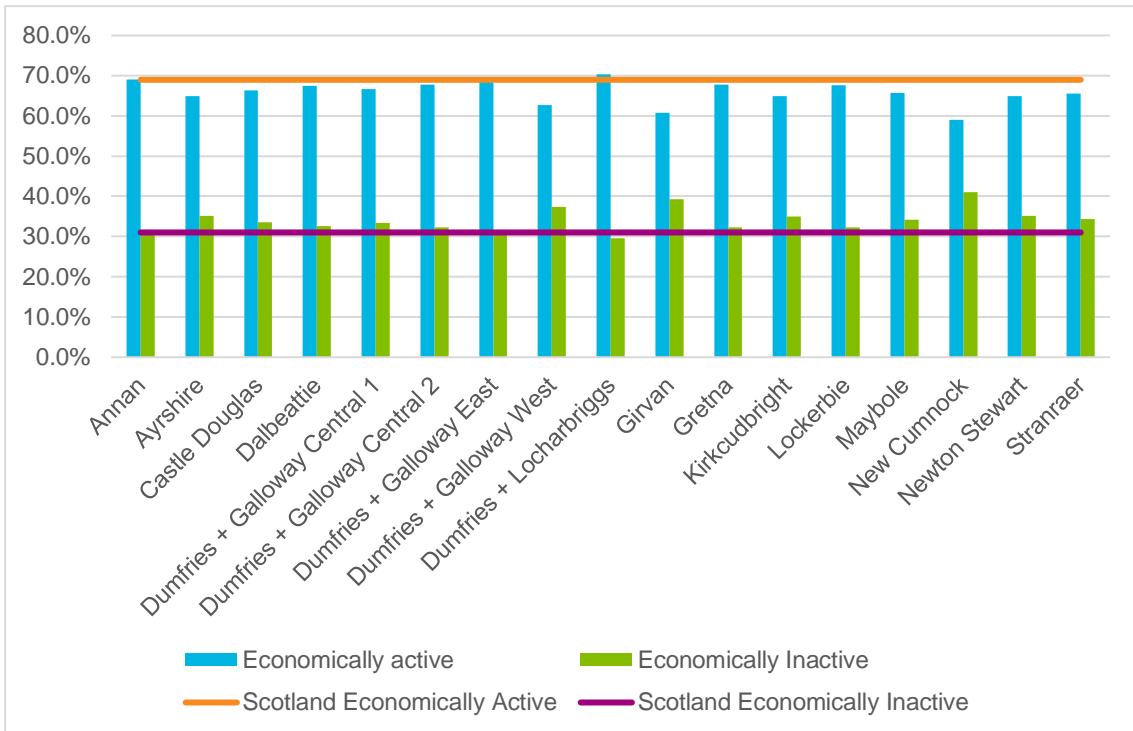
Figure 3-24 South West Scotland Economic Activity Levels[27]

Figure 3-25 provides a breakdown of the claimant rate across the study area compared with the Scottish average. As shown, several areas have claimant rates above the national average, with particularly high rates at Maybole (3.6%), New Cumnock (4.3%) and Stranraer (2.9%). Conversely, there are considerably lower rates of claimants than the national average in Dumfries & Galloway Central (0.9%), Dumfries & Galloway Central 2 (1.2%), Dumfries & Galloway East (1.1%) and Gretna (1.3%) highlighting some regional variation.
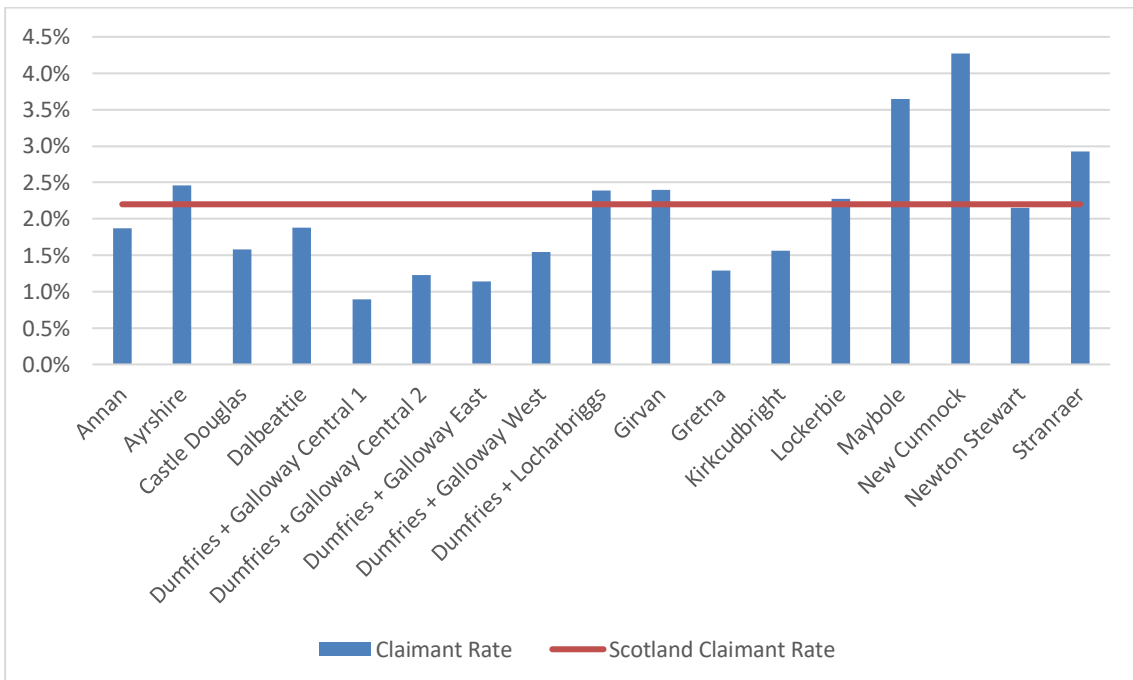
Figure 3-25 South West Scotland Claimant Rate 2016[28]

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[27] Source: Census 2011, NOMIS
[28] Source: Claimant Rate 2016, NOMIS

3.3.3 Residents

There is a shortage of skilled residents in South West Scotland with the area lagging behind the national average for people with degrees or postgraduate qualifications and greatly exceeding the national average of people with no qualifications[29]. This problem is most acute in New Cumnock where almost half (49.9%) of people have no qualifications which is almost double the national average of 26.8%[30]. This skills shortage could present a significant impediment to attracting more skilled and high paying industries to the area.

Gross earnings within the three local authority areas of Dumfries and Galloway (£16,998), East Ayrshire (£17,473), and South Ayrshire (£18,885) are also lower than the national average (£21,454)[31] which could be representative of lower levels of competition within the labour market as well as fewer businesses in high value industries.

House prices in the main settlements within the study area tend to be in the lower ranges with the most expensive houses being in more isolated, rural areas[32]. The lower value housing stock in more urban locations could influence the residential choices people make with a consequential impact on transport. Those choosing to live in more rural areas will be more car dependent as a result whilst people occupying more affordable urban housing are more likely to rely on public transport, walking and cycling.

Across South West Scotland as a whole, the proportion of households with no car is just 22.9% compared to the national average of 30.5%[33]. This is indicative of a high degree of car dependence which can be expected in more rural locations. However, while car dependence across the study area as a whole is high, there are several locations where the proportion of households with no car is above the national average, including Annan (31.9%), Girvan (34.3%), Maybole (31.9%), New Cumnock (35.6%) and Stranraer (33.9%). This highlights the need for good public transport connections in these areas.

Analysis of travel to work data from the 2011 census suggests that the Dumfries and Galloway and Ayrshire areas have limited interaction in terms of their labour market movements with each being fairly self-contained[34]. There is also virtually no interaction with Glasgow whereas there is much more integration with the economy of England, particularly along the A74(M) corridor. In terms of modal use, driving a car or van is the most common method of travel to work or study across all locations in the study area. However, in several settlements, walking levels are above the Scottish average (18.5%), including for example Castle Douglas (30.1%), Annan (29.8%) and Stranraer (28.7%), reinforcing the observation that many people live and work in the same settlement. Overall, public transport use is generally low across the study area.

Overall, there is evidence of socio-economic problems in the South West Scotland area which have direct repercussions for transport provision, mode choices, accessibility to opportunities as well as future economic growth and activity. These issues are explored further in Chapter 5.

3.4 Environmental Context

The environmental baseline in the study area has been reviewed with an environmental constraints plan presented in Figure 3-26.

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[29] Source: Census 2011, NOMIS
[30] Source: Census 2011, NOMIS
[31] Source: Annual Business Survey 2014, NOMIS
[32] Source: Mean House Prices 2017, Scottish Government Statistics
[33] Source: Census 2011, NOMIS
[34] Source: Census 2011, NOMIS
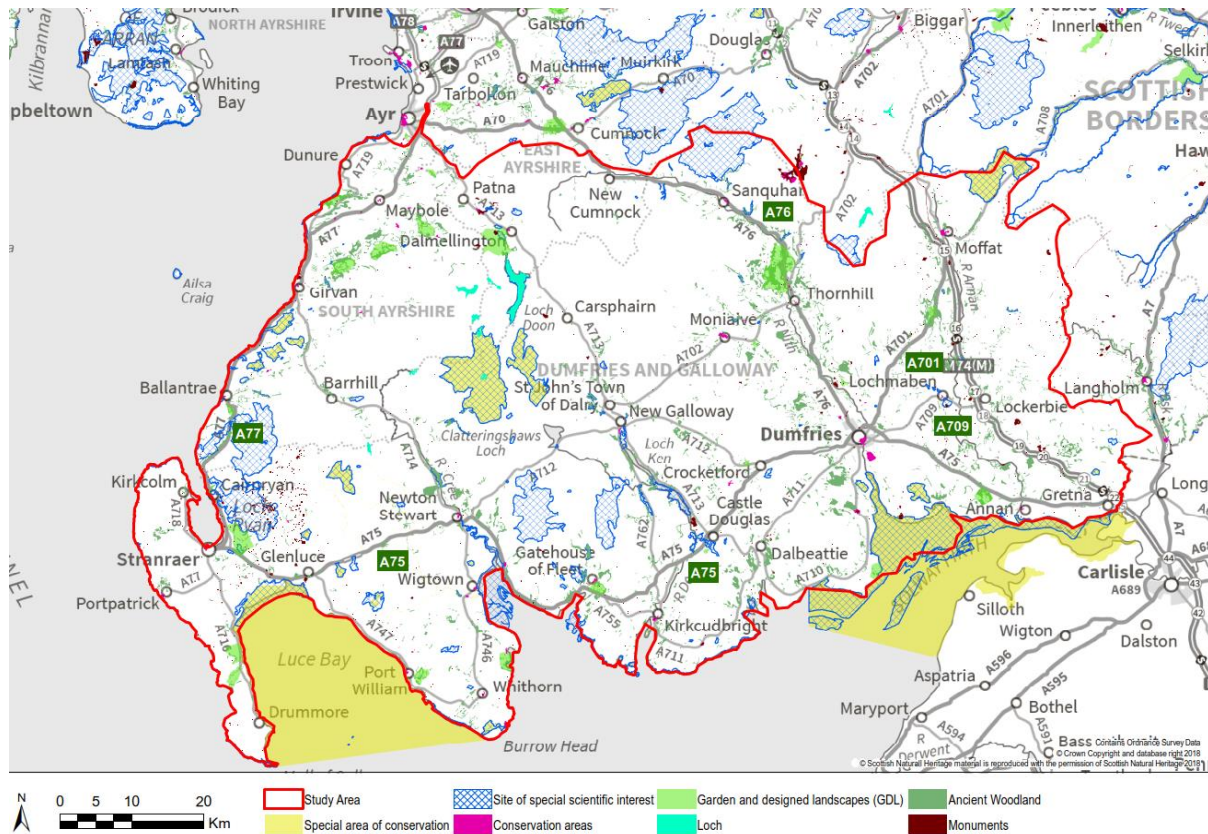
Figure 3-26: Environmental Constraints Plan

The primary Landscape Character of the study area is Southern Uplands. There are also areas of coastal flats and peninsulas along the coastline and lowland drumlin pastures in between. Galloway Forest Park has a Rugged Granite Upland Landscape Character. There are various major watercourses and waterbodies within the study area. These include Loch Doon to the north, Loch Ryan to the west and Loch Ken and Clatteringshaws Loch to the south. The River Cree, River Dee, River Nith and River Annan all run north to south through the region.

A section of Galloway Forest Park is composed of the Silver Flowe – Merrick Kells Biosphere Reserve which is a designated Special Area of Conservation (SAC), a Site of Special Scientific Interest (SSSI), Geological Conservation Review Site and a Ramsar (Wetland) Site. Galloway Forest Park is a Gold-tier Dark Skies Park (as designated by the International Dark Sky Association). Adjacent to the A75 between Gretna and Stranraer there are four designated SSSIs: Flow of Dergoals, Derskelpin Moss, Lower River Cree Threave and Carlingwark Loch. At Cairnryan are the Glen App and Galloway Moors which is a large designated SSSI and Special Protection Area (SPA). Luce Bay and the Solway Firth are designated SACs, SSSIs and Ramsar Sites. There are also large areas of Ancient Woodland spread throughout the study area particularly to the south and the east.

There are various designated Conservation Areas within the study area including along potential transport corridors. These Conservation Areas are Annan, Stranraer, Maybole, Kirkoswald and Dumfries. It is important to note the higher potential for listed buildings within Conservation Areas. There are also some large Garden and Designed Landscape (GDL) Areas throughout the study areas. Notable GDL Areas are Castle Kennedy to the south of Cairnryan, Cally Palace and Threave Gardens along the A75 between Gatehouse of Fleet and Castle Douglas, Kinmount House near Annan and Drumlanrig Castle to the north of Thornhill. In the area between Ayr, Girvan and Dalmellington there are five large GDL Areas (Craigengillan, Blairquhan, Culzean Castle, Bargany and Kilkerran).

3.5 Summary

This chapter has presented an overview of the baseline transport, socio-economic and environmental conditions in the South West of Scotland. This baseline provides the foundation upon which the analysis of evidence-based problems and opportunities in the study area, described in Chapter 5, has been undertaken.

Public & Stakeholder Engagement

04

4   Public & Stakeholder Engagement

4.1 Introduction

To inform the identification of problems and opportunities in the study area, an extensive engagement exercise with stakeholders and the public was undertaken between September and December 2018.

Consultation activities included engagement with local and national authority officers, members of the public and representatives from transport providers, business organisations and relevant action groups. The key elements of the engagement programme are outlined in Figure 4-1 below.
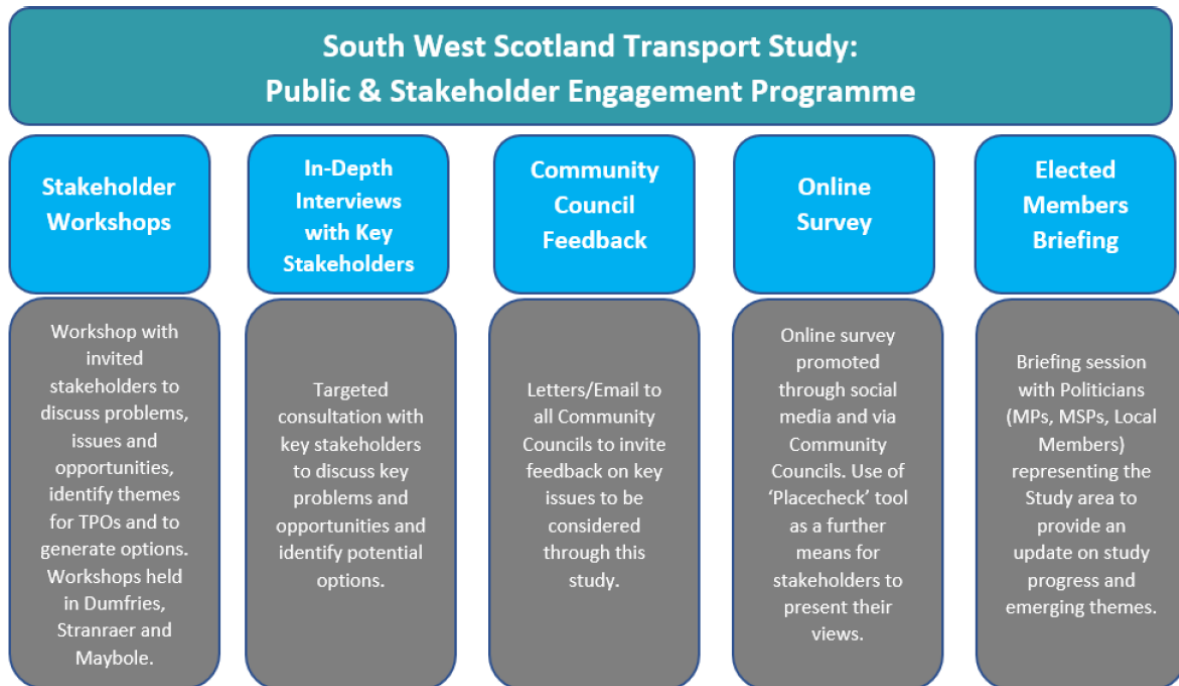
Figure 4-1: Public and Stakeholder Engagement Programme

Overall, the consultation exercises generated a strong level of feedback, with the feedback obtained central to guiding the examination of problems as well as the identification of options. Figure 4-2 provides a snapshot of the level of feedback to the Engagement Programme.

4.2 Key Findings

A separate Consultation Report has been prepared which includes full analysis of the findings from the various consultation sources outlined above, with brief summaries provided in the remainder of this section.

4.2.1 Stakeholder Workshop

Stakeholder workshops, held in Stranraer, Dumfries and Maybole, were attended by over 50 stakeholders representing a range of organisations across the three locations.

Key findings included:

- **Perception of area as the 'forgotten' part of Scotland:** There is a perception that other parts of Scotland have
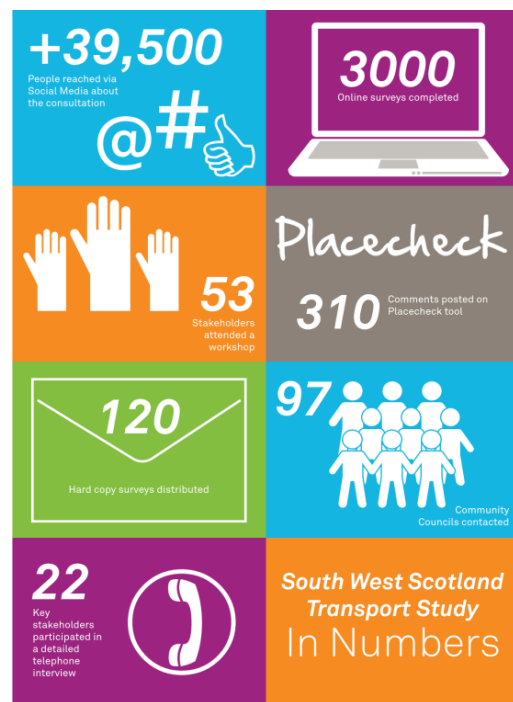
Figure 4-2: Consultation in Numbers

benefited from investment in infrastructure whilst the South West of Scotland has not benefited from any large scale infrastructure projects (though it was noted that some improvements have been undertaken e.g. overtaking lanes on A75).

- **Road infrastructure issues – classification, carriageway quality:** Concerns relating to the quality of road surfaces were frequently highlighted, including pot holes and faded white line markings. It was suggested that given the status of the roads in the area (e.g. the A75 is part of the Trans European Road Network) and their importance as freight corridors, routes are not 'fit for purpose'.

- **HGV platoons and limited overtaking opportunities:** Platoons are often experienced on the A75 and A77, coinciding with ferry arrivals. These are coupled with frequent bends, which result in a lack of overtaking opportunities.

- **Perception of safety issues:** Although analysis of accident data indicates that overall, accident rates (2012 – 2016) are lower in the study area than the equivalent national rate, when accidents do occur they tend to be more serious in nature. This supports the perception that many routes are unsafe.

- **Connectivity, impacting potential economic development:** It was noted by some attendees that there is some reluctance for individuals / businesses to invest in the area, particularly at the ports, if connectivity to / from other parts of the UK is not improved. The A75 and A77 were noted as key connections which need to be improved and a lack of investment has the potential to severely hinder economic opportunities in the area.

- **Resilience – long diversionary routes in event of road closures:** There is a lack of alternative routes in the study area, particularly for journeys along the A76 and A77. As such, in the event of road closure due to an accident or maintenance works, diversionary routes are often long and journey times significantly increased.

- **Rail issues – long rail journey times, access to rail network:** Whilst there was generally a desire by attendees to use rail, journey times, particularly to the Central Belt, were noted to be too long. This therefore deters commuters and visitors alike. It was also commented that access to rail is difficult in some areas, particularly where there are long distances to travel to a station e.g. at Thornhill and Beattock.

Full details, including minutes from the respective workshops can be found in a supporting Consultation Report.

4.2.2 In-depth Interviews

Telephone interviews were undertaken with a wide range of key stakeholders providing an opportunity for more in depth comments to be collated. In total, telephone interviews were undertaken with 22 organisations. A summary of findings from each interview can be found within the Consultation Report. However, a recurring theme across many interviews was the view that the South West of Scotland is the "forgotten part of Scotland", which has possibly not benefited from the same level of infrastructure investment as other parts of Scotland.

4.2.3 Community Councils

Community Councils (no. 97) were targeted as a further source of consultation and to assist in promoting the Online Survey. A limited response was received, with a summary of responses provided in the supporting Consultation Report.

4.2.4 Online Survey & Placecheck

To better understand existing transport-related problems and opportunities in the South West of Scotland, and the improvements sought by those who regularly travel throughout the study area, an online survey was developed and promoted to communities and other interested stakeholders in the study area. In total, 3,016 responses were received to the survey with analysis of results undertaken.

Results from the online survey, alongside the other consultation feedback, have informed the identification of problems and opportunities in the Chapter 5, key findings from the survey presented in the accompanying Consultation Report.

To support the Online Survey, the interactive Placecheck mapping tool was also promoted to enable the public and interested stakeholders to record their views on current transport provision in the South West of Scotland. A total of 310 comments were submitted, with the majority of these centred on road-based issues.

The **Gretna–Stranraer corridor** recorded comments related to poor route alignment, HGV platoons (particularly eastbound travel following disembarkation from the ferries) and a lack of safety on the route; though multiple locations were highlighted as safety concerns, a particular clustering of comments centred on the safety of the A75/A751 junction. Opportunities for new rail stations, the bypassing of Springholm and Crocketford and dualling the A75 (or at least part of) were also frequently raised comments related to this corridor.

Similar comments were provided for the **South of Ayr – Stranraer corridor**. Comments were received relating to poor route alignment leading to a perception of poor road safety. The quality of the A77 was generally considered to be poor with a lack of overtaking opportunities. Poor route resilience and long diversionary routes were also highlighted, particularly as a result of landslips. High HGV volumes were also commented on, although not to the same extent as the A75 corridor. Multiple comments related to bypass opportunities around settlements, including at Girvan, Ballantrae and Lendalfoot were raised, alongside suggestions for public transport improvements including to the Ayr – Stranraer rail line and suggestion for a Stranraer-Cairnryan rail link.

With regards to the **Dumfries – Cumnock corridor**, comments received focused on Thornhill; with respondents highlighting issues such as poor pedestrian facilities and parking. Strong support to reopening Thornhill Station was also noted.

Comments concerning the **Dumfries – Moffat corridor** related to a lack of overtaking opportunities, poor route geometry and queuing on approach to the A75 junction. For the **Dumfries – Lockerbie** corridor, there was a clustering of comments around Lochmaben to highlight safety concerns, including poor route geometry within the town and excessive speeding. The lack of available parking spaces at Lockerbie Station was also noted.

In addition to the multi-modal corridors, comments were also given to issues within key hubs/towns in the study area. Notable issues raised included:

- Dumfries – a mixture of local and strategic comments, including a desire for additional seating at bus stops, comments noting the high quality cycle paths in the town and issues at the A76/A75 roundabout.

- Stranraer – most of the comments received within Stranraer centred on the rail station; while some stakeholders were keen to preserve the Victorian rail station at the pier head, support was expressed by a number of respondents for relocating the station into the town centre.

While this study is primarily concerned with strategic transport improvements, it should be noted that a wide range of 'local' issues were raised on the Placecheck Tool. These 'local' comments have been passed to the project Steering Group for further consideration.

4.2.5 Elected Members Briefing

Elected Members Briefing sessions were held in Dumfries (26th November 2018) and Ayr (3rd December 2018) to provide a progress update on the emerging findings from the consultation. There was also an opportunity for Elected Members to provide their input to the study. Key comments include:

- Strong agreement with initial study findings that the study area is the 'forgotten' part of Scotland.

- Although STPR2 will deliver a 20 year plan for transport investment, it is important that SW Scotland does not have to wait the full 20 years to see projects implemented.

- It is important to note that results from the Online Survey may be skewed towards investment on the A75 given the higher population on that corridor.

- Average daily traffic flows do not show the whole picture and higher than average flows when vehicles disembark ferries must be considered.

4.2.6 Feedback Survey

Alongside publication of the draft Initial Appraisal: Case for Change Report, a feedback survey to capture views on the draft report was promoted to members of the public and organisations between 27 June and 20 September 2019. Approximately 340 survey responses were obtained. Feedback from the survey, which is summarised in the separate Consultation Report, has informed the production of this final report.

4.2.7 Summary

This chapter has presented an overview of the Public and Stakeholder Engagement Programme undertaken for this study, including a high level overview of findings. Full results from the consultation activities are contained in the supporting Consultation Report, while the following chapter outlines how the consultation feedback has supported the identification of problems and opportunities in the study area.

Problems & Opportunities

05

5 Problems & Opportunities

5.1 Overview

This section sets out the problems and opportunities for the study, the overarching themes to which the problems have been mapped, and the socio-economic impacts, by theme, that the problems create.

The problems and opportunities were identified from:

- Analysis of the strategic and regional transport networks; and

- The wide-ranging consultation exercise (as described in Chapter 4, and expanded upon within a supporting Consultation Report).

The problems are grouped by mode and are presented along with both evidence and relevant findings from the public and stakeholder engagement exercise before being grouped into themes. The chapter also considers the socio-economic impact of the problems identified, as well as the key opportunities in the study area that transport improvements can support.

5.2 Active Travel Specific Problems

AT1) Active Travel Links to Key Interchanges

Description:

Active travel links to interchange points are limited with survey respondents highlighting the need for improvement. This includes walking and cycling links to several rail stations in the study area and some pedestrian links to bus stops.

Evidence:

Sustrans National Cycle Network[35] shows NCN routes, indicating whether they are on road or traffic free routes. Overall, there is a mix of traffic free and on road routes (NCN7) between Gretna and Gretna Green Rail Station and some on road routes in the vicinity of Annan, Dumfries, Lockerbie, and Stranraer Stations; however, these NCN routes do not link directly to the stations. There are no NCN routes in / around Sanquhar, Kirkconnel, New Cumnock, Girvan and Barrhill. NCN7 routes through Maybole and links directly to the station via Culzean Road and Cargill Road, although this route is on road only.

The Dumfries and Galloway Sustainable Travel Map[36], South Ayrshire Council's Cycle Route Map[37], and East Ayrshire Council's online mapping service[38] provide further information on active travel routes in the study area. In Dumfries and Galloway, there are shared use cycle/pedestrian facilities next to Dumfries Rail Station and within the vicinity of Stranraer Rail Station, although these do not appear to be extensive. In South Ayrshire, the National Byway, a 4,500-mile sign-posted cycle route around the UK, passes through Maybole (along the same route as NCN7) and links to Girvan, with a connection to Girvan Rail Station via a local cycle route on Montgomery Street / Maxwell Street. However, the National Byway is predominantly on road. In East Ayrshire, a number of Core Paths pass near New Cumnock Station, but there is no direct link to the station.

The Dumfries and Galloway Active Street Reviews[39] provide some evidence which supports the identified problem of poor pedestrian links to bus stops; though it should be noted that some of the evidence provided relates to more general concerns related to walking links. The Reviews note that parked cars can prevent buses from being able to offer a kerbside service; resulting in pedestrians having to step between parked cars on the main road, which is deemed to be unsafe. A further issue highlighted regarding access to bus services was the lack of high access bus boarder kerbs and dropped kerbs at crossing points causing mobility restrictions when accessing services.

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[35] https://www.sustrans.org.uk/map-ncn
[36] https://www.dumgal.gov.uk/media/17736/Green-Travel-Map-Side-1/pdf/Sustainable_Travel_Map.pdf
[37] https://south-ayrshire.maps.arcgis.com/apps/Styler/index.html?appid=8d979eb3b0d94785895aaa8ea94f7cbe
[38] http://webgis.east-ayrshire.gov.uk/webgis2016/
[39] Active Street Reviews have been undertaken for ten settlements in Dumfries and Galloway. These documents reviewed existing and proposed active travel infrastructure with a view to developing actions which could encourage increased use of active travel.

What people told us:

Overall, 38% of respondents were dissatisfied or very dissatisfied with cycling links to stations and 34% were dissatisfied or very dissatisfied with walking links to stations. As shown in Figure 5-1, the rate of dissatisfaction with walking links to stations was highest amongst those living in the A77 corridor while the rate of dissatisfaction with cycling links was highest amongst those living in the A75 corridor.
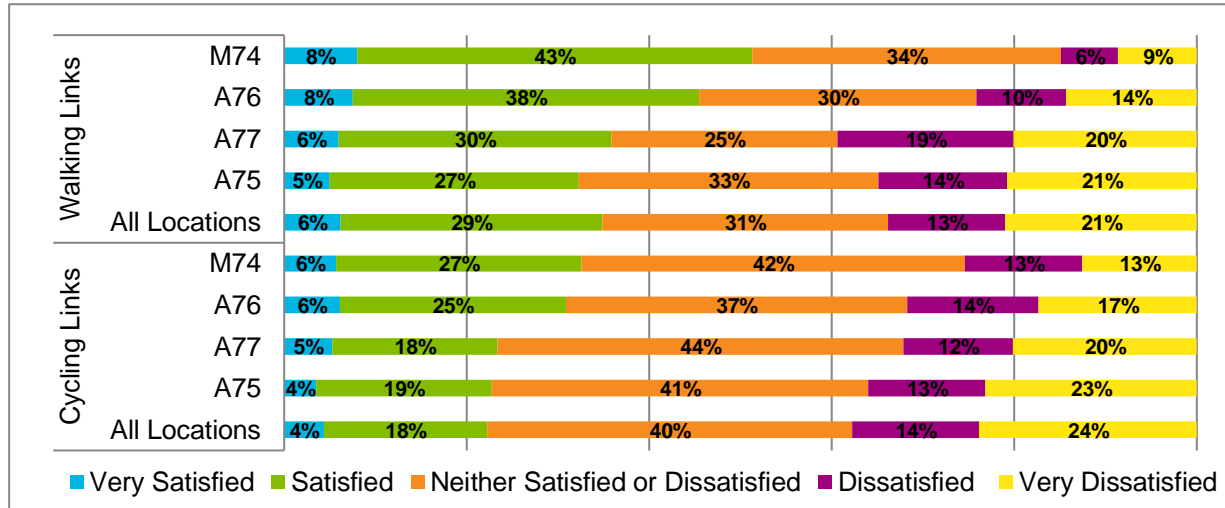
Figure 5-1: Satisfaction with walking and cycling links to stations by Corridor[40]

Overall, satisfaction with walking links to bus stops was relatively high in the public survey (57% of respondents were either satisfied or very satisfied with this aspect). However, several respondents identified specific issues with pedestrian links in the open response questions. In total, of the 1,123 respondents who provided comments on why they were dissatisfied with the bus service, 54 provided comments about bus stops being located in unsafe locations. For example, it was highlighted that it was necessary to walk along the verge and/or cross the road at unsafe locations to access some bus stops on the A75. Several respondents also noted that the inaccessibility of bus stops was a deterrent to allowing children to use local buses.

Key Points:

The network of active travel routes around rail stations in the study area is not extensive. A review of active travel infrastructure also highlighted a lack of bus boarder kerbs and drop kerb crossing points. Within the public survey, around a third of respondents indicated they were dissatisfied with active travel links to rail stations and several comments were received regarding unsafe walking routes to bus stops.

AT2) Cycle Facilities at Rail Stations / on Trains

Description:

There is a perception that cycling facilities at stations in the study area are poor and there is limited space for bikes on trains.

Evidence:

Table 5-1 provides a summary of the available cycle parking facilities at each rail station within the study area[41] along with the total throughput of passengers as recorded in 2017/2018 LENNON data and the total number of passengers recorded in the Rail Survey conducted for this study during the hours of 0700-0900.

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[40] Source: Public Survey. It is noted that, some locations fall into more than one corridor e.g. Stranraer is included within both the A75 and A77 corridors. Where this is the case, the survey results for the locality in question are included in the data for both corridors. As such, the results for 'all locations' does not equate to the sum of the results for all corridors as the corridor results include some double counting.

[41] Data was sourced from the ScotRail website

Transport Scotland's Cycling by Design (2010)[42] specifies that the minimum cycle parking provision at stations is 5 spaces per hundred peak hour passengers. This standard is also referenced within the Scottish Government's Cycling Action Plan (2010)[43]. The data below therefore suggests that the current level of parking provision at rail stations in the study area meets the minimum standards specified in national guidance.

Table 5-1: Cycle Parking Facilities at Stations

Station	Total Cycle Parking Spaces	Type	Sheltered	Average Passengers per day (2017/18)	Passengers recorded during 0700-0900 (Rail Survey)
Maybole	None	-	-	317	39
Girvan	10	Stands	No	392	46
Barrhill	6	Stands	No	22	2
Stranraer	10	Stands	No	192	23
New Cumnock	6	Stands	No	76	20
Kirkconnel	10	Stands	No	61	7
Sanquhar	6	Stands	No	77	2
Dumfries	20	Stands	Yes	1,067	61
Annan	6	Stands	No	364	39
Gretna Green	16	Stands	Yes	115	10
Lockerbie	6	Stands	No	712	87

What people told us:

Respondents to the public survey noted that there is a lack of sufficient cycle parking at stations and limited space for bikes on trains and that this results in people choosing instead to drive to the station.

Key Points:

A review of station parking facilities and peak period passenger numbers indicates that the current level of parking provision at rail stations in the study area meets the minimum standards specified in national guidance. However, survey respondents cited a lack of cycle parking facilities at rail stations and limited spaces for bikes on trains as a problem, noting that it contributes to people choosing to drive to rail stations instead of cycling.

AT3) Cycle Infrastructure and Facilities

Description:

There is a lack of (safe) off-road cycle routes alongside the key trunk road routes, offering limited active travel accessibility across the area, and to bus and railway stations in key settlements.

There are issues with path maintenance which deter people from cycling and result in safety concerns.

Evidence:

The Sustrans National Cycle Network[44] indicates that although off-road cycle facilities do exist in the study area, they are not extensive. There are some sections of off-road routes within or close to Gretna, Annan, Dumfries, Castle Douglas (all of which are part of NCN7), and Lockerbie (part of NCN74). There are also several longer sections north / east of Newton Stewart (part of NCN7), north of Dumfries (part of NCN10), and near Barr in South

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[42] Cycling by Design, Transport Scotland, 2010, https://www.transport.gov.scot/media/33803/cycling_by_design_2010__rev_1__june_2011_.pdf, p110
[43] Cycling for Scotland Action Plan, Scottish Government 2010, https://www2.gov.scot/resource/doc/316212/0100657.pdf, p23
[44] https://www.sustrans.org.uk/map-ncn

Ayrshire (part of NCN7). Generally, however, the vast majority of the National Cycle Network within the study area is classified as on road. It should be noted that the Sustrans NCN map does not provide an extensive list of off road cycle facilities.

As noted, Active Street Reviews for several settlements within the Dumfries and Galloway area have been undertaken focused on reviewing active travel infrastructure with a view to developing actions to encourage increased use of active travel. Common findings from the reviews included poor routine maintenance on the existing Core Path Network (Annan) and on some footways in the periphery of the town (Sanquhar, Newton Stewart and Castle Douglas). Several actions in the Reviews also pertain to "routine maintenance", again indicating that existing maintenance of the active travel network could be improved. In Newton Stewart for example, the NCN 73 route was highlighted as an area requiring routine maintenance.

What people told us:

Overall, 18% (n=452) of respondents indicated that they were dissatisfied or very dissatisfied with the ability to safely cycle to key local destinations and 18% (n=444) of respondents indicated that they were dissatisfied or very dissatisfied with the ability to safely cycle for leisure purposes. These proportions were similar across all the strategic corridors.

Respondents were also asked to provide reasons for their dissatisfaction. In total, 479 respondents provided open-ended responses in this respect. Of these, 238 noted that there was a lack of safe cycling routes, with many noting that there were few off-road routes and that routes often do not connect key destinations and/or there are significant gaps in provision. 181 respondents also highlighted that roads are unsafe to cycle with many of these noting the volume and mix of traffic (including large numbers of HGVs and timber lorries) and high traffic speeds. Comments were also received about roads being too narrow and there being poor sightlines. There were also comments on cycle route maintenance, with 65 respondents noting that cycle paths and/or roads are poorly maintained, many of whom highlighted overgrown vegetation on off-road routes and potholes on road sections.

Key Points:

The majority of the National Cycle Network in the study area is classified as on-road. Survey respondents highlighted a lack of (safe) off-road cycle paths in the study area and the lack of appeal of on-road cycling due to the high proportion of HGVs. Respondents also noted that cycle paths were poorly maintained, with vegetation often overgrown.

5.3 Bus Network Specific Problems

BU1) Bus Quality and Accessibility

Description:

Bus vehicle quality varies across the region, with ageing and inaccessible vehicles used on several routes. This reduces the journey quality and leads to accessibility problems for some elderly, disabled or mobility impaired users.

Evidence:

The accessibility requirements for buses and coaches are set out in the Public Service Vehicles Accessibility Regulations (PSVAR), which came into force in August 2000. The PSVAR applies to all new public service vehicles (buses or coaches) which have a capacity exceeding 22 passengers and are used to provide a local or scheduled service. Under this legislation, all buses had to be accessible by the 1st of January 2017 and all coaches must be accessible by 1st of January 2020. The accessibility requirements include:

- space for a wheelchair, with suitable safety provisions, depending on whether the wheelchair is carried facing forwards or backwards

- a boarding device to enable wheelchair users to get on and off vehicles

- priority seats for disabled passengers

- handrails to assist disabled people

- visual contrast of features like handrails and steps to help partially sighted people

- easy-to-use bell pushes throughout the vehicle

- audible and visible signals to stop a vehicle or to request a boarding device

- external equipment to display the correct route and destination

SWestrans noted that, at present, all subsidised services running in Dumfries and Galloway are provided by accessible vehicles. Of these only Service 500, Dumfries to Stranraer, is provided by a coach but the coaches on the route fully comply with the PSVAR with an electronic lift providing the required access for those with mobility needs. However, the age of the bus fleet was suggested to contribute to reliability issues and perceived quality issues amongst users.

What people told us:

Poor quality vehicles was identified as an issue during the stakeholder workshops. Key points raised included:

- Some buses are not accessible for elderly and disabled users. This includes some smaller buses and 'coach style' vehicles which often have steep steps and few disability seats;

- Very few buses have wi-fi facilities which restricts the opportunities to work on the bus and reduces journey quality;

- Some vehicles lack toilet facilities which on long journeys can result in some passengers being unable to travel or having to travel by car instead; and

- Ageing vehicles release higher emissions and therefore contribute to poor air quality.

While there was no specific question on the quality of the bus fleet within the public survey, respondents were asked to indicate their level of satisfaction with the physical accessibility of the buses used. Overall, 12% of respondents said they were either dissatisfied or very dissatisfied with this aspect, with the proportions dissatisfied similar across all corridors. While this was relatively low compared to some of the other aspects of the bus service (e.g. fares, frequency, range of destinations etc.), it should be borne in mind that only a segment of the population is impacted by mobility issues and those who do not experience problems with mobility may be unlikely to have identified this as an issue.

Key Points:
Although all subsidised services operating in Dumfries and Galloway comply with the required standards at present, there is a perception of poor quality bus provision across the network.

BU2) Bus Service Frequency

Description:

Many bus services in the area are infrequent with large gaps in the timetables resulting in long wait times for passengers.

Evidence:

Figure 5-2 and Figure 5-3 show the total number of buses operating per hour within the study area in the morning peak period (0700-0859) and the off-peak period (1800-2359).

- As would be expected, the most developed part of the network is in the most populated area in and around Dumfries in the east of the study area as well as Ayr in the north-west. There is relatively high bus frequency between Girvan / Maybole and Ayr and on the key corridors into Dumfries, including the A75 corridor between Dumfries and Gretna Green, the A76 between Dumfries and Thornhill, the A701 between Dumfries and Moffat, and the A709 between Dumfries and Lockerbie.

- Bus service frequency is lower across the more rural locations, with particularly low frequency levels between Glenluce and Port William, across several routes into Castle Douglas and Kirkcudbright, between Moniaive and Thornhill, and between Bellsbank and Carsphairn in the centre of the study area.

- Service frequency is higher in the peak compared to the off-peak period. There are several services in the more rural locations not operational during the off-peak period, including connections between: Dalmellington / Bellsbank and Castle Douglas, Pinwherry and Newton Stewart, Moniaive and Dumfries, and Glenluce and

Port William. It is also apparent that some services on the strategic transport corridors operate at a lower frequency in the off-peak, including connections between: Girvan and Ayr, Dumfries and New Cumnock, Dumfries and Gatehouse of Fleet, Newton Stewart and Stranraer, and Dumfries and Gretna.

- The lower levels of bus connectivity in some of the more rural locations may contribute to a range of social issues, including difficulty accessing employment, social isolation, and forced car ownership. The limited bus service frequency in some locations and the impacts of this are explored further in further in Section 5.5.
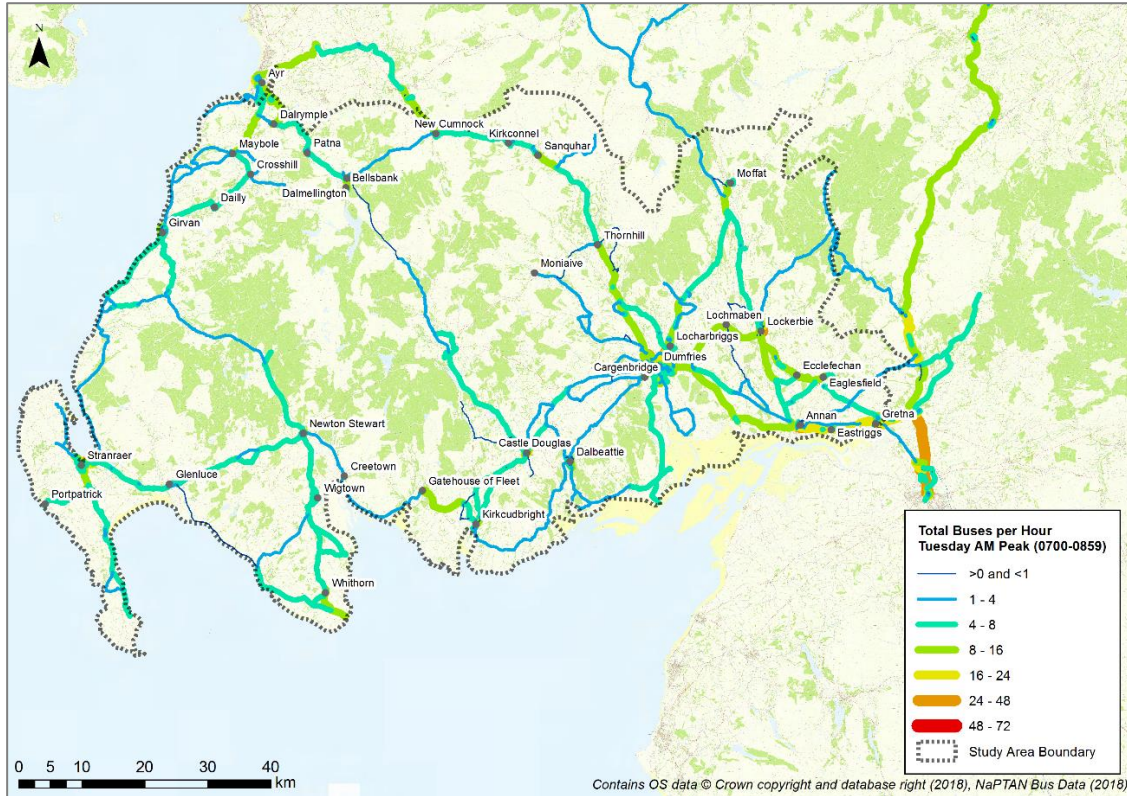
Figure 5-2: Total Buses per Hour Tuesday AM Peak (0700-0859)
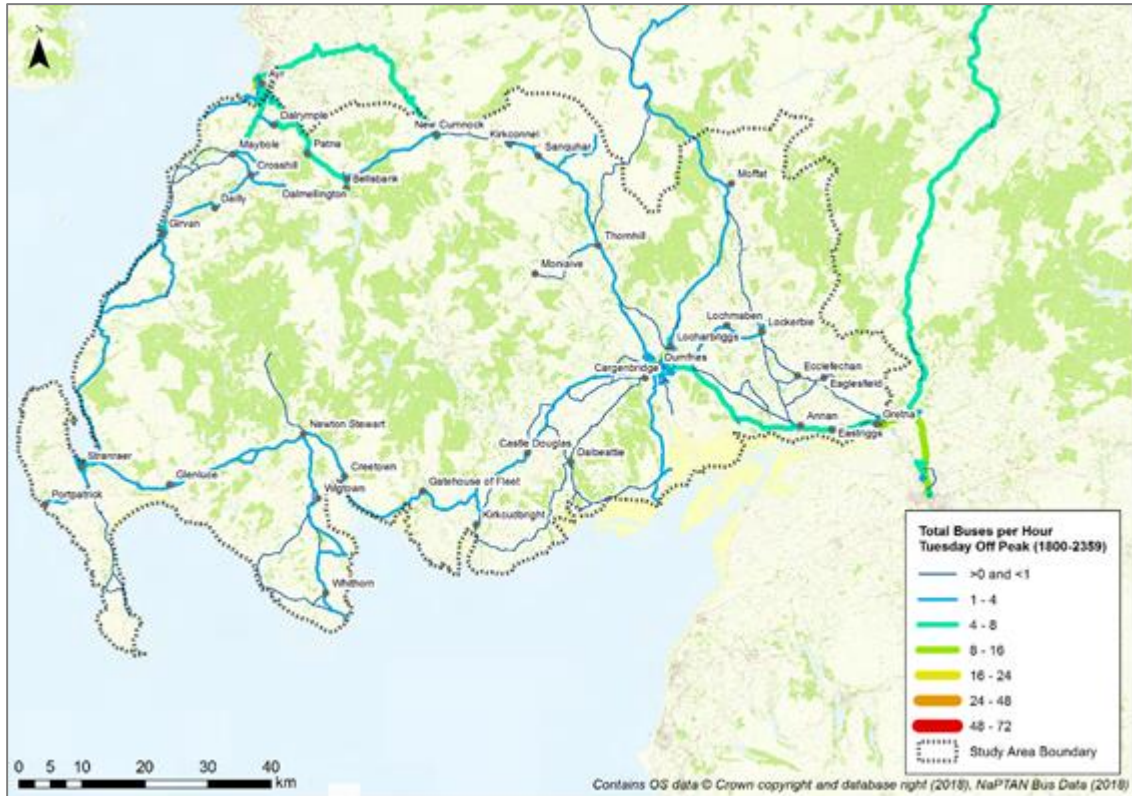
Figure 5-3: Total Buses per Hour Tuesday Off-Peak (1800-2359)

What people told us:

Limited bus frequency was identified as a key issue within the public survey, with 51% of respondents stating that they were dissatisfied or very dissatisfied with bus service frequency. This level of dissatisfaction was higher than that for all other aspects of the bus service. As shown in Figure 5-4, satisfaction with bus frequency was similar across all corridors, with slightly higher levels of dissatisfaction amongst those living in the A76 corridor.
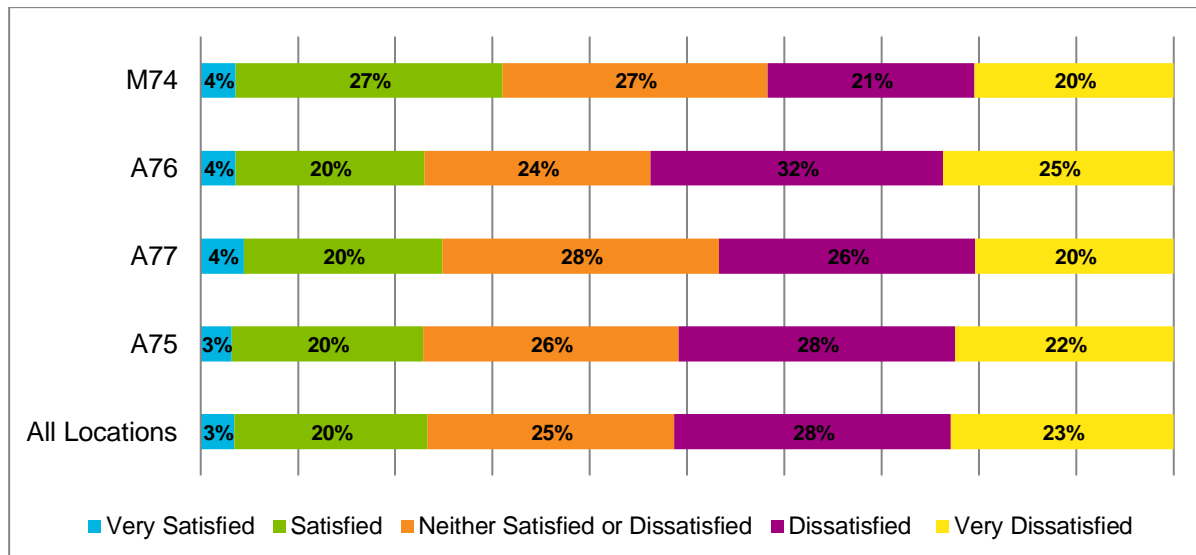
Figure 5-4: Satisfaction with the bus service frequency by corridor[45]

Service frequency was also highlighted as a problem in the open-ended questions, with a number of respondents noting that there are large gaps in the timetables resulting in long wait times. It was noted that the frequency of

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[45] Source: Public Survey

some bus services in the area has declined in the recent period because of decreasing passenger numbers on some commercial services and / or cuts in bus service funding. The limited bus frequency across many areas was felt to contribute to a wide range of issues, reducing socio-economic opportunities for residents in the study area.

Key Points:

Like many rural areas across the country, bus service frequencies across South West Scotland are low, with some areas having no service in the off-peak periods. This increases reliance on the car and impacts particularly on those unable to drive (or who would prefer not to drive), likely contributing to a range of socio-economic issues, including difficulty accessing employment and healthcare, increasing social isolation, and forced car ownership.

BU3) Bus Operating Hours

Description:

The operating day for many bus services is considered to be too short, with services starting too late in the morning and finishing too early in the afternoon / evening. This impacts on the ability to access both regular and out of office hours' employment as well as social and leisure opportunities.

Evidence:

As shown in Figure 5-2 and Figure 5-3 above, there are clear differences between bus service frequency in the AM (0700-0859) and off-peak period (1800-2359) and there are several locations where buses do not operate during the off-peak. Given the limited rail network coverage in the study area, the bus network is the only public transport option for many and the lack of off-peak services is therefore likely to have an impact on access to employment, healthcare services and social activities. The limited bus operating hours and the impacts of this are explored further in Section 5.5.

What people told us:

The limited operating day on many services was identified as a key issue within the public survey. Figure 5-5 shows respondents' satisfaction with the timing of the first bus departure and the last bus arrival. Overall, 28% were dissatisfied or very dissatisfied with the timing of the first departure and 58% were dissatisfied or very dissatisfied with the timing of the last bus arrival. While satisfaction with the former was similar across all corridors, there were notably higher levels of dissatisfaction with the last arrival amongst those living in the A76 and the A75 corridors.
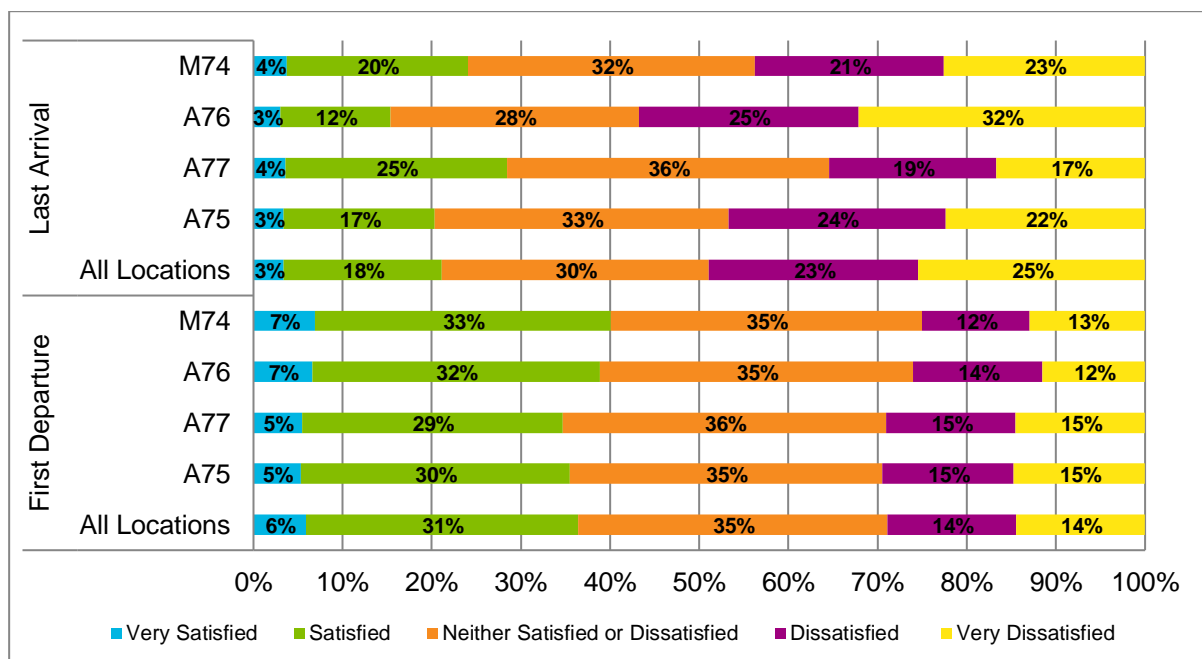
Figure 5-5: Satisfaction with the first and last bus departure by corridor[46]

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[46] Source: Public Survey

Problems with the length of the bus operating day were also noted in the open-ended questions. Of the 1,123 respondents who provided an explanation as to why they were dissatisfied with bus services in the area, 201 noted difficulties reaching work on time and / or getting home at the end of the working day and a further 128 highlighted that a lack of late-night bus services restricted evening-based leisure activities. Similar issues were raised during the stakeholder workshops.

Key Points:

The operating hours over which bus services operate constrain use of the network early and later in the day to access e.g. shift-based employment and social & leisure opportunities.

BU4) Bus Service Reliability

Description:

Consultation identified a perception that bus services in the study area are unreliable, which limits confidence in the bus network and therefore its potential use. The lack of Real Time Information across the network was also raised as a key issue.

Evidence:

Evidence on bus reliability is largely anecdotal based on the perceived issues highlighted during the engagement work carried out as part of this study. While there was a fully operational Real Time Information system in operation on the key corridors across Dumfries and Galloway until 2016, due to budgetary pressures, the system is not currently operational.

What people told us:

While there was no specific question on the reliability of bus services in the public survey, of the 1,123 people who gave reasons for their dissatisfaction with the bus service in the open-ended responses, 41 respondents noted issues around bus service reliability. It was noted that buses often do not run to time and cancellations are frequent. The lack of real-time technology across the area was also raised as an issue, with bus users often unaware of problems and unsure how long to wait. Overall, these issues were felt to contribute to a lack of confidence in the bus network and, ultimately, lower levels of bus use.

Key Points:

There is a lack of real time information on bus services in the area and feedback from the consultation exercise suggests that bus services can be unreliable. This can lead to a lack of confidence in the bus network which could be a contributing factor for declining bus patronage.

BU5) Bus Fares

Description:

Bus fares across the network are high, sometimes higher than travel by rail, and noticeably higher than the cost of travel by private car in several instances. This leaves those without access to a car at a disadvantage in terms of their ability to access jobs and education opportunities.

Evidence:

A comparison has been made between bus and rail fares (see Table 5-2) and between bus fares and the cost of making the equivalent journey by car (Table 5-3). It should be noted that the cost of car travel has only taken into account the cost of petrol required to undertake the journey and has not taken into account the associated wear and tear costs to vehicle, insurance or road tax costs.

The results show that, in general, compared to rail, bus fares are lower. The fares comparison against the car has more mixed results with, in general, fares by bus to Ayr and Glasgow being higher than the equivalent cost by car. In addition, travel to Edinburgh is generally more expensive by bus than by car from locations in South Ayrshire.

Table 5-2: Bus vs Rail Fares Comparison

From	Dumfries Bus	Dumfries Rail	Dumfries Difference	Glasgow Bus	Glasgow Rail	Glasgow Difference	Edinburgh Bus	Edinburgh Rail	Edinburgh Difference	Ayr Bus	Ayr Rail	Ayr Difference
Dumfries				£14.10	£34.90	£20.80	£18.00	£151.00	£133.00	£26.00	£28.60	£2.60
Stranraer	£14.40	£54.60	£40.20	£21.00	£26.70	£5.70	£29.90	£69.20	£39.30	£21.00	£22.60	£1.60
Annan	£9.40	£8.70	-£0.70		£34.90			£151.00			£36.00	
Girvan	£34.10	£44.30	£10.20	£20.00	£20.80	£0.80		£42.30		£8.10	£9.50	£1.40
Maybole	£22.60	£38.10	£15.50	£17.40	£17.50	£0.10		£38.70		£5.50	£5.90	£0.40
Lockerbie	£7.30	£66.00	£58.70	£21.40	£26.80	£5.40	£25.30	£38.10	£12.80	£34.20	£50.70	£16.50
Gretna	£9.40	£13.70	£4.30		£34.90			£151.00			£24.00	
New Cumnock	£8.90	£18.40	£9.50	£22.90	£16.20	-£6.70	£26.90			£11.40	£12.50	£1.10
Sanquhar	£6.20	£10.00	£3.80	£23.70	£24.30	£0.60				£14.30	£13.50	-£0.80
Kirkconnel	£8.90	£13.60	£4.70	£23.10	£24.30	£1.20	£26.90	£39.80	£12.90	£13.70	£13.20	-£0.50
Crosshill	£25.20	£34.30	£9.10	£20.00	£2.90	-£17.10		£27.70		£8.10	£16.20	£8.10

Note

Ecclefechan to Dumfries - Day rider is only one available for return journey

Eaglesfield to Dumfries - Day rider is only one available for return journey

Stranraer to Glasgow - Day rider is only one available for return journey

Dalrymple to Glasgow - Day rider is only one available for return journey

Portpatrick to Glasgow - Day rider is only one available for return journey

Stranraer to Ayr - Day rider is only one available for return journey

Dalrymple to Ayr - Ayr Zone 2 dayrider is available for return journey

Portpatrick to Ayr - Day rider is only one available for return journey

Bus Fare information not available for Sanquhar to Dumfries - ticket price from Thornhill used as substitute.

Table 5-3: Bus vs Car Fares/Cost Comparison

| | Peak Day Return | | | | | | | | | | | |
| | Dumfries | | | Glasgow | | | Edinburgh | | | Ayr | | |
From	Bus	Car	Difference	Bus	Car	Difference	Bus	Car	Difference	Bus	Car	Difference
Dumfries				£14.10	£23.10	£9.00	£18.00	£23.77	£5.77	£26.00	£18.15	-£7.85
Stranraer	£14.40	£21.68	£7.28	£21.00	£26.00	£5.00	£29.90	£38.66	£8.76	£21.00	£15.52	-£5.48
Annan	£9.40	£4.74	-£4.66		£25.49			£26.18			£23.07	
Girvan	£34.10	£20.23	-£13.87	£20.00	£16.88	-£3.12		£28.90		£8.10	£6.31	-£1.79
Maybole	£22.60	£17.76	-£4.84	£17.40	£13.20	-£4.20		£25.22		£5.50	£2.60	-£2.90
Lockerbie	£7.30	£3.78	-£3.53	£21.40	£21.62	£0.22	£25.30	£22.29	-£3.01	£34.20	£24.22	-£9.98
Gretna	£9.40	£6.98	-2.42		£26.61			£27.27			£25.31	
New Cumnock	£8.90	£11.81	£2.91	£22.90	£12.77	-£10.13	£26.90			£11.40	£6.98	-£4.42
Sanquhar	£6.20	£8.49	£2.29	£23.70	£15.40	-£8.30				£14.30	£10.18	-£4.12
Kirkconnel	£8.90	£9.51	£0.61	£23.10	£16.04	-£7.06	£26.90	£18.06	-£8.84	£13.70	£8.55	-£5.15
Crosshill	£25.20	£22.50	-£2.70	£20.00	£0.85	-£19.15		£14.47		£8.10	£10.72	£2.62

Note

Ecclefechan to Dumfries - Day rider is only one available for return journey

Eaglesfield to Dumfries - Day rider is only one available for return journey

Stranraer to Glasgow - Day rider is only one available for return journey

Dalrymple to Glasgow - Day rider is only one available for return journey

Portpatrick to Glasgow - Day rider is only one available for return journey

Stranraer to Ayr - Day rider is only one available for return journey

Dalrymple to Ayr - Ayr Zone 2 dayrider is available for return journey

Portpatrick to Ayr - Day rider is only one available for return journey

Bus Fare information not available for Sanquhar to Dumfries - ticket price from Thornhill used as substitute.

What people told us:

Overall, 36% of respondents to the public survey were dissatisfied or very dissatisfied with bus fares, with rates of dissatisfaction slightly higher amongst those living in the A74(M) and A76 corridors (see Figure 5-6).
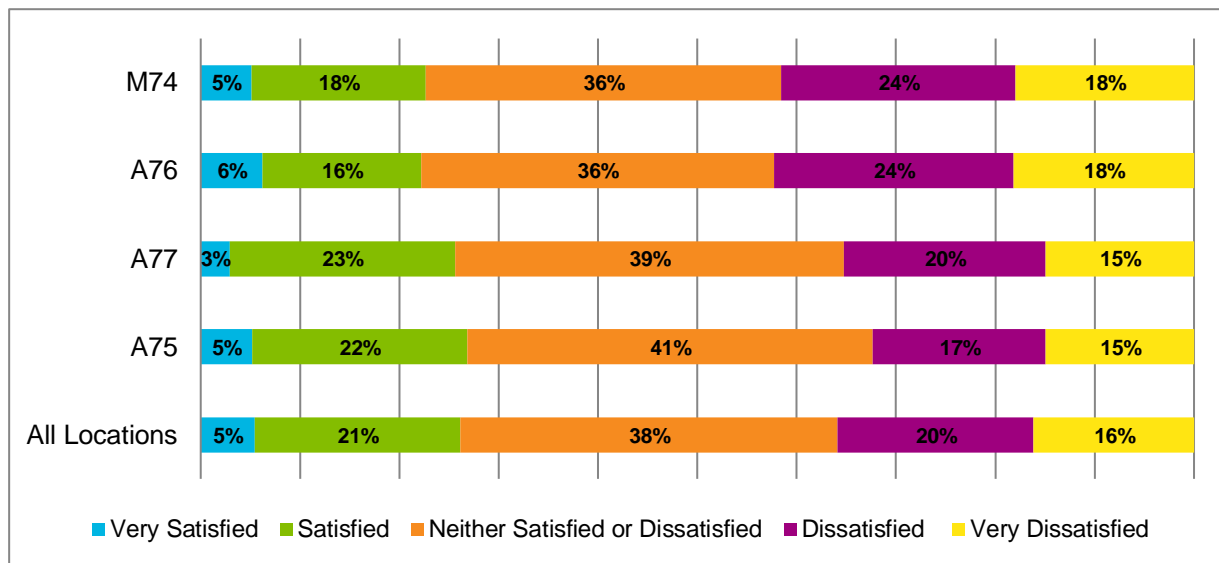
Figure 5-6: Satisfaction with the level of bus fares by corridor[47]

The level of bus fares was also noted in the open-ended responses with 24 respondents noting that fares were too expensive and it was more cost effective to travel by car. Similar comments were noted during the stakeholder workshops.

Key Points:

Travel by bus in the area is generally cheaper than by rail. However, travel by car (based on fuel costs) is generally cheaper, meaning those without access to a car or unable to drive are potentially at a financial disadvantage.

BU6) Integrated Ticketing

Description:

There is a lack of integrated ticketing for combined rail and bus trips.

Evidence:

The only available integrated bus/rail ticket in the study area is the Stagecoach PlusBus ticket which allows unlimited bus travel on Stagecoach services. However, the ticket can only be used within the urban area of Dumfries on specific services[48].

What people told us:

During the engagement programme, stakeholder engagement highlighted the view that integrated through ticketing should be offered between bus and rail and that this integration would support tourism and open-up employment opportunities. It was noted that given the trend towards decreasing numbers of younger people holding driver's licenses or owning a car, integrated ticketing would particularly benefit this demographic and may help stem outmigration of younger people from the area.

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[47] Source: Public Survey
[48] PlusBus services are Service 1: Dumfries-Locharbriggs; Service 2: Dumfries-Heathhall; Service 3: Dumfries-Georgetown; Service 4: Dumfries-Larchfield; Service 5: Dumfries-Mountainhall-Crichton; Service 6: Dumfries-Kingholm Quay; Service 6a: Dumfries-Glencaple-Caerlaverock; Service 7: Dumfries-Troqueer; Service 8: Dumfries-Cargenbridge-Broomlands; Service 9: Dumfries-Summerhill/Hardthorn/Barnhill; Service 10: Dumfries-Lochside; Service 12: Dumfries-Lincluden.

Key Points:

A lack of integrated ticketing in the area may be constraining the ability of residents to effectively and economically access employment. Improved ticketing integration may be particularly beneficial in supporting younger people access opportunities, with data showing a decreasing trend for this demographic to own a car.

BU7) Service Integration

Description:

There is a lack of integration between:

- Connecting bus services and the timetables of more strategic bus routes;

- Bus and rail timetables, with long wait times for those accessing rail by bus (and vice-versa for those switching from rail to bus on arrival at stations);

- Bus and rail stations due to poor physical integration creating issues for users e.g. with impaired mobility in switching between the two modes of transport; and

- Bus and ferry services at the ports at Cairnryan.

This lack of integration reduces the attractiveness of public transport and contributes to higher car use, with individuals instead electing to either drive to their interchange point or use the car for their entire trip.

Evidence:

Bus-to-Bus Integration:

To demonstrate the issues with bus-to-bus integration, case study examples are provided of connections to the key strategic X75 / 500 Service and the route between Dumfries and Ayr. These examples were identified by members of the public and stakeholders during the consultation undertaken for the study.

The X75 / 500 Service operated by Stagecoach previously ran between Carlisle and Stranraer but now only operates between Dumfries and Stranraer. If travelling from Carlisle to Stranraer, it is necessary to catch the connecting bus Service 79 from Carlisle to Dumfries. Table 5-4 shows the wait times in Dumfries when using this service, with the shortest times highlighted in orange. As shown, the shortest wait times in Dumfries for connections to Stranraer are between 20 and 45 minutes, in most cases 30 minutes or more. This adds considerable time to the overall journey along the A75.

Table 5-4: Carlisle to Stranraer (A75) Bus Integration

Service 79 Arrival in Dumfries from Carlisle	X75/500 Next departure from Dumfries to Stranraer	Wait time in Dumfries
	06:28	Not possible
06:58	09:13	02:15
07:43	09:13	01:30
08:43	09:13	00:30
09:58	11:38	01:40
11:08	11:38	00:30
12:06	12:58	00:52
13:08	13:53	00:45
14:06	15:33	01:27
15:06	15:33	00:27
16:06	16:38	00:32
17:06	17:23	00:17
18:06	20:13	02:07
19:06	-	Not possible without further interchange
20:02	-	Not possible without further interchange
22:45	-	Not possible without further interchange

Similarly, travel by bus along the A76 between Dumfries and Ayr requires interchange in Cumnock, changing from the Service 246 operating between Dumfries and Cumnock to the Service 42 operating between Cumnock and Ayr. Table 5-5 shows the wait times in Cumnock if travelling from Dumfries to Ayr, with the shortest times highlighted in orange. The analysis shows that wait times in Cumnock can vary between one minute and around 1 hour 15 minutes, depending on time of travel, therefore limiting overall connectivity.

Table 5-5: Dumfries to Ayr (A76) Bus Integration

Service 246 Arrival in Cumnock from Dumfries	Service 42 Next departure from Cumnock to Ayr	Wait time in Dumfries
07:32	07:33	00:01
09:42	09:43	00:01
11:37	12:43	01:06
13:37	13:43	00:06
16:07	16:43	00:36
18:07	19:20	01:13
18:47	-	Not possible without further interchange

Bus-to-Rail Integration:

In terms of integration between bus and rail timetables, the following case study examples highlight the limited integration between buses and trains:

• From Thornhill on the A76 corridor to catch trains to Carlisle;

• From Eastriggs, east of Dumfries, just south of the A75 corridor to catch trains to Glasgow; and

• From Beattock, north of Lockerbie just west of the A74(M) to catch trains to Edinburgh.

The analysis considers 'access time' i.e. the total travel time from the origin location to a departing train (i.e. an outbound trip), and considers bus travel time, any walk time required between the bus stop and the train station, and any wait time at the station for the train departure.
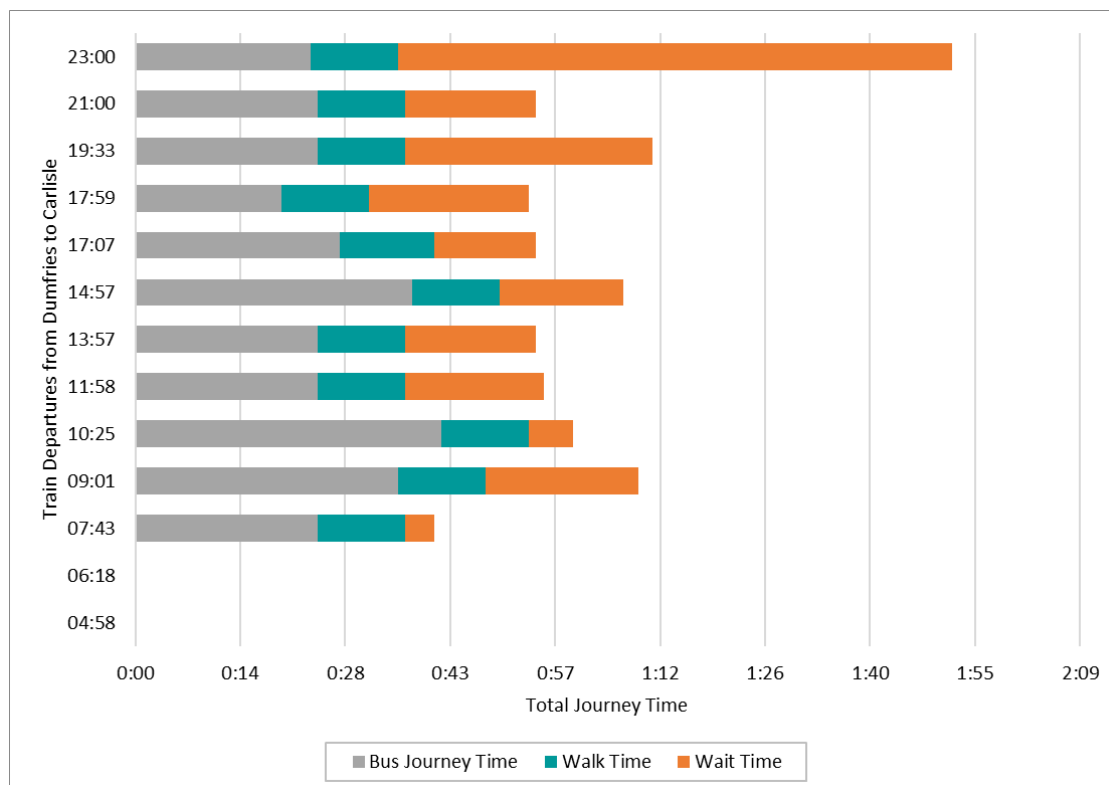
Figure 5-7: Access time from Thornhill when connecting with trains at Dumfries to Carlisle
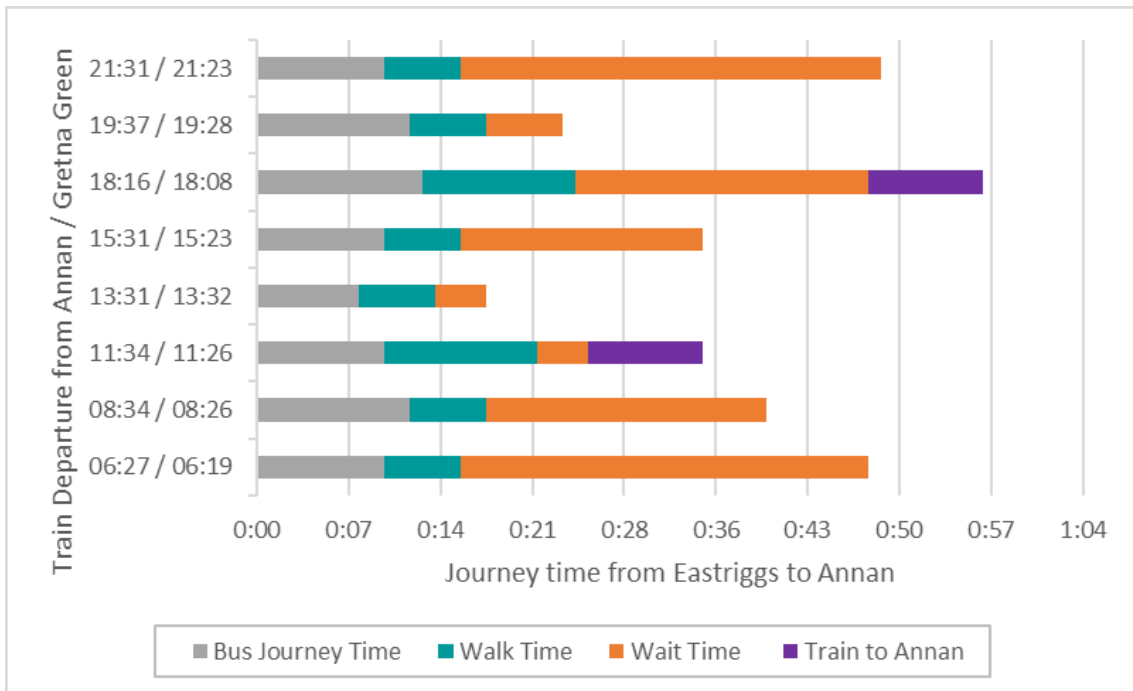
Figure 5-8: Access time from Eastriggs when connecting with trains either at Annan or Gretna to Glasgow
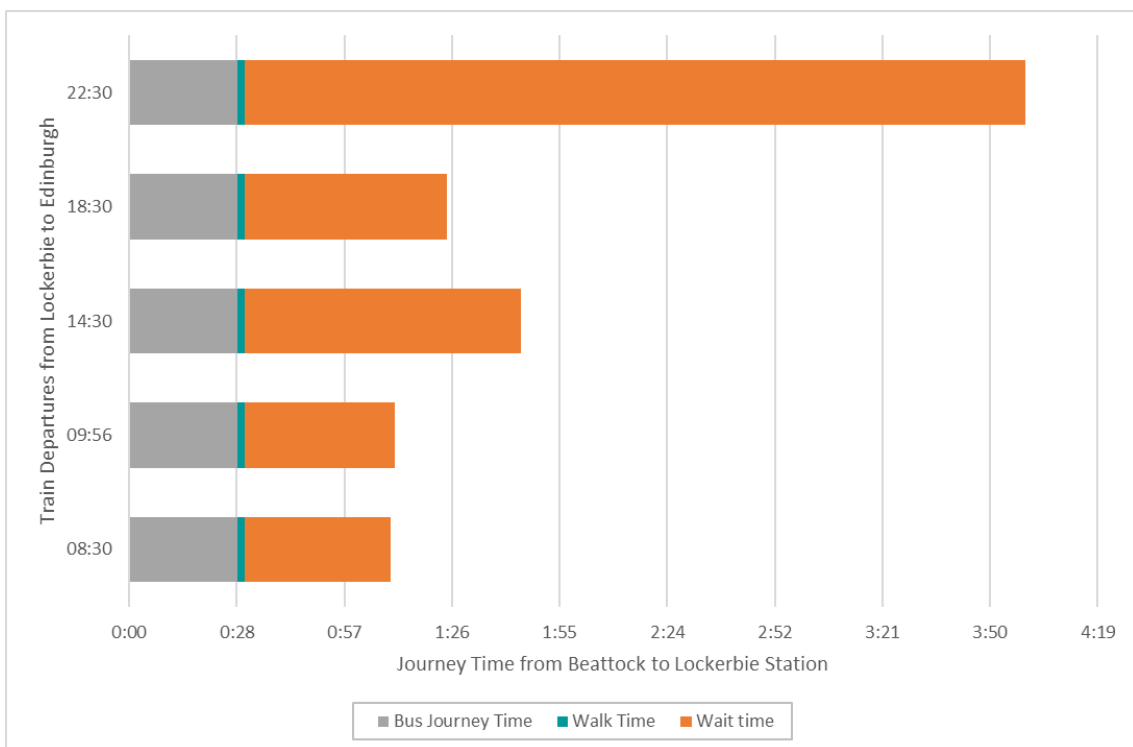
Figure 5-9: Access time from Beattock when connecting with trains at Lockerbie to Edinburgh

The analysis highlights the long 'access' times, and specifically long wait times for departing trains, with interchange time (walk and wait time) from alighting the bus to departing on the train:

- Ranging from 15 minutes to 1 hour 30 minutes when accessing trains to Carlisle from Thornhill;

- Ranging from 12 minutes to 40 minutes when accessing trains to Glasgow from Eastriggs;

- Ranging from around 40 minutes to over 3 hours when accessing trains to Glasgow from Eastriggs;

- Long interchange times when accessing later running trains given the much reduced bus services available in the evening across the region.

In terms of a lack of physical integration between bus and rail stations and stops:

- Stranraer Railway Station is located at the end of the Pier in the town, and although it is served by bus, the town's circular bus service does not stop at the station and a 10 – 15-minute walk from the centre is required to access the rail station.

- Dumfries Railway Station is located 5 - 10 minutes' walk from the main bus terminus on Whitesands;

- Barrhill Railway Station is located away from the village centre where the nearest bus stop is located and an approximate 10-minute walk along a narrow rural road is required to access the station.

- Gretna Green Railway Station is located 5 - 10 minutes' walk from the nearest bus stop (around 10 minutes from the main Annan Road bus stops in Gretna).

Bus-to-Ferry Integration:

In total, there are four services which meet the ferry arrivals and departures at Cairnryan. These are:

- **Service 350 between Stranraer and Cairnryan** operated by Wigtownshire Community Transport - there are three services per day to the P&O ferry terminal and three services per day to the Stena Line ferry terminal and one service which stops at both terminals.

- **Service 58/60/358/360 between Ayr and Cairnryan** operated by Stagecoach South West Scotland.

- **Service 920 between Dumfries and the Stena Line Ferry Terminal** at Cairnryan, operated by National Express.

- **Service 923 between Glasgow / Ayr and the Stena Line Ferry Terminal and the connecting Service 900 which runs from Glasgow to Edinburgh,** operated by Ulsterbus.

Service 923/900 is run by Stena Line in partnership with Ulsterbus as part of a city centre to city centre combined ticket option. With this ticket, passengers can book a ferry ticket which includes the coach journey from Edinburgh, Glasgow or Ayr to Cairnryan as well as the coach trip between Stena Line's Belfast Terminal and Belfast Bus Station. Service 900 operates between Edinburgh and Glasgow where it connects with service 923 which operates between Glasgow / Ayr and Cairnryan.

Table 5-6 and Table 5-7 show the ferry arrival and departure times and connecting bus services. For ferries arriving at the port, connections were only noted to exist if the wait time once the ferry had arrived was under an hour. For ferries departing the Port, Stena Line request that passengers check in at least 30 minutes before the departure time and P&O request that passengers check in 60 minutes before departure time. Bus connections have therefore only been noted where they fit into these time frames.

Table 5-6: Ferry arrival times and connecting bus services departing from Cairnryan Ports

Ferry Arrival Times	Ferry Company	Service 350 (to Stranraer)	Service 60/358/360 (to Ayr)	Service 923 (to Ayr / Glasgow)
05:52	Stena Line	No service – 06:55 departure	No service	No service
06:00	(P&O)	No service	No service – 07:44 departure	No service
09:30	(P&O)	Yes – 10:00 departure	Yes – 09:53 departure	No service
09:52	Stena Line	Yes – 10:25 departure	No service – 09:57 or 11:57 departure	Yes – 10:15 departure
12:30	P&O	Yes- 12:45 departure	No service - 13:53 departure	No service
13:52	Stena Line	Yes – 14:20 departure	No service – 13:57 or 15:57 departure	Yes – 14:15 departure

Ferry Arrival Times	Ferry Company	Service 350 (to Stranraer)	Service 60/358/360 (to Ayr)	Service 923 (to Ayr / Glasgow)
15:30	P&O	Yes – 15:50 departure	Yes – 15:53 departure	No service
17:52	Stena Line	Yes – 18:20 departure	No service	Yes – 16:15 departure
18:30	P&O	Yes – 19:15 departure	No service – 19:45 departure	No service
21:52	Stena Line	No service	No service	No service
22:00	P&O	No service	Yes – 22:21 departure	No service
01:52	Stena Line	No service	No service	No service
01:59	(P&O)	No service	No service	No service

Table 5-7: Ferry departure times and connecting bus services arriving at Cairnryan Ports

Ferry Departure Times	Ferry Operator	Last check-in time	Service 350 (from Stranraer)	Service 60/358/360 (from Ayr)[49]	Service 920 (from Dumfries)	Service 923 (from Ayr / Glasgow)
03:45	Stena Line	03:15	No service	No service	No service	No service
04:00	P&O	03:00	No service	No service	No service	No service
07:30	Stena Line	07:00	Yes - 06:55 arrival	No service	No service	No service
07:30	P&O	06:30	No service - 06:50 arrival	No service	No service	No service
10:30	P&O	09:30	Yes - 09:15 arrival	Yes - 09:18 arrival	No service	No service
11:30	Stena Line	11:00	Yes – 10:25 arrival	No – 09:14 or 11:14 arrival	Yes – 10:25 arrival	Yes – 10:40 arrival
13:30	P&O	12:30	Yes – 12:20 arrival	No service – 11:18 arrival	No service	No service
15:30	Stena Line	15:00	Yes – 14:20 arrival	No service - 13:14 arrival	No service	Yes – 14:40 arrival
16:30	P&O	15:30	Yes – 15:20 arrival	Yes – 15:18 arrival	No service	No service
19:30	Stena Line	19:00	Yes – 18:20 arrival	No service – 17:14 or 19:14 arrival	No service	Yes – 18:40 arrival
20:00	P&O	19:00	No – 15:20 or 19:15 arrival	No service – 17:18 or 19:18 arrival	No service	No service
23:30	Stena Line	23:00	No service	No service – 19:14 arrival	No service	No service
23:59	P&O	22:59	No service	No – 21:26 or 23:21 arrival	No service	No service

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[49] Where wait time is under 1 hour

Overall, while the Service 350 to Stranraer connects with the majority of the day time departures (between 07:30 and 17:30) and arrivals (between 09:30 and 19:30), connecting services to / from Ayr, Glasgow, and, particularly, Dumfries are far more limited.

What people told us:

Overall, 55% of respondents to the public survey stated they were either dissatisfied or very dissatisfied with bus connections to the rail station. This level of dissatisfaction was higher than that with all other aspects of the rail network (e.g. frequency of rail services, level of fares, parking at stations etc.). As shown in Figure 5-10, the level of dissatisfaction with bus connections to the rail station was highest amongst those living in the A77 corridor, followed by the A75 corridor.
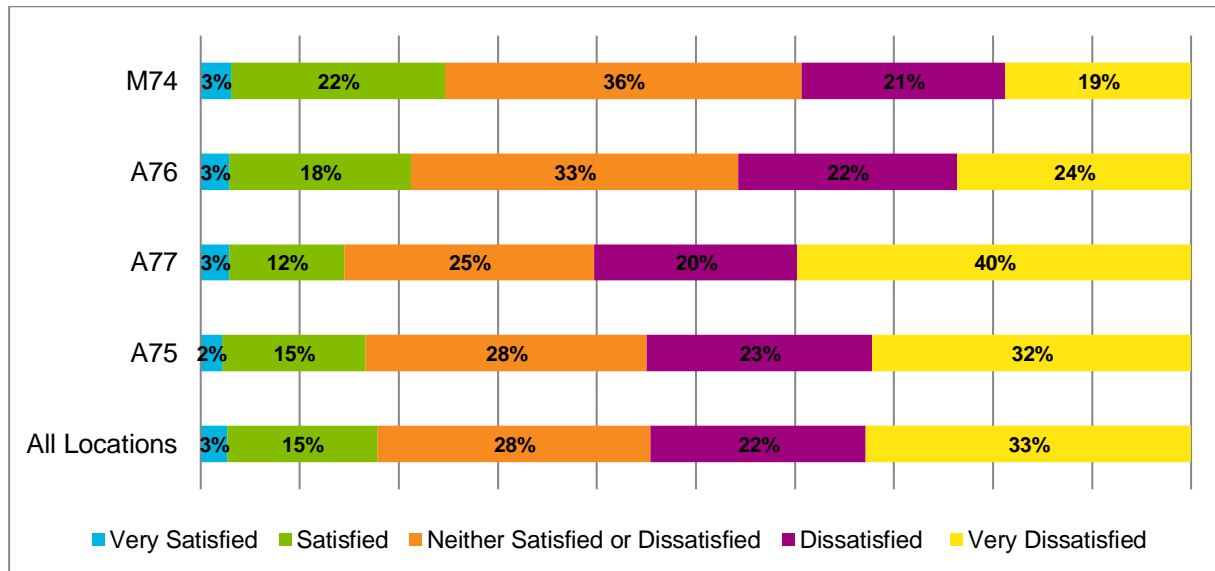
Figure 5-10: Satisfaction bus connections to the station by road corridor[50]

The lack of integration between bus and rail services was also highlighted as an issue in the open response questions in the survey. In total, of the 1,523 respondents who provided a reason for their dissatisfaction with the rail service in the open-ended responses, 111 noted issues with bus / rail integration and, of the 1,118 respondents who provided a reason for their dissatisfaction with the bus service, 47 noted issues with bus / rail integration. The issue was also highlighted at the stakeholder workshops, with several attendees noting that it can be challenging to better integrate bus and rail services when there is direct competition between the two modes. This issue was also confirmed by bus operators.

Respondents to the public survey were also asked to indicate how satisfied they were with current access arrangements to the ferry ports at Cairnryan. Overall 64% of respondents were either dissatisfied or very dissatisfied with access to the ports by bus. This figure was similar across each of the corridors but was slightly higher amongst those living in the A74(M) and A75 corridors. Bus access to the ferry ports at Cairnryan was also highlighted as an issue in the open response questions to the survey and during the stakeholder workshops, where it was noted that public transport connectivity to the ferry has declined since Stena Line moved its operations from Stranraer.

Key Points:

There is a lack of integration between bus services, bus and rail services, and bus and ferry services. This can result in long wait times for passengers, resulting in long journey times and reducing access for those without access to a car. Physical integration of rail and bus services can also be problematic, particularly for those with mobility impairments.

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[50] Source: Public Survey

5.4 Rail Network Specific Problems

RA1) Access to Rail Stations

Description:

Many communities within the region are located some distance from the nearest railway station which constrains local people's ability to use rail as a means of transport.

Evidence:

There is no rail access along the A75 between Dumfries and Stranraer (Castle Douglas, Gatehouse of Fleet, Newton Stewart, the Machars) and at the communities of New Galloway, Moniaive, Dalmellington, Eastriggs, Thornhill, Beattock, and Moffat.

Of these, Eastriggs, Thornhill and Beattock are situated adjacent to the railway line and previously benefited from operational rail stations which were closed in 1965 (Eastriggs and Thornhill) and 1972 (Beattock). Further information on each of these locations is provided in Table 5-8. It is noted that Beattock is located just four miles from Moffat, a larger town and the combined population is more than 2,500. In addition, while Carstairs is the nearest rail station north of Beattock, it was noted during the consultation that many people travel to Larkhall rather than Carstairs to take advantage of the quicker service from this station.

Table 5-8: Background to Eastriggs, Thornhill and Beattock

Location	Population	Nearest Rail Station	Distance to nearest Rail Station (kms)	Existing bus connections to nearest Rail Station	Comment on bus service
Eastriggs	1,810	Annan (west)	6	Service 79 / 179	Service 79 routes close to Annan Railway Station; there is a 5-10 minute walk from the nearest 179 bus stop to Annan Railway Station
		Gretna (east)	8	Service 79 / 179	Nearest bus stop is in Gretna centre, a 5-10-minute walk from Gretna Rail Station
Thornhill	1,660	Sanquhar (north)	19	Service 246	Nearest bus stop is 6-mintue walk from Sanquhar Station
		Dumfries (south)	26	Service 202 /212	Service frequency very limited
Beattock	500	Lockerbie (south)	25	Service 380	-
		Carstairs (north)	60	No direct connections	-

There are also several communities in the study area, where while there are existing stations, these are located some distance from the centre of the nearest settlements which acts to limit access. These include:

- **Stranraer Rail Station** which is located at the end of Stranraer Pier, a 10-15 minute walk from Stranraer Town Centre. The route between the station and the town is exposed and isolated and there are no bus services which link directly to the station.

- **Gretna Green Station** which is also located an approximate 10-15 minute walk from Gretna Town centre. The nearest bus stop is located three minutes' walk from the station, however only Service 382 from Lockerbie to Gretna serves this stop. Although this route provides a connection to / from Gretna town centre and the Outlet Shopping Village, it is relatively infrequent (approximately every two hours). While the nearest bus stop is located just three minutes' walk from the station, the nearest bus stop on the main bus route between Dumfries and Carlisle (Service 79) is in the centre of Gretna.

- **Barrhill Rail Station** which is located 20 - 25 minutes' walk from Barrhill Village. The route between the station and the village is unlit and narrow, creating personal safety and security issues for users walking or cycling to

the station. There is no bus service which links directly to the station, with the closest bus stop located in Barrhill Village. As noted in Chapter 3, 88% of users of Barrhill Station drive to the station, with a further 6% travelling by taxi and just 6% walking. This may in part be due to limited walking, cycling and bus connections to the station.

What people told us:

While there was no specific question on the proximity of the nearest rail station in the public survey, a large number of respondents highlighted this issue within the open-ended response questions. In total, of the 1,523 people who gave reasons for their dissatisfaction with the rail service, 132 respondents noted that their nearest rail station was too far away, 47 respondents noted that a new rail station was required at Thornhill, and 16 respondents noted that a new rail station was required at Beattock. A clustering of comments on the Placecheck Tool was centred on Thornhill in particular calling for the reopening of a rail station in the town.

The out-of-town location of Stranraer Rail Station was also frequently raised by both the public and consultees as a barrier to its development and use. It was noted the station is in an isolated location and there are no connecting bus services when people arrive on the train. The walk between the station and the town centre was also said to be unattractive, with the route crossing derelict land (due to the relocation of the ferry terminal to Cairnryan). This creates safety and security concerns, particularly when people are arriving at night, and does not create a welcoming impression of the town.

Respondents to the public survey were also asked to indicate their top three priorities for investment in transport in the study area. In total, 11% of respondents selected new railway stations as their first priority. As shown in Figure 5-11, the proportion selecting this option as their top priority differed by corridor, with 17% of those in the A76 corridor (where Thornhill is located) and 11% of those in the A74(M) corridor (where Beattock is located) selecting this as their top priority compared to just 5% in the A75 corridor (where Eastriggs is located) and 3% in the A77 corridor.
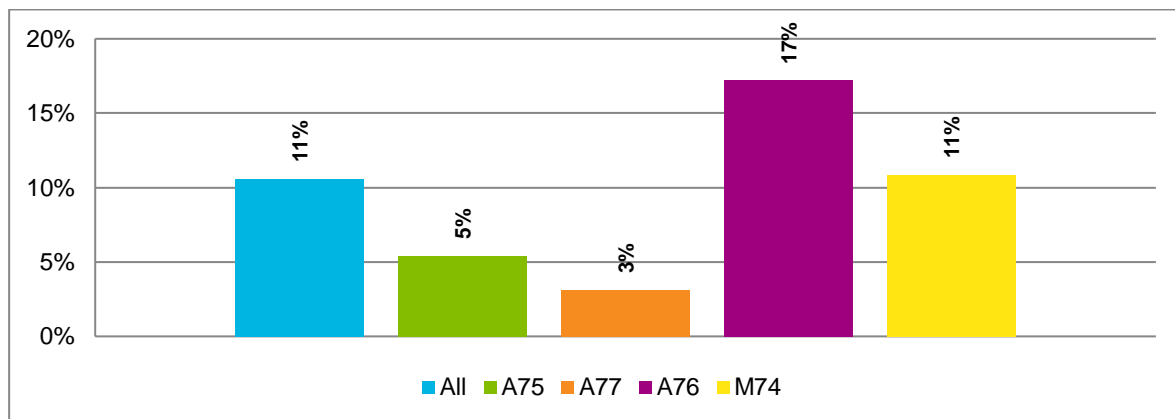
Figure 5-11: Proportion of respondents selecting 'new railway stations' as their top priority transport investment by corridor[51]

Key Points:
The limited rail coverage across the region constrains local people's ability to utilise rail as a means of transport. This can be a significant disadvantage for those without access to a car and leaves people reliant on the bus network.

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[51] Source: Public Survey

RA2) Rail Station and Rolling Stock Quality

Description:

There are problems with the standard of facilities and the physical accessibility of some rail stations and there is a general perception that the rolling stock on the GSWL is dated compared to more modern trains. These issues can create problems in terms of both physical accessibility and journey quality.

Evidence:

Figure 5-9 provides details of the facilities available at each station within the study area alongside the average number of passengers per day recorded at each station in 2017/2018 as obtained via LENNON ticket sales data provided as part of this study. As shown, several of the stations do not offer ticket purchasing facilities or toilet facilities, including Annan and Maybole both of which attract a relatively high proportion of passengers.

Table 5-9: Facilities available at stations within the study area[52]

Station	Ticket office	Pre-purchase collection	Ticket machine	Seated area	Waiting room	Toilets	Shop	Average Passengers per day (2017/18)
Maybole	No	No	No	Yes	Yes	No	No	317
Girvan	Yes[53]	Yes	No	Yes	Yes	Yes	Yes	392
Barrhill	No	No	No	Yes	Yes	No	No	22
Stranraer	Yes[54]	Yes	No	Yes	Yes	Yes	No	192
New Cumnock	No	No	No	Yes	Yes	No	No	76
Kirkconnel	No	No	No	Yes	Yes	No	No	61
Sanquhar	Yes	No	No	Yes	Yes	No	No	77
Dumfries	Yes[55]	Yes	No	Yes	Yes	Yes	No	1,067
Annan	No	No	No	Yes	Yes	No	No	364
Gretna Green	Yes	No	No	Yes	Yes	No	No	115
Lockerbie	Yes	Yes	No	Yes	No	Yes	No	712

Table 5-10 provides details on the accessibility of stations within the study area. Overall, five stations within the study area do not have step free access, namely Girvan, Barrhill, New Cumnock, Kirkconnel and Sanquhar. While there is level access to the southbound platform at Dumfries Station from the road, buses stop outside the main entrance adjacent to the northbound platform necessitating use of the bridge or a walk around the station via St Mary's Street. Only four of the stations in the study area have ramps for train access available (Girvan, Stranraer, Dumfries and Lockerbie). None of the stations have accessible ticket machines and just three have an accessible booking counter (Girvan, Stranraer, and Dumfries[56]).

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[52] Source: ScotRail
[53] Girvan Ticket Office is open Monday to Friday: 06:35 to 13:39; Saturday: 06:35 to 13:39; and Sunday: 11:10 to 18:50
[54] Stranraer Ticker Office is open Monday to Friday: 09:30 to 15:00 and 16:00 to 19:00; Saturday: 09:30 to 15:00 and 16:00 to 19:00; and Sunday: 09:30 to 19:00
[55] Dumfries Ticket Office is open Monday to Friday: 06:35 to 19:30; Saturday: 06:35 to 19:30; and Sunday: 10:30 to 19:55
[56] It is to be noted that in April 2019, Dumfries Station was selected as one of 73 stations across the UK rail network to receive funding from the Access for All programme to, subject to a feasible design being possible, undertake works to deliver accessibility improvements to the station.

Table 5-10: Accessibility of stations within the study area[57]

Station	Step free access coverage	Step free access information	Ramp for train access available	Accessible ticket machines	Accessible booking office counter	Customer help points	Induction Loop available	Staff help opening times	Average Passengers per day (2017/18)
Maybole	Yes	Level access from car park to single platform	No	No	No	Yes	Yes	No	317
Girvan	No	Level to ticket office and platform 1, connecting underpass & stairs to platform 2	Yes	No	Yes	Yes	Yes	Monday-Saturday: 06:35 to 13:39; Sunday: 11:10 to 18:50	392
Barrhill	No	Level to platform 1 with connection barrow crossing to platform 2. No unassisted wheelchair access	No	No	No	No	Yes	No	22
Stranraer	Yes	Ramp up to ticket office and platform	Yes	No	Yes	Yes	Yes	Monday-Saturday: 09:30 to 15:00 and 16:00 to 19:00; Sunday: 09:30 to 19:00	192
New Cumnock	No	Level to platform 1 – ramp to platform 2	No	No	No	Yes	Yes	No	76
Kirkconnel	No	Level to platform 1 and connecting footbridge with stairs to platform 2. No unassisted wheelchair access to platform 2	No	No	No	Yes	Yes	No	61
Sanquhar	No	Ramps to both platforms. Platform to platform access is via road bridge	No	No	No	Yes	Yes	No	77
Dumfries[58]	Yes	Level access to ticket office and northbound platform. Level access from road to southbound platform, connecting footbridge with stair between platforms	Yes	No	Yes	Yes	Yes	Monday-Saturday: 06:35 to 19:30; Sunday: 10:30 to 19:35	1,067
Annan	Yes	Level to platform 1 – ramp down to platform 2 and connection footbridge with stairs between platforms	No	No	No	Yes	Yes	No	364
Gretna Green	Yes	-	No	No	No	Yes	Yes	No	115
Lockerbie	Yes	Level to platform 1 with connecting footbridge with stairs and life access to platforms 2	Yes	No	No	Yes	Yes	Monday-Saturday: 06:50 to 20:45; Sunday: 10:50 to 18:00	712

[57] Source: ScotRail

The trains which are currently used on the GSWL are Class 156 Super Sprinter two carriage diesel multiple units, which were constructed during the late 1980s. However, a significant refurbishment and modernisation programme has recently been completed across all 43 trains in the fleet, including the installation of:

- A fully accessible toilet, two dedicated wheelchair spaces, new door opening equipment and sounders to ensure the trains are complaint with PRM-TSI (Person of Reduced Mobility) standards;

- Modern passenger facilities such as new tables, carpets, energy efficient lighting, heating system overhauls, power sockets and Wi-Fi, full internal / external livery;

- New modern seats (the same as those used in C385 EMUs (Electric Multiple Units)); and

  Controlled Emission Tanks (CET) to collect toilet effluent, therefore halting the practice of flushing direct onto the tracks of toilet effluent.

What people told us:

In total, 37% of respondents to the public survey were either dissatisfied or very dissatisfied with facilities at their nearest station, with the levels of dissatisfaction highest amongst those living in the A77 corridor (see Figure 5-12). A lower proportion of respondents stated that they were dissatisfied or very dissatisfied with the physical accessibility of stations (16%) and the physical accessibility on trains (13%). While this level of dissatisfaction is lower than with some other aspects of the rail service, it should be borne in mind that only a segment of the population is impacted by mobility issues and those who do not experience problems with mobility are unlikely to have identified physical accessibility as an issue. Overall, dissatisfaction with physical accessibility at the station and on the train, was slightly higher amongst those living in the A77 corridor.
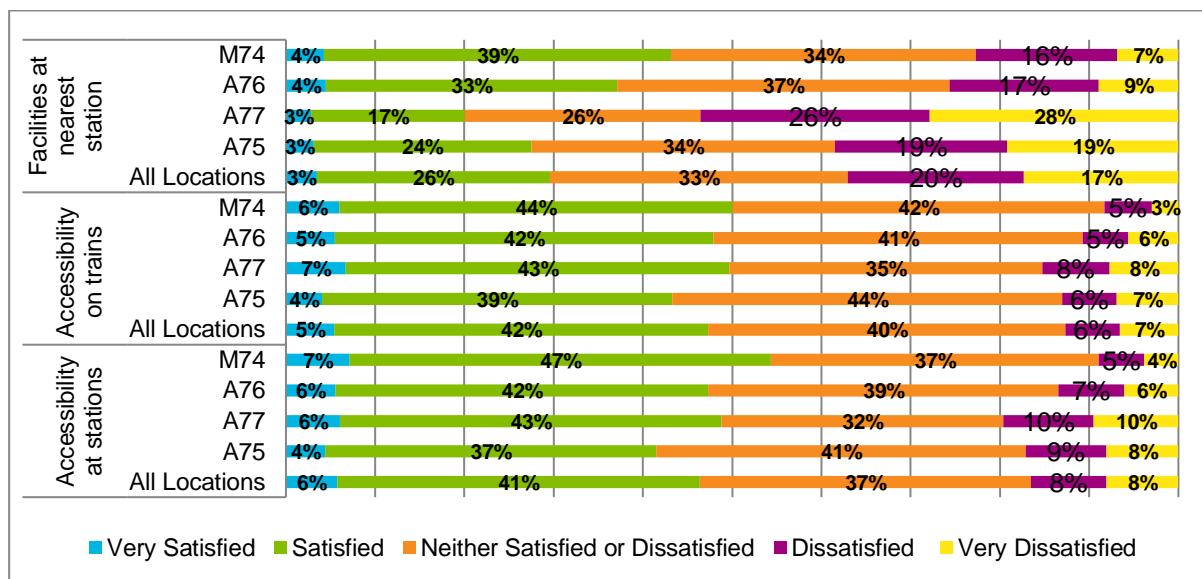
Figure 5-12: Satisfaction with nearest station facilities and physical accessibility at station by corridor[59]

A wide range of comments on the quality of the stations and rolling stock were received in the open-ended responses to the public survey, including:

- Facilities at stations are limited with no covered seating and no ticket issuing facilities;

- There is a lack of facilities for cyclists which discourages cycle use (this is discussed further under problem AT2);

- There is a lack of disabled access on the southbound platform at Kirkconnel Station;

- There is no disabled access to the southbound platform at Girvan Station from the south west of the station (Bourtreehill);

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[59] Source: Public Survey

- It is difficult for disabled and mobility impaired users to change trains as stations are not accessible. Ayr, Prestwick, and Dumfries Stations were highlighted as particularly problematic in this regard due to the bridge between platforms;

- Since buses stop outside the main entrance at Dumfries Station which is adjacent to the northbound platform, users travelling south are required to cross the railway using the bridge or take a long walk around the station via St Mary's Street;

- Stranraer Station car park is located some distance away from the platforms which makes it difficult for those with mobility issues;

- On-train wi-fi connections are poor and there is a lack of sockets which makes on-train working difficult; and

- There is insufficient space for wheelchairs / prams on the trains.

Key Points:

Several stations across the study area have poor quality access and facilities, potentially putting those with mobility needs, such as the elderly and young families with prams etc., at a disadvantage in accessing the rail network. There is also a perception of poor quality rolling stock on the rail network although Transport Scotland's programme to improve the trains is due to be completed by the summer of 2019, providing an upgrade to all train units, improving accessibility and carriage quality.

RA3) Parking at Stations

Description:

There is limited car park capacity at several stations in the study area, including Lockerbie and Barrhill.

Evidence:

Table 5-11 provides a summary of the available car parking facilities at each station within the study area[60] along with the average number of passengers per day recorded at each station in 2017/18 and Figure 5-13 shows the peak car park occupancy recorded at each station for which car park occupancy data is available. This data is based on car park occupancy surveys undertaken on one Saturday and one weekday during June 2018. It is noted that the occupancy data only reflects the car parks for which the capacity is known – unmarked car parks are not included.

Table 5-11: Station Car Park Capacity

Station	Parking Zones	Parking Capacity (cars)	Average Passengers per Day (2017/18)
Maybole	Station car park	9	317
	Drop-off / pick-up spaces within station area	3	
	Taxi spaces within station car park	2	
Girvan	Station car park	15	392
	Unmarked area located adjacent to station car park where people park illegally	Unmarked	
Barrhill	Station car park	1 (accessible space)	22
	On road parking on single track access road	7	
Stranraer	Station car park	23	192

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[60] Data for Stranraer, Barrhill, Girvan, Maybole, New Cumnock, Kirkconnel and Dumfries was collected as part of the car park occupancy surveys undertaken in June 2018 for this study. Data for Sanquhar, Annan, Gretna Green, and Lockerbie was sourced from the ScotRail website and desk-based research

Station	Parking Zones	Parking Capacity (cars)	Average Passengers per Day (2017/18)
	Unmarked unofficial car park (formerly used by cars and coaches waiting to board ferries)	Unmarked	
New Cumnock	Station car park	21	76
	Unmarked area located adjacent to station car park where people park illegally	Unmarked	
Kirkconnel	Station car park	4	61
	Unmarked bays adjacent to station access road	Unmarked	
Sanquhar	Station car park	4 general and 1 accessible	77
	Drop-off / pick-up spaces within station area	1	
Dumfries	Station car park	153	1,067
	Unmarked area located adjacent to station car park where people park illegally	Unmarked	
Annan	Station car park	General parking unmarked but capacity for approximately 12 spaces plus 1 marked accessible	364
	On road spaces on Station Road	Unmarked	
	Drop-off / pick-up spaces within station area	1	
Gretna Green	Station car park	30 general and 5 accessible	115
	Drop-off / pick-up spaces within station area	2	
Lockerbie	Car parks adjacent to Station	32	712
	Parking bays next to Royal Bar	5	
	On-street parking on Well Road and Station Road	Unmarked but capacity for 30+	
	Drop-off / pick-up spaces within station area	3	
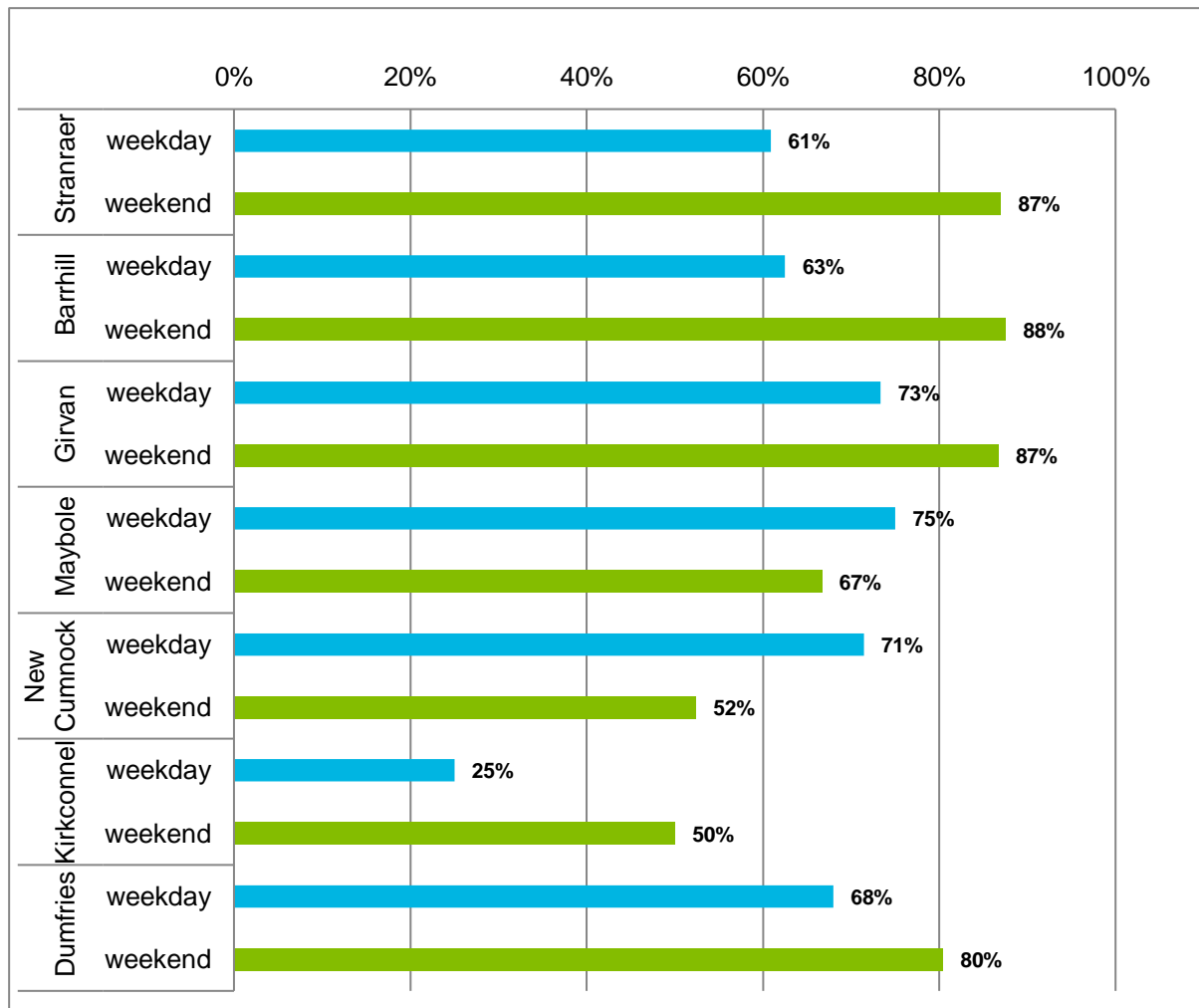
Figure 5-13: Peak occupancy of car parks during the Saturday and weekday survey period

Of the stations surveyed, occupancy levels were highest at Barrhill, with all but the disabled parking space occupied at 1600 on the day of the Saturday survey. Given Barrhill's relatively dispersed catchment area and high rate of car use (as set out in Chapter 3), the number of dedicated parking spaces at the station is low, with just one dedicated station space and the remainder being on road spaces on the single-track access road.

Occupancy levels were also generally high at Stranraer and Girvan. At Stranraer, 20 of the 23 dedicated station spaces were occupied on Saturday between 1100 and 1300 while at Girvan, 13 of the 15 dedicated station spaces were occupied on Saturday between 1130 and 1200.

At Dumfries, there are a total of 153 station spaces available as well as several on-street spaces, with the maximum occupancy occurring on Saturday when 123 spaces were occupied between 1300 and 1400.

While a car park occupancy survey was not undertaken at Lockerbie, the problems with parking in the town have been recognised and SWestrans is currently examining the potential of acquiring land to the south side of the station to enable additional parking to be provided.

What people told us:

Overall, 44% of respondents to the public survey were either dissatisfied or very dissatisfied with parking at railway stations. The results were similar across all corridors, with slightly lower levels of dissatisfaction amongst those living in the A76 corridor (see Figure 5-14).
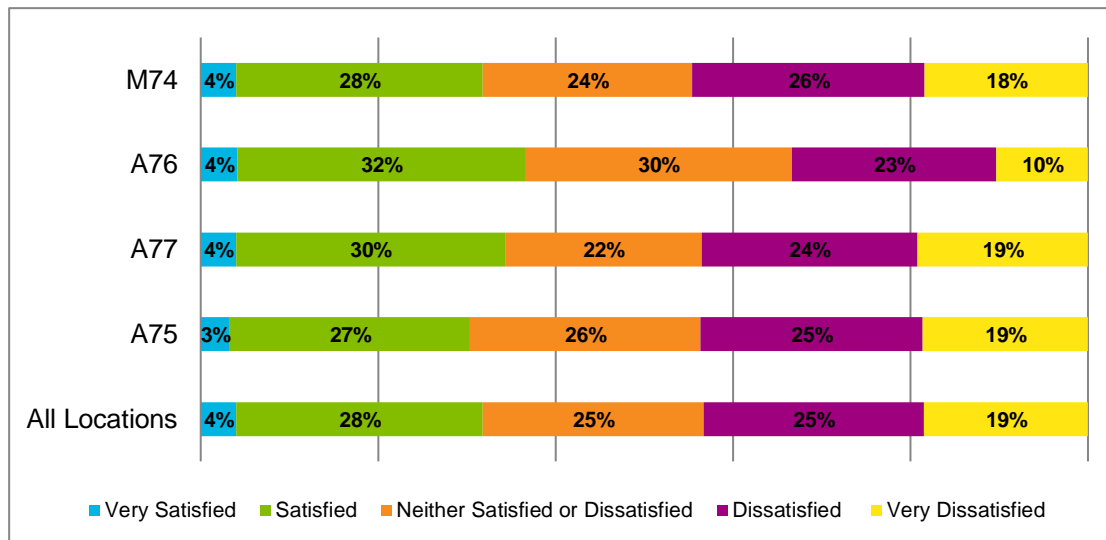
Figure 5-14: Satisfaction with parking at rail stations[61]

Comments about the lack of parking were also received in the open-ended questions in the public survey, with key points raised including:

- Due to high numbers of people driving to Lockerbie Rail Station for onward travel by rail to the Central Belt, there are problems with both a lack of and indiscriminate parking at Lockerbie.

- There are insufficient disabled and general parking spaces at Barrhill Station. This is particularly the case given that Barrhill Station is located some distance from Barrhill Village.

- There are insufficient parking spaces at Dumfries Rail Station.

Similar issues were raised during the stakeholder workshops.

> **Key Points:**
>
> There are problems with insufficient parking and a lack of disabled parking at some rail stations, including Barrhill and Lockerbie Railway Stations.

RA4) Rail Fares

Description:

There is a perception amongst the public that rail fares are too high.

Evidence:

Table 5-12 shows the cost of making a return trip from each locality in the study area to Ayr, Dumfries, Edinburgh, and Glasgow by rail (and by car, for illustrative purposes). It should be noted that car costs are based on petrol only[62] and do not include the initial outlay cost of the vehicle, wear and tear, insurance costs, and parking costs. As such the real cost of car travel is higher than that shown.

Overall, based on petrol costs alone, rail travel is more expensive than travel by car from all locations except Gretna to Ayr. While the differential between the cost of the two modes is relatively small in the majority of cases (and therefore rail is likely to be cheaper when the true cost of car travel is considered), there are several origin / destination combinations which are considerably more expensive by rail, including:

- Lockerbie to Dumfries for which there is a difference of £64.00

- Dumfries to Edinburgh for which there is a difference of £134.00

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[61] Source: ScotRail
[62] Petrol costs based on February 2019 average fuel price per mile taken from
https://www.gov.uk/government/publications/advisory-fuel-rates/how-advisory-fuel-rates-are-calculated#petrol

- Annan to Edinburgh for which there is a difference of £132.00

- Gretna to Edinburgh for which there is a difference of £131.00

As noted in Chapter 3, rail fares between Lockerbie and Glasgow / Edinburgh are significantly cheaper than the equivalent journeys from Dumfries, with people travelling on the GSWL paying a higher fare for a longer journey time. Those with access to a car, who can drive to Lockerbie, can therefore benefit from the lower fares from Lockerbie (offset partially by the car fuel cost).

During the consultations conducted as part of the study, several consultees noted that there is a step change in the cost of rail travel to Glasgow when the boundary is crossed between South / East Ayrshire and Dumfries and Galloway, with travel from Dumfries and Galloway significantly more expensive. To examine this, an assessment of the cost of rail travel per km from the stations either side of the local authority boundary was undertaken. This showed that while a single rail ticket to Glasgow from New Cumnock / Auchinleck is between approximately 12-13p per km travelled on the rail network, from Kirkconnel / Sanquhar, the cost is higher at approximately 15-16p per km. Those with access to a car can therefore benefit from cheaper rail fares by driving across the local authority boundary and catching a train in the SPT area.

Table 5-12: Comparison of cost of car and rail travel from the study area to Dumfries, Glasgow, Edinburgh and Ayr[63]

| | Anytime Return | | | | | | | | | | | |
| | Dumfries | | | Glasgow | | | Edinburgh | | | Ayr | | |
From	Car	Rail	Difference	Car	Rail	Difference	Car	Rail	Difference	Car	Rail	Difference
Dumfries				£23.10	£35.90	-£12.80	£23.77	£158.20	-£134.43	£18.15	£29.40	-£11.25
Stranraer	£21.68	£56.10	-£34.42	£26.00	£27.40	-£1.40	£38.66	£71.10	-£32.44	£15.52	£23.20	-£7.68
Annan	£4.74	£8.90	-£4.16	£25.49	£35.90	-£10.41	£26.18	£158.20	-£132.02	£23.07	£37.00	-£13.93
Girvan	£20.23	£45.50	-£25.27	£16.88	£21.40	-£4.52	£28.90	£43.50	-£14.60	£6.31	£9.80	-£3.49
Maybole	£17.76	£39.20	-£21.44	£13.20	£18.00*	-£4.80	£25.22	£39.80	-£14.58	£2.60	£6.10	-£3.50
Lockerbie	£3.78	£67.80	-£64.02	£21.62	£32.00	-£10.38	£22.29	£39.90	-£17.61	£24.22	£52.10	-£27.88
Gretna	£6.98	£14.10	-£7.12	£26.61	£35.90	-£9.29	£27.27	£158.20	-£130.93	£25.31	£24.70	£0.61
New Cumnock	£11.81	£18.90	-£7.09	£12.77	£16.70	-£3.93	£20.39	£39.20	-£18.81	£6.98	£12.90	-£5.92
Sanquhar	£8.49	£10.30	-£1.81	£15.40	£25.00	-£9.60	£17.43	£40.90	-£23.47	£10.18	£13.90	-£3.72
Kirkconnel	£9.51	£14.00	-£4.49	£16.04	£25.00	-£8.96	£18.06	£40.90	-£22.84	£8.55	£13.60	-£5.05
Crosshill	£22.50	£35.30	-£12.80	£0.85	£3.00	-£2.15	£14.47	£28.50*	-£14.03	£10.72	£16.80	-£6.08

[63] Petrol costs based on February 2019 average fuel price per mile taken from https://www.gov.uk/government/publications/advisory-fuel-rates/how-advisory-fuel-rates-are-calculated#petrol

What people told us:

Overall, 44% of respondents to the public survey were either dissatisfied or very dissatisfied with rail fares, with the proportions dissatisfied / very dissatisfied similar across all corridors (see Figure 5-15).
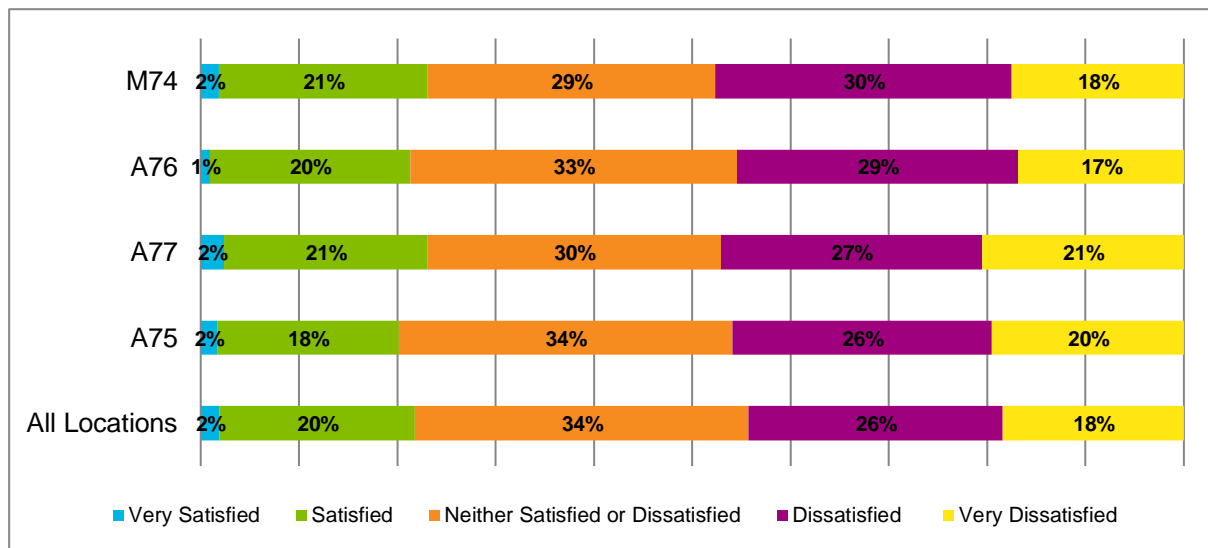
Figure 5-15: Satisfaction with rail fares by corridor[64]

Comments on rail fares were also received in the open-ended survey questions. Of the 1,523 respondents who provided a reason for their dissatisfaction with the rail service in the open-ended responses, 93 noted issues with fares. Key points raised included:

- Rail fares are significantly cheaper to Glasgow and Edinburgh when travelling from Lockerbie, with people travelling on the GSWL paying a higher fare for a longer journey time.

- Rail fares are considerably higher than travel by car which contributes to higher car use.

Key Points:

The cost of rail travel from the study area is high compared to equivalent trips by car, and those who are unable to access Lockerbie Station are unable to benefit from the lower fares (and shorter journey time) to both Edinburgh and Glasgow than the equivalent trips on the Glasgow South West Line.

RA5) Rail Service Frequency

Description:

Rail services in the area are considered to be too infrequent, with large gaps in the timetables. This can mean that users are left waiting for long periods which can add to overall journey times and inconvenience, and potentially contribute to higher car use.

Evidence:

Analysis has been undertaken of the frequency of rail services across the rail corridors in the study area. Table 5-13 compares weekday services between Stranraer-Ayr and Girvan-Ayr, and Table 5-14 compares weekday services between Stranraer-Glasgow and Girvan-Glasgow[65]. It is noted that the frequency of service at Stranraer is the same as Barrhill and the frequency of service at Girvan is the same as at Maybole. Overall, Table 5-13 and Table 5-14 show:

- Services to / from Girvan are more frequent, operating approximately once an hour, whereas services to / from Stranraer operate approximately every two hours;

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[64] Source: Public Survey
[65] Note that services shown in red require the user to change trains, those in blue are direct connections.

- In the northbound direction, the last departure from Stranraer to Glasgow / Ayr is at 21:03 whereas the last departure from Girvan to Ayr is at 23:02 and the last departure from Girvan to Glasgow is 21:57[66]; and

- In the southbound direction, between Ayr and Stranraer and between Glasgow and Stranraer, there are considerable gaps in the timetables between penultimate train and the last train (4 hours and 4 minutes and 3 hours and 43 minutes respectively).

Table 5-15 compares weekday services between Dumfries and Glasgow and weekday services between Lockerbie and Glasgow. As shown:

- Services between Lockerbie and Glasgow are more frequent than services between Dumfries and Glasgow;

- There are significant gaps in the timetable between Dumfries and Glasgow whereas the Lockerbie to Glasgow timetable is more consistent throughout the day; and

- The last direct train from Lockerbie to Glasgow is relatively early (20:10). There is an indirect train at 21:00, however, this has a longer journey time (2hr15m).

Table 5-16 shows weekday services between Lockerbie and Edinburgh. As shown:

- Northbound and southbound services between Lockerbie and Edinburgh operate approximately every two hours. However, in the northbound direction, there is a significant gap in the timetable between 11:37 and 14:31;

- Several of the services are indirect. These have longer journey times (approximately 2hr 20m - 2h 36m) compared to the direct services (1hr 3m - 1hr 7m); and

- The last departure from Lockerbie is at 22:34[67] and the last departure from Edinburgh is at 22:13[68].

Table 5-17 shows weekday services between Dumfries and Carlisle.

- Overall, services between Dumfries and Carlisle are relatively frequent, with services operating approximately hourly, with additional services in the peaks; and

- Services are slightly more frequent in the southbound direction.

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[66] While there is a departure at 23:02, the journey time is long (more than 7 hours) and is therefore unlikely to be a realistic option for many.
[67] While there is a later departure from Lockerbie (23:37), the journey time for this service is more than 7 hours and is therefore unlikely to be a realistic option for many.
[68] While there is a later departure from Edinburgh (23:30), the journey time for this service is more than 6 hours and is therefore unlikely to be a realistic option for many.

Table 5-13: Comparison of weekday services between Ayr and Stranraer / Girvan

Direction of Travel	Origin	Destination	Train Services per weekday day
Northbound	Stranraer	Ayr	
	Girvan	Ayr	
Southbound	Ayr	Stranraer	
	Ayr	Girvan	

Table 5-14: Comparison of weekday services between Glasgow and Stranraer / Girvan

Direction of Travel	Origin	Destination	Train Services per day
Northbound	Stranraer	Glasgow	
	Girvan	Glasgow	
Southbound	Glasgow	Stranraer	
	Glasgow	Girvan	

Table 5-15: Comparison of weekday services between Glasgow and Dumfries / Lockerbie

Direction of Travel	Origin	Destination	Train Services per day
Northbound	Dumfries	Glasgow	
	Lockerbie	Glasgow	
Southbound	Glasgow	Dumfries	
	Glasgow	Lockerbie	

Table 5-16: Weekday services between Lockerbie and Edinburgh

Direction of Travel	Origin	Destination	Train Services per day
Northbound	Lockerbie	Edinburgh	
Southbound	Edinburgh	Lockerbie	

Table 5-17: Weekday services between Dumfries and Carlisle

Direction of Travel	Origin	Destination	Train Services per day
Southbound	Dumfries	Carlisle	
Northbound	Carlisle	Dumfries	

What people told us:

In total, 51% of respondents to the public survey were either dissatisfied or very dissatisfied with the frequency of rail services in the study area, with the level of dissatisfaction slightly higher amongst those living in the A77 corridor (see Figure 5-16).
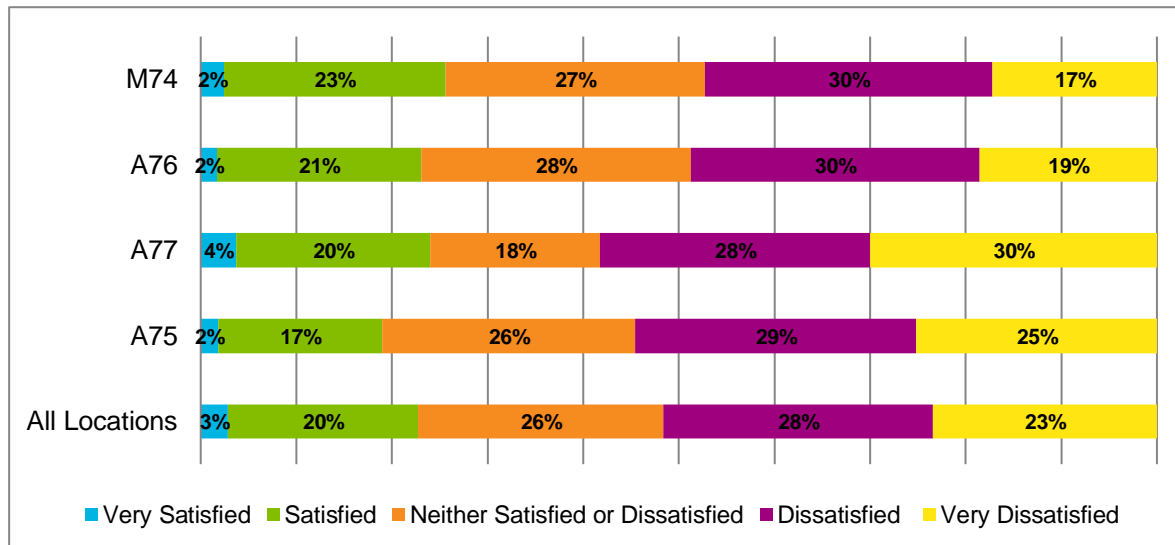
Figure 5-16: Satisfaction with rail service frequency[69]

Train frequency was also identified as a key issue within the open-ended question responses. Of the 1,523 respondents who provided a reason for their dissatisfaction with the rail service in the open-ended responses, 134 noted issues with rail frequency. It was noted that when making the return journey home, it is often necessary to leave earlier or wait around for the return train which adds significantly to overall journey time. Feedback obtained via the stakeholder workshops and Placecheck tool supported these views.

> **Key Points:**
>
> Large gaps in the rail timetable and between direct services on the Glasgow South West Line (for Stranraer) can constrain use of the rail network by those in the study area. There is a more consistent train service between Lockerbie and Glasgow compared to Dumfries and Glasgow during the day meaning those unable to access Lockerbie are disadvantaged.

RA6) Rail Operating Hours

Description:

The operating day for many rail services is considered to be too short, with services starting too late in the morning and finishing too early in the afternoon / evening. This impacts on the ability to access both regular and out of office hours' employment as well as social and leisure opportunities.

Evidence:

Analysis has been undertaken of weekday and weekend rail service information for some of the key origins and destinations across the three rail lines within the study area. Key points from this analysis include:

Glasgow South West Line to Stranraer:

- The last departures from Glasgow and Ayr to Stranraer are at 2213 and 2331 respectively on weekdays and 2230 and 2331 on Saturdays.

- The operating day is shorter on Sunday compared to weekdays and Saturday and there are fewer direct services. For example, when travelling from Stranraer to Glasgow during the week, the first outward journey

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[69] Source: Public Survey

is at 07:00 and the last return is at 22:13. On Sunday, however, the first outward journey is not until 10:41 and the last return is at 17:55.

Glasgow South West Line to Carlisle:

- The last departures from Ayr, Dumfries, and Carlisle to New Cumnock, Kirkconnel and Sanquhar are considerably earlier on Saturday (2027, 2147, and 2109) and Sunday (1945, 1950, and 1912) than during the week (2226, 2151, 2113).

- The last departures from Glasgow to New Cumnock, Kirkconnel and Sanquhar are earlier on Saturday and Sunday (2213 and 2212 respectively) than during the week (2313).

- Services between New Cumnock / Kirkconnel / Sanquhar and Kilmarnock / Glasgow start earlier than services between these locations and Dumfries with the earliest departures north just before 06:00 and the earliest departures south at approximately 08:20 – 08:30. This is likely to restrict opportunities for commuting into Dumfries from these locations.

West Coast Mainline:

- The operating day when travelling from Lockerbie to Glasgow / Edinburgh is much shorter on Saturday compared to weekdays. For example, when travelling to Glasgow during the week, the first outward journey is at 07:11 and the last return is at 22:34. However, on Saturday, the last return is at 18:47. Similarly, when travelling to Edinburgh during the week, the first outward journey is at 07:11 and the last return is at 22:13. However, on Saturday, the last return is at 18:12. The shorter operating day on Saturdays may limit the opportunities to undertake employment and leisure activities in Edinburgh / Glasgow on the weekend due to the need to catch the last train home.

What people told us:

In total, 24% of respondents to the public survey were dissatisfied or very dissatisfied with the time of the first rail service departure and 35% were dissatisfied or very dissatisfied with the last rail arrival. Overall, the level of dissatisfaction with these aspects was slightly higher amongst those living in the A77 corridor.
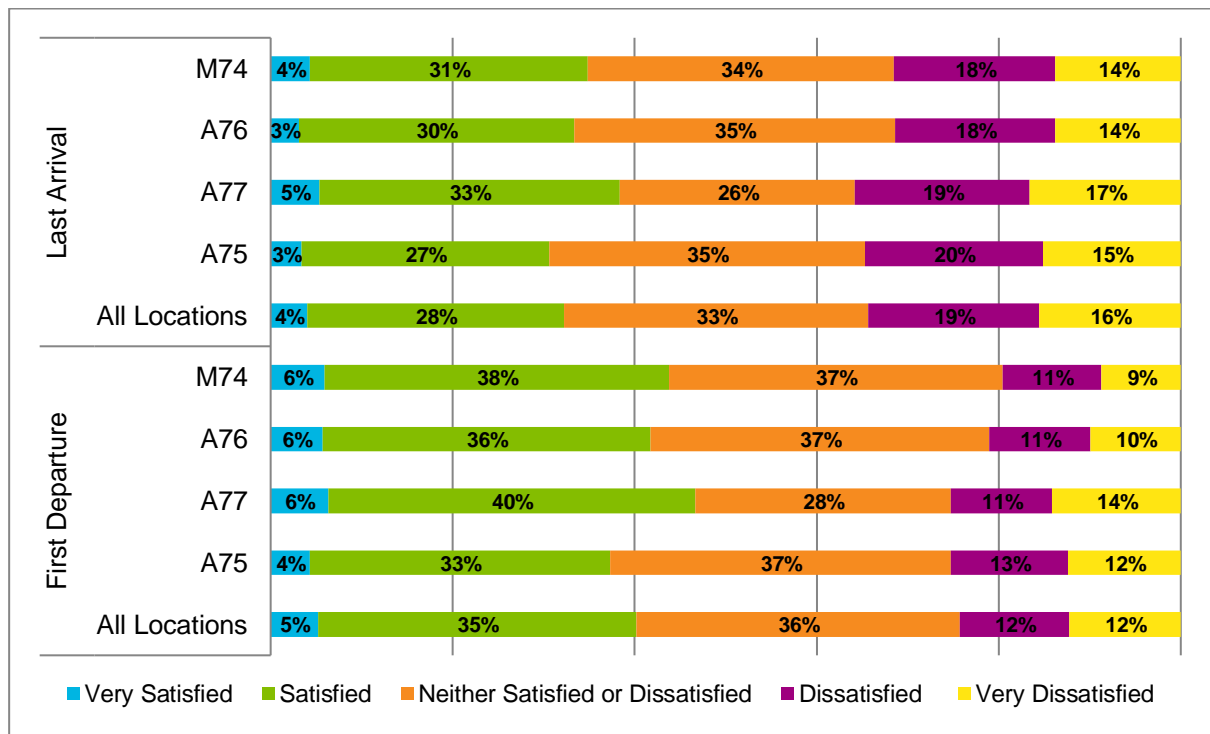
Figure 5-17: Satisfaction with first rail departure and last rail departure by corridor[70]

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[70] Source: Public Survey

Several specific points regarding the first and last departure times of rail services were included in the open-ended survey responses. These included:

- The last train back to Stranraer from Ayr / Glasgow is early and prevents evening-based activities such as going to the cinema, theatre, concerts etc.;

- Services between New Cumnock / Kirkconnel / Sanquhar and Kilmarnock / Glasgow start earlier than services between these locations and Dumfries which benefits commuters;

- The operating day when travelling from Lockerbie to Glasgow / Edinburgh is much shorter on Saturday compared to weekdays;

- The last trains from Edinburgh to Lockerbie and Glasgow to Dumfries are too early and prevent evening-based activities in Edinburgh and Glasgow. For example, it was noted that the return journey from Edinburgh to Lockerbie on a Saturday is just after 6pm which means day trips to the capital are very short; and

- In general, the operating day on Sundays is very short.

Key Points:

Short operating days on the rail network, particularly during the weekends can limit the opportunities for travel for people in the study area. This can impact the ability to access both regular and out of office hours' employment as well as social and leisure opportunities.

RA7) Rail Journey Times

Description:

Journey times to Glasgow on the GSWL are significantly longer than journey times via the WCML.

Evidence:

Table 5-18 shows the fastest journey times from Stranraer, Dumfries, and Lockerbie to Glasgow. Journey times to Glasgow from Lockerbie are between 39-48 minutes quicker than the equivalent journey times from Dumfries. These shorter journey times are considered to add to the attractiveness of Lockerbie which creates pressure on parking at the station as highlighted elsewhere in the analysis.

Table 5-18: Journey Times to Glasgow from Stranraer, Dumfries and Lockerbie

Origin	Journey Time to Glasgow		
	Mon - Fri	Saturday	Sunday
Dumfries	1hr 43m	1hr 44m	1hr 45m
Lockerbie	55m	1hr 05m	1hr 05m
Stranraer[71]	2hr 11m	2hr 11m	2hr 23m

What people told us:

While there was no specific question on rail journey times in the survey, a number of respondents who provided a reason for their dissatisfaction with the rail service noted issues with journey times by rail. Amongst these, the most frequently cited issue was the long journey times to Glasgow via the GSWL, particularly in comparison to the equivalent journeys from Lockerbie. Partly as a consequence of the faster journey times, respondents noted that rather than travelling from Dumfries they drive to Lockerbie for onward travel to the Central Belt. This message also emerged strongly during stakeholder engagement, including the stakeholder workshops.

Key Points:

Journey times to the Central Belt are much slower on the Glasgow South West Line compared to those from Lockerbie on the West Coast Main Line. Those who are unable to access Lockerbie Station are not able to benefit from the much shorter journey times to both Edinburgh and Glasgow, constraining their accessibility.

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[71] Requires interchange at Ayr

5.5 Bus / Rail Network Based Problems

BR1) Public Transport Connectivity

Description:

There is a lack of overall public transport connectivity across the area to enable effective access to employment, education, healthcare, retail and social opportunities and city and town centres.

Evidence:

Analysis has been undertaken to establish the overall level of connectivity by public transport (either by bus, rail or a combination of the two modes) from the main localities in the study area (36 in total) for a range of 'meaningful' journeys; that is journeys to:

- Employment opportunities (between 06:00 and 10:00);

- The key city and town centres of Ayr, Glasgow, Edinburgh and Carlisle (with outward trips between 08:00 – 12:00 and return journeys between 16:00 – 20:00);

- The key destinations for retail, social and leisure opportunities of Ayr, Kilmarnock, Stranraer, Dumfries and Carlisle (with outward trips between 08:00 – 12:00 and return journeys between 16:00 – 20:00 and between 21:00 – 24:00);

- Further and higher education facilities (with outward trips between 06:00 – 09:00 and return journeys between 17:00 – 20:00);

- Health facilities, including access to local accident and emergency centres and the major hospitals at Ayr, Crosshouse and Glasgow (with outward trips between 08:00 – 12:00 and return journeys between 15:00 – 19:00); and

- The Port at Cairnryan (between 08:00 – 16:00).

Car journey times were also used to understand differences between car and public transport access times.

Key information from this analysis is summarised in this section.

In terms of **access to employment**, the analysis highlighted Ayr and Dumfries and the south east of the study area close to the border with England are most well connected to employment by public transport and the areas to the south of the A75 are the most poorly connected. Stranraer, Glenluce and Portpatrick have amongst the lowest differential between public transport and car travel times to employment and Moniaive, Dalmellington and Bellsbank have amongst the highest differentials.

In terms of **access to major cities and towns**, Table 5-19 shows the absolute and percentage of the study area population who can reach each town / city within time bands ranging from 15 minutes to 4 hours, as well the totals for under 1 hour. The data highlights that Carlisle is the most accessible by public transport of the towns / cities assessed, with 17% of the study area population able to reach Carlisle within one hour. This compares to 13% who are able to reach Ayr and 0% for both Glasgow and Edinburgh. This highlights the importance of Carlisle as a key centre for the study area. Overall, Lockerbie provides the fastest journey times from the study are to both Edinburgh and Glasgow owing to the faster journey times on the WCML. It is also possible to travel to Edinburgh and Glasgow from parts of Ayrshire via the GSWL and to Glasgow from the rail stations within the A77 corridor. For large parts of the study area, however, it is not possible to reach Glasgow or Edinburgh in less than 4 hours.

Table 5-19: Absolute and Percentage of Study Area Population who can reach each town / city within each time band

PT Journey Time (mins)	Edinburgh		Glasgow		Ayr		Carlisle	
	Pop.	**% Pop.**	**Pop.**	**% Pop.**	**Pop.**	**% Pop.**	**Pop.**	**% Pop.**
15-30	0	0%	0	0%	8,512	5%	2,517	1%
31-45	0	0%	0	0%	6,338	3%	12,078	7%
46-60	0	0%	0	0%	9,716	5%	17,169	9%
61-120	6,823	4%	39,977	22%	16,900	9%	72,193	40%
121-150	34,293	19%	69,408	38%	15,955	9%	11,492	6%
151-180	55,485	30%	13,532	7%	63,678	35%	10,612	6%
181–210	28,753	16%	3,343	2%	24,226	13%	12,503	7%
211-240	3,850	2%	3,779	2%	2,633	1%	2,734	1%
Under 1 hour	0	0%	0	0%	24,566	13%	31,764	17%
Total	**129,204**	**71%**	**130,039**	**71%**	**147,958**	**81%**	**141,298**	**77%**

In terms of **access to social and retail facilities**, Table 5-20 shows a summary of the overall accessibility to retail, leisure and social opportunities from the 36 main localities in the study area to the five key towns of Ayr, Kilmarnock, Stranraer, Dumfries and Carlisle. The analysis highlights that connectivity between the key towns in the study area and the localities can be particularly problematic after 21:00. The more limited connectivity to some localities during the evening is likely to limit the potential for residents to undertake evening-based leisure and social opportunities and may also restrict opportunities for extended day trips due to the need to catch the last bus / train home. Localities on or in close proximity to the rail network generally have better access to / from the key towns. Across the study area as a whole, the least well-connected localities include Whithorn, Wigtown, Creetown, Kirkcudbright, Gatehouse of Fleet, Moniaive and Moffat.

Table 5-20: Summary of outputs from the retail, leisure and social opportunities connectivity analysis

			Number (proportion) of journeys which can be made…		
Number of Localities	**Number of key towns**	**Journeys Assessed**	**from the localities to the key towns (departing between 08:00 and 12:00)**	**from key towns to localities (departing between 16:00 and 20:00)**	**from key towns to localities (departing between 21:00 and 24:00)**
36	5	180	151 (84%)	143 (79%)	63 (35%)

In terms of **access to education**, an assessment was made of access times to a number of further and higher education sites both in the study area, as well as the universities in Glasgow[72].

The analysis highlighted that there are several localities within the south of the study area from which it is not possible to access further or higher education facilities by public transport, including Creetown, Gatehouse of Fleet, Kirkcudbright and Whithorn. Beyond these areas, it is generally possible to access both further and higher education facilities by public transport. However, journey times can often be long. The limited access to education facilities in

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[72] 12 Further and Higher education sites were assessed as part of the public transport connectivity analysis, including: Ayrshire College Kilmarnock Campus; Glasgow Caledonian University; University of Glasgow; University of Strathclyde; SRUC Barony College; Dumfries and Galloway College Dumfries; Ayrshire College Ayr Campus; University of West of Scotland Ayr Campus and SRUC Ayr Campus; University of West of Scotland Dumfries Campus; Dumfries and Galloway College Stranraer; Ayrshire College Kilwinning; and Irvine Royal Academy.

some areas within the study area may impact upon educational attainment levels in these locations and contribute to higher car use and / or forced car ownership. It may also make it difficult to retain young people in the area and place a financial burden on families to provide accommodation nearer education.

The public transport journey time calculations to understand **access to healthcare facilities** focused on assessing journey times between each locality and the nearest general hospital (Dumfries, Ayr, Kilmarnock and/or Carlisle); Glasgow Queen Elizabeth University Hospital (QEUH); and the nearest local community hospital.

The analysis highlighted that it is not possible to make a return journey by public transport to the nearest general hospital from Portpatrick or Whithorn in the south west of the study area during the time period assessed. Journey times to the nearest general hospital are also long from Wigtown, Stranraer, Glenluce and Newton Stewart in the south as well as Ecclefechan and Eaglesfield. There are several localities within the study area from which it is not possible to make a return journey by public transport to Glasgow QEUH Hospital. These are generally concentrated in the south of the study area. Figure 5-18 highlights the localities from which the journey time to the nearest general hospital is greater than an hour. The limited access to health facilities in some areas within the study area may impact upon health outcomes and contribute to higher NHS costs, higher car use and / or forced car ownership.
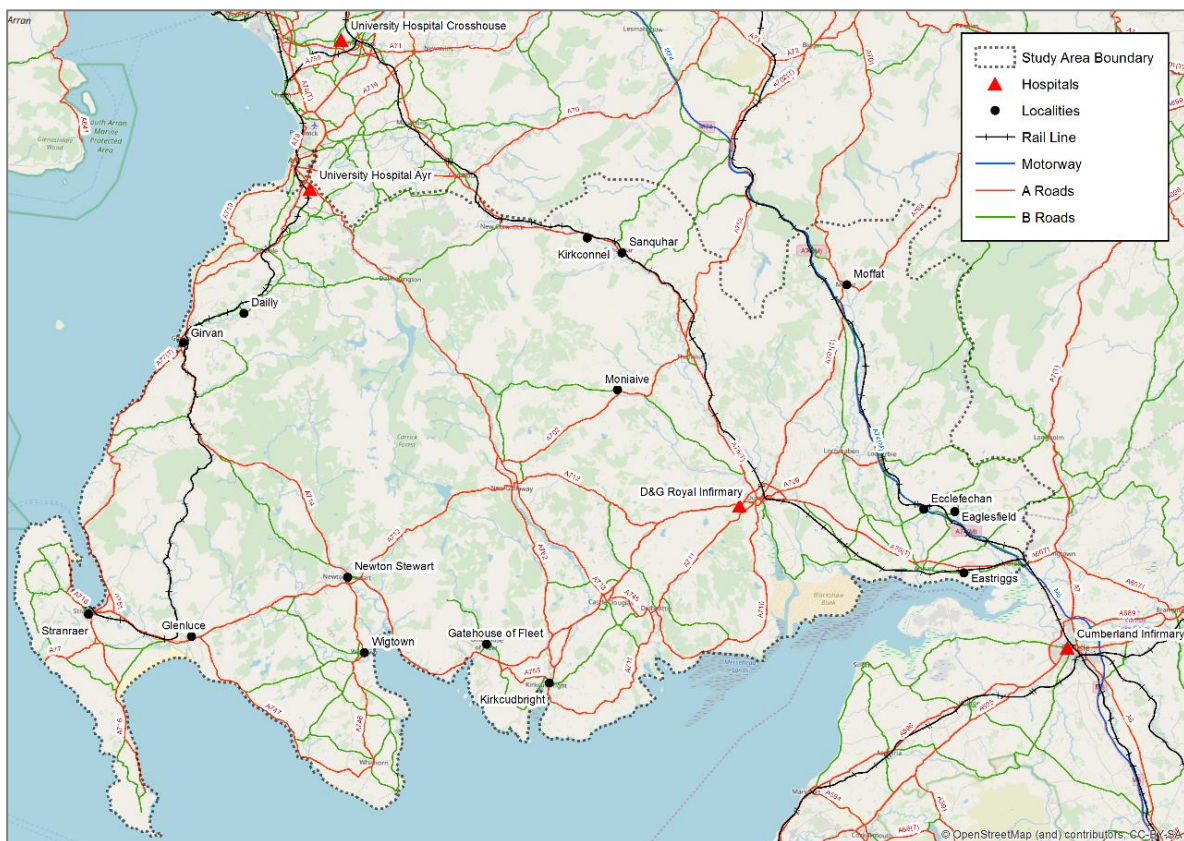
Figure 5-18: Localities for which the public transport journey to or from the nearest general hospital is greater than 1 hour

In terms of public transport access to the ports at Cairnryan, Figure 5-19 shows public transport journey times from locations across Scotland to the ports. The results show the quickest public transport journey time within a 08:00 – 16:00 timeframe. There is a clear east-west divide within the study area with respect to public transport journey times to the ports, with the A77 corridor benefiting from much quicker journey times than the south east. This is predominantly due to the presence of the GSWL to Stranraer and the lack of rail connections along the A75 corridor between Dumfries and Stranraer.
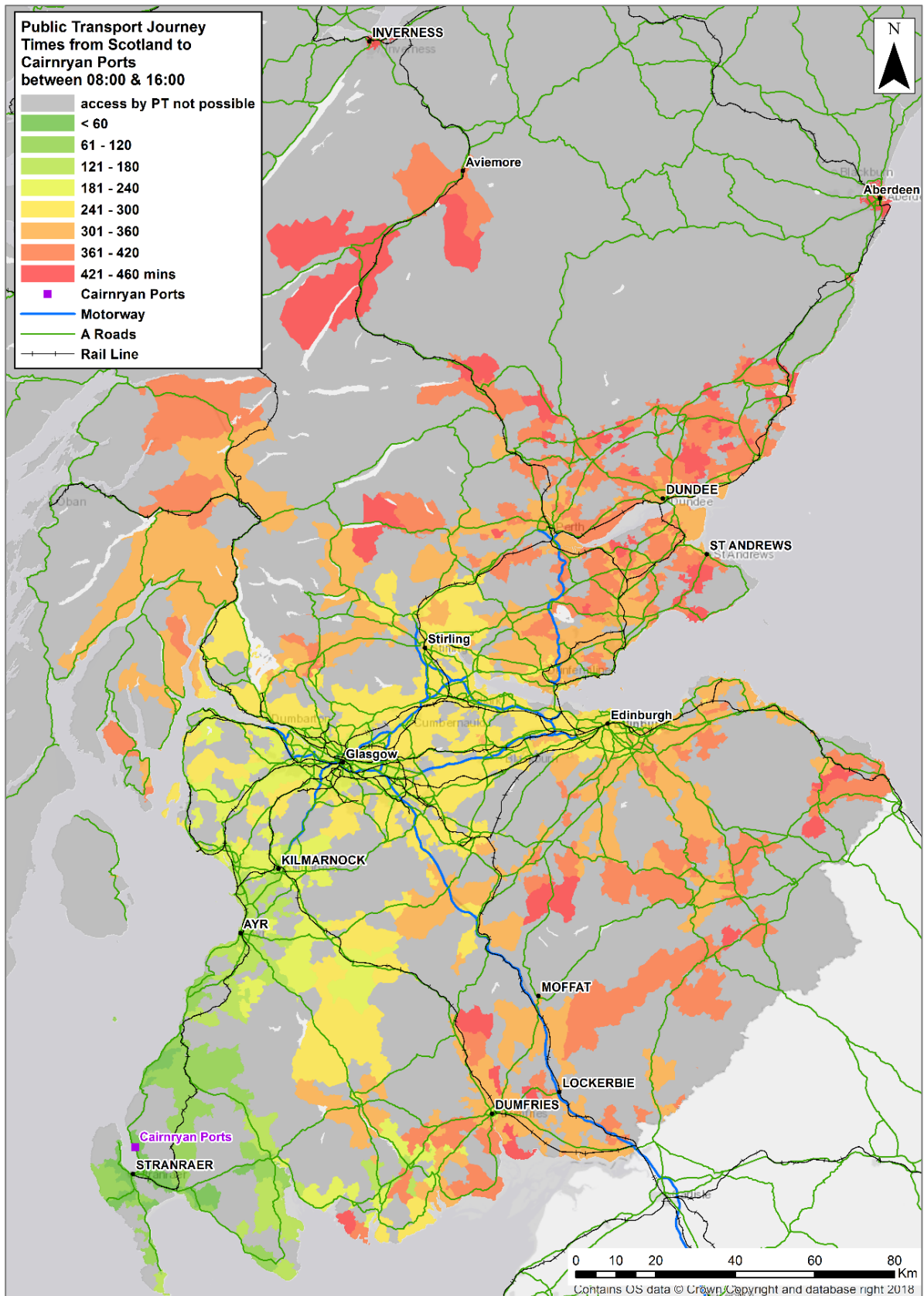
Figure 5-19: Public Transport Journey Times from Scotland to Cairnryan Ports

What people told us:

During the engagement programme, the overall accessibility of the region to employment, education, healthcare, retail and social opportunities was a common theme. The frequency of bus services, the journey time by bus, the

limited and difficult accessibility of the rail network, the gaps in rail timetables and difficulty in interchanging between bus and rail, all combine to make connectivity difficult by public transport.

Key Points:

Public transport coverage across the area varies greatly by location. The more rural areas are less well connected and have significantly reduced access to employment opportunities, healthcare and further and higher education. This is likely to be impacting on feelings of community isolation and the ability of these areas to retain young economically active people within their communities, as well as placing a financial burden on families to enable children to take up further and higher education opportunities. With an ageing population, the ability to access healthcare is becoming increasingly important and limited access to healthcare from rural locations will place a financial burden on the health service and the communities themselves to ensure suitable access.

5.6 Road Network Based Problems

RD1) Road Standard and Usage

Description:

There are a range of issues about the road network which impact upon network performance and hence how people perceive the network in the South West of Scotland. These include:

- The mix of local and strategic traffic, high proportions of HGVs, and platooning (or convoys) of vehicles;

- Limited overtaking opportunities due to single-carriageway roads and poor sightlines, road alignment and geometry; and

- A high number of unprotected right-hand turns.

Each of these issues combine to impact upon journey times, reliability and safety on the road network.

Evidence:

As detailed in the baseline traffic review, the RSI data indicates that the A75 and A77 carry the highest proportion of HGVs of all strategic roads within the study area. The strategic importance of these routes for freight is also supported by the results from the SGVC observations and valuations which estimated that approximately £26 million worth of goods per day use the A75 East of Dumfries, £20 million on the A75 West of Dumfries with approximately £10 million moving on the A77 south of Ayr.

To assess vehicle platooning and determine the extent to which high levels of HGVs contribute to platooning levels, 2015 ATC data recorded at several count sites across the study area was interrogated and the headway (the time between vehicles) and vehicle class assessed. Any vehicles travelling three or less seconds behind another vehicle were regarded as part of a platoon.

Across the study area as a whole, the largest proportion of platoons (45%) was formed of two vehicles only. However, a significant proportion (24%) were formed by five or more vehicles, with the A701 at St Ann's (NB), A75 Castle Douglas (WB) and A77 South of Turnberry (SB) showing the highest proportion of 5+ platoons (33%, 28% and 27% respectively).

Overall, the maximum platoon size identified was at the A75 Castle Douglas (Westbound; 38 vehicles) and A77 South of Turnberry and Cairnryan (Southbound; 25 vehicles).

Figure 5-20 shows the proportion of platoons lead by slower moving vehicles (HGVs, LGVs and buses/coaches) for different platoon sizes. Whilst overall, platoons tend to be led by light vehicles, a consistently higher proportion of HGVs lead the longer platoons of 3 or more and 5 or more vehicles.
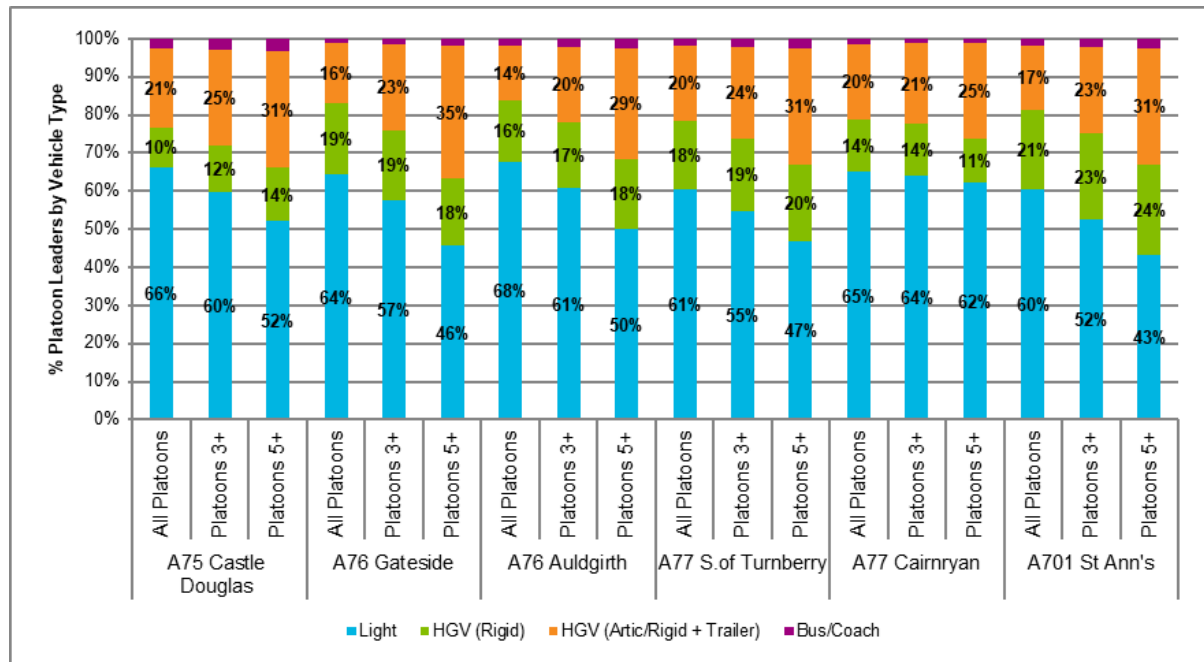
Figure 5-20: Proportion of platoon leaders by vehicle type

To assess average speeds on the strategic road network and compare these against other key corridors in Scotland, an analysis of journey time data was undertaken. This examined typical journey times and speeds along several key strategic corridors in Scotland during the interpeak period. Table 5-21 presents the outputs of this analysis. As shown, the A77 between Ayr and Cairnryan has the lowest overall speeds (38mph) of all the routes assessed. The speed on the A75 is higher (45mph) but is still well below some of the other strategic routes, including the A9 between Perth and Inverness and the A90 between Perth and Aberdeen. As well as the issues highlighted above, the lower average speeds on the A77 is likely to also be a result of the speed-limited settlements which the route passes through. This is discussed further below.

Table 5-21: Typical journey times and speeds along key strategic road corridors in Scotland[73]

Corridor	Origin	Destination	Journey Time (minutes)	Distance (miles)	Speed (mph)
A77	Ayr	Cairnryan	69	43	37.7
A96	Aberdeen	Inverness	142	99	41.8
A82	Glasgow	Fort William	148	109	44.2
A68	Edinburgh	Consett	135	100	44.3
A75	Gretna	Cairnryan	124	93	44.9
A9	Inverness	Thurso	145	109	45.1
A9	Perth	Inverness	126	109	51.9
A90	Perth	Aberdeen	95	82	51.9
A74(M)	Glasgow	Carlisle	91	86	56.4

To assess the level of accidents on the A75, the number of Personal Injury Accidents (PIA) as recorded via the STATS19 dataset over the period 2012-2016 was compared with national accident and casualty rates for each strategic route in the study area. The latter were developed using the methodology set out in the NESA manual (DMRB vol.15)[74] and are based on the different road categories, speed limit and vehicle kilometres (Vkm) travelled on each section of the route.

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[73] Here Journey Time Data
[74] http://www.sias.com/2013/TS/The%20NESA%20Manual%20-%20October%202015.pdf

Table 5-22: Observed and NESA Accident Rates

	Accident Rate (M Vkm)	% Accident by Severity			Casualty by Severity per Accident		
		% Fatal	% Serious	% Slight	Fatal	Serious	Slight
A75	0.101	5.4%	15.3%	79.3%	0.054	0.222	1.202
NESA	0.253	2.6%	14.4%	83.0%	0.036	0.211	1.356
A77	0.125	3.8%	14.1%	82.1%	0.043	0.190	1.207
NESA	0.304	2.3%	13.8%	83.9%	0.032	0.197	1.342
A76	0.165	5.3%	20.2%	74.5%	0.053	0.234	1.117
NESA	0.305	2.4%	14.1%	83.5%	0.034	0.205	1.342
A701	0.212	6.3%	29.2%	64.6%	0.063	0.354	1.125
NESA	0.696	2.5%	14.3%	83.2%	0.035	0.209	1.344

Overall, while there is a perception that there are a high number of accidents on the strategic roads within the study area, the observed accident rates are lower than the equivalent national rate based on NESA. However, while the overall number of accidents is lower than the national rate, the proportion of killed or seriously injured (KSI) accidents is higher than the equivalent national values across all routes. This suggests that there is a greater risk of more serious accidents.

Figure 5-21 shows the change in the number of PIAs between 2012 and 2016. While the number of accidents has reduced, the number of Fatal PIAs has increased over the five-year period, from 9 in 2012 to 15 in 2016, albeit this has varied year by year.

Figure 5-21: Change in the number of Personal Injury Accidents by severity between 2012 and 2016

An analysis of the location of accidents in the study area was also undertaken to assist in identifying / evidencing accident hotspots. As shown in Figure 5-22, there is a wide geographic spread of accidents across the study area. Overall, the largest proportion of accidents (56%) are recorded on the A-road network, reflecting the dominance of A-class roads for travel in the region. While there is a clustering of accidents at the A75 / A751 junction, there does not appear to be a high concentration of severe accidents at this point.
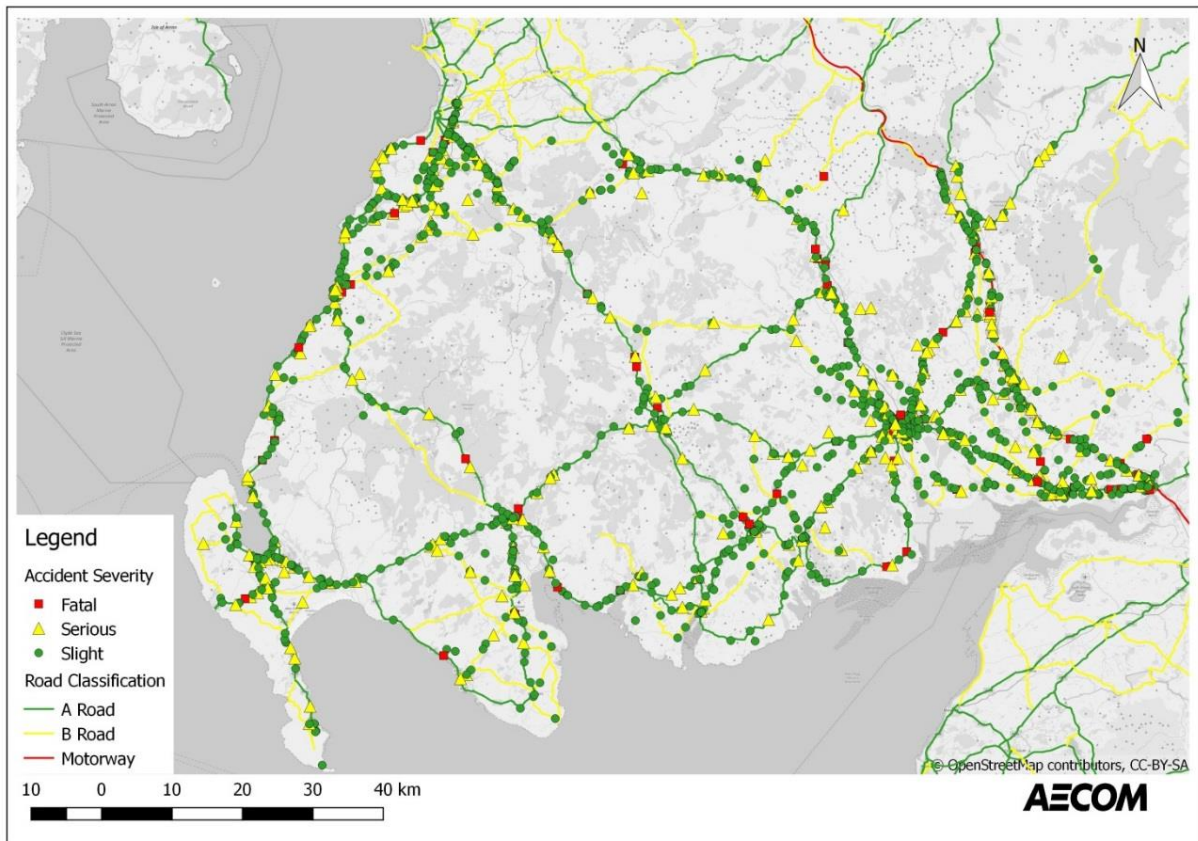
Figure 5-22: Location and Severity of personal injury accidents in the study area (2012-2016)

What people told us:

The high number of HGVs was identified as a key issue by consultees. It was noted that the HGV speed limit of 40mph on single carriageway roads, coupled with limited overtaking opportunities, means platoons of vehicles are often created. The issue was identified as particularly problematic on the A75 and A77 due to port-related traffic, with the problem most acute in the eastbound direction on the A75 and in the northbound direction on the A77 due to HGVs being released in waves when the ferries disembark. While apparent in the reverse direction, the issue was felt to be less acute due to the more dispersed pattern of traffic arriving at the port.

For the A75 in particular, stakeholder consultation highlighted the view that as the road forms part of the Trans European Network (E18), it should be upgraded. Specifically, it was noted that many hauliers, often carrying high value, time sensitive goods, will have travelled on high quality motorways across the UK and Continental Europe as part of their route to the ports at Cairnryan. Views were expressed that some hauliers may therefore not be used to, or expect, to drive along a route like the A75 given its variable speed limits and need to travel through villages, and traffic composition, often including slow moving agriculture vehicles. This in itself presents safety concerns with many drivers not making sufficient allowances for these factors.

Consultees noted that the presence of platoons leads to lower speeds and driver frustration which can consequently lead to risky overtaking manoeuvres and potential accidents. In addition, it was noted that platoons of HGVs can be intimidating for drivers on the opposing carriageway, particularly in periods of adverse weather conditions and at night.

In terms of road geometry, several specific stretches of the trunk road network were identified as particularly problematic. These include the:

• **A75:** between Gatehouse of Fleet and Shennanton (west of Newton Stewart) where the road is winding.

• **A77:** between Ballantrae and Cairnryan, Glenapp where the road is both steep and winding.

• **A76:** was felt to be unsuitable for the volume of HGVs that travel along it. The lack of resilience of the road between New Cumnock and Kirkconnel was highlighted.

- **A701:** There is a narrowing of the road to cross the bridge over Kinnel Water at St. Ann's and subsequent single lane running with traffic signals.

- **A709:** In the centre of Lochmaben the A709 turns a 90-degree bend, the speed limit is 60mph and there are a series of bends.

The junction of the A75/A751 where traffic routes from the A75 to the A77 and bypasses Stranraer, was specifically identified as an accident 'hotspot' by a number of consultees.

Key Points:

Traffic platoons can form, particularly on the A75 and A77 due to the high volume of HGV traffic on the roads often leaving and arriving at the ports at Cairnryan at similar times in line with ferry arrivals and departures, limiting overtaking opportunities on these routes. The single carriageway nature of the roads, along with poor sight lines and road alignment further add to the inability of traffic to perform overtaking manoeuvres. This leads to a slower overall road speed, driver frustration and, as shown in the accident data, a higher propensity for severe accidents.

RD2) Route Consistency

Description:

Several of the strategic routes in the study area pass through villages and see a reduction in speed limit as follows:

- **A75:** routes through the villages of Springholm and Crocketford to the south-west of Dumfries where the speed limit reduces to 30mph.

- **A77:** routes through eight villages / towns south of Ayr, namely Minishant, Maybole, Kirkoswald, Turnberry, Girvan, Lendalfoot, Ballantrae and Cairnryan, where the speed limit reduces to 30 or 40mph.

- **A76:** routes through several villages, including Thornhill, Sanquhar, and Kirkconnel where the speed limit reduces to 30mph.

- **A709:** routes through the village of Lochmaben where the speed limit reduces to 30mph.

The lower speed limit on these sections contributes to slower journey times when making strategic trips on the road network. For village residents, this creates noise, vibration, pollution, and severance impacts as well as safety concerns.

Evidence:

As noted under RD1 above, average speeds on the A77 are considerably lower than speeds on other trunk roads in Scotland and speeds on the A75 are lower than several other Scottish trunk roads. This is likely to be a result of a combination of factors, including that the routes pass through several villages (particularly on the A77), high levels of HGV traffic, a lack of overtaking opportunities, and vehicle platooning.

Table 5-23 presents a summary of the average journey times and average speeds on each of the strategic corridors in the AM peak, interpeak and PM peak periods.

Table 5-23: Average Journey Times and Speeds in the study area during 2017[75]

Corridor	Distance (miles)	Route	Average Journey Time			Average Speed (mph)		
			0800-0900	1000-1600	1700-1800	0800-0900	1000-1600	1700-1800
Gretna to Stranraer (A75)	95.4	EB	02:01	02:02	01:57	47	47	49
		WB	02:03	02:02	01:56	46	47	49
Dumfries to Cumnock (A76)	42.2	NB	01:04	01:03	01:01	39	40	42
		SB	01:04	01:05	01:02	39	39	40
South of Ayr to Stranraer (A77)	51.2	NB	01:20	01:19	01:17	38	39	40
		SB	01:19	01:20	01:17	38	38	40

[75] Source: INRIX Journey Time Data Note that the first five corridors are based on average values from all months in 2017, whilst the bottom four corridors (i.e. to the ports at Cairnryan) are based on August 2017 data only.

Dumfries to Moffat (A701)	19.6	NB	00:29	00:28	00:28	40	41	42
		SB	00:29	00:28	00:27	40	41	42
Dumfries to Lockerbie (A709)	10.5	EB	00:18	00:18	00:17	35	35	36
		WB	00:17	00:17	00:17	35	35	37
Ayr A77/B743 to P&O Port	46.3	NB	01:07	01:10	01:09	41	40	40
		SB	01:08	01:10	01:07	41	40	41
Ayr A77/B743 to Stena Port	44.8	NB	01:05	01:07	01:04	41	40	42
		SB	01:04	01:07	01:06	42	40	41
Dumfries A75/A780 to P&O Port	72.2	EB	01:27	01:28	01:23	49	49	52
		WB	01:28	01:28	01:26	49	49	50
Dumfries A75/A80 to Stena Port	73.7	EB	01:30	01:31	01:26	49	48	51
		WB	01:31	01:31	01:29	48	48	49

The data shows that journey times across the study area are relatively consistent throughout the day. Although there is some evidence of greater journey time variability within built-up areas, for example in Girvan as a result of vehicles stopping at pedestrian crossings and traffic lights, on the whole, Table 5-23 suggests that journey time variability is not a major issue on the strategic corridors in the study area. That said, journey times can vary significantly when an unplanned incident occurs on the network, as discussed further under RD4.

What people told us:

While there was no specific question in the survey on strategic roads passing through villages, people who gave reasons for their dissatisfaction with the road network in the open-ended responses noted this issue, with the majority of these highlighting problems with the A75 routing through Springholm and Crocketford and smaller numbers noting problems with the A709 routing through Lochmaben.

Figure 5-23 shows the extent to which respondents to the survey from each corridor stated they were affected by traffic noise, vibration, pollution and severance issues where they live. Overall, 18% were impacted by traffic noise, 11% by traffic vibration, 8% by traffic pollution, and 1% by severance, with the results varying by corridor.
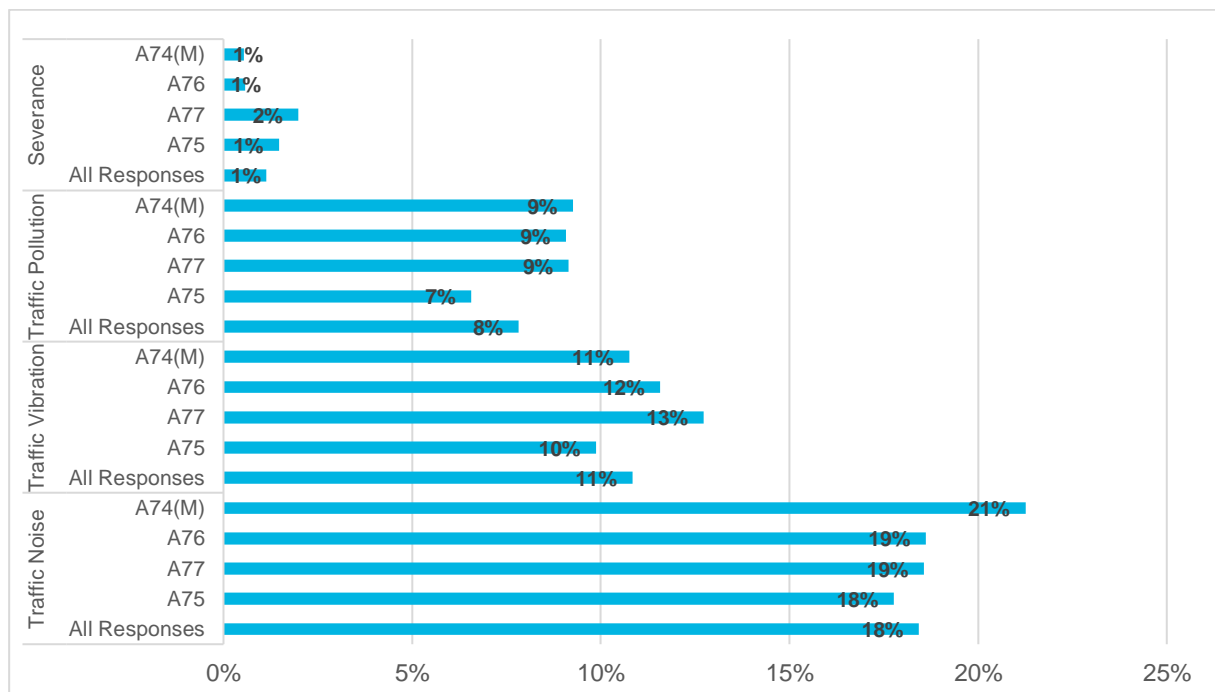
Figure 5-23: Proportion of respondents affected by traffic noise, vibration, and pollution by corridor[76]

Issues with traffic noise were also identified within the open-ended survey responses, with respondents noting:

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[76] Source: Public Survey. Proportions are based on total responses to this question from respondents based in each corridor as follows: A74(M) (734), A76 (881), A77 (754), and A75 (1,964).

- Issues with traffic noise during the evening due to HGVs travelling through villages / towns;

- Timber lorries cause high levels of noise pollution which is amplified by uneven road surfaces;

- Vehicles not obeying the speed limits in towns and villages which contributes to noise pollution and safety concerns; and

- Problems in specific locations, including Springholm and Crocketford on the A75; Girvan on the A77; Thornhill on the A76, and Lochmaben on the A709.

Key Points:

Each of the trunk roads in the area as well as the A709 linking Dumfries to Lockerbie route directly through town and village centres. Specifically, the A75 routes through two villages to the west of Dumfries, with the A77 between Ayr and Stranraer routeing through eight villages / towns. When passing through these communities, the speed limit on the trunk routes is reduced to 30 or 40mph. As well as causing driver frustration at the lower speed, the traffic through these communities causes local disruption in the form of noise, vibration, air quality and safety impacts.

RD3) Road Maintenance

Description:

There is a perception that road condition is poor within the study area which can have implications for safety and can contribute to longer / unreliable journey times.

Evidence:

Results from the 2017-18 Scottish Road Maintenance Condition Survey (SRMCS), which indicates the percentage of the road network for which some kind of maintenance may be required[77], are presented in Figure 5-24.
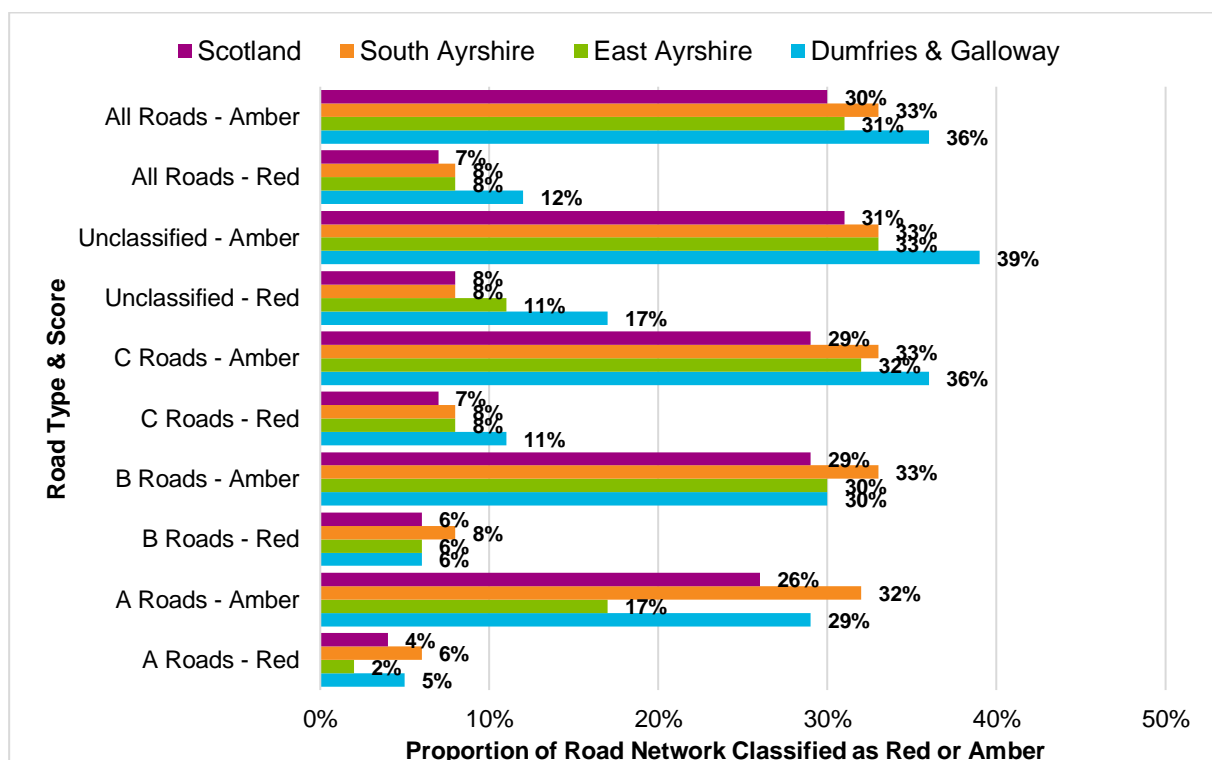
Figure 5-24: Scottish Road Maintenance Condition Survey Indices for the Study Area[78]

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[77] https://www.transport.gov.scot/media/44025/scottish-transport-statistics-no-37-2018-edition.pdf
[78] Source: Scottish Transport Statistics, No 37, 2018 Edition

As shown in Figure 5-24, a higher proportion of 'all roads' in each of the Local Authority areas is rated as Red or Amber[79] i.e. likely to require investigation, compared to the national figures, which may support the perception of limited roads maintenance in the region. It can further be seen that there is variability in the percentage of A Roads rated Red or Amber in these Local Authority areas, with figures higher and lower than the national level. It should be noted that 8% of Scotland's overall road network is within the Dumfries and Galloway Council area[80], while SCOTS also highlight the importance of considering a number of factors in analysing the SRMCS results[81].

What people told us:

Before setting out the findings from public consultation on the issue of roads maintenance, it should be noted that there is a distinction to be made between planned closures associated with maintenance works, and incidents which result in unplanned closures. With regards to planned roadworks, Traffic Scotland's website provides details of planned works on all trunk roads in Scotland in advance which are readily accessible to the public. A number of concerns highlighted during engagement related to maintenance works associated with unplanned incidents on the network and the subsequent impact of route closures on network resilience - further details on this aspect of road quality are discussed separately under Problem RD4: Diversionary Routes.

While there was not a specific question on road maintenance within the online Public Survey, respondents were asked to state how satisfied they were with the quality of road surfaces. Overall, 82% of respondents were either dissatisfied or very dissatisfied with this aspect. This level of dissatisfaction was higher than all other aspects of the road network included in the question (road safety, journey time reliability, overtaking, congestion, journey times, and diversions). As shown in Figure 5-25, dissatisfaction with surface quality was highest amongst those along the A77 and A75 corridors (with 93% and 86% of respondents respectively dissatisfied or very dissatisfied).
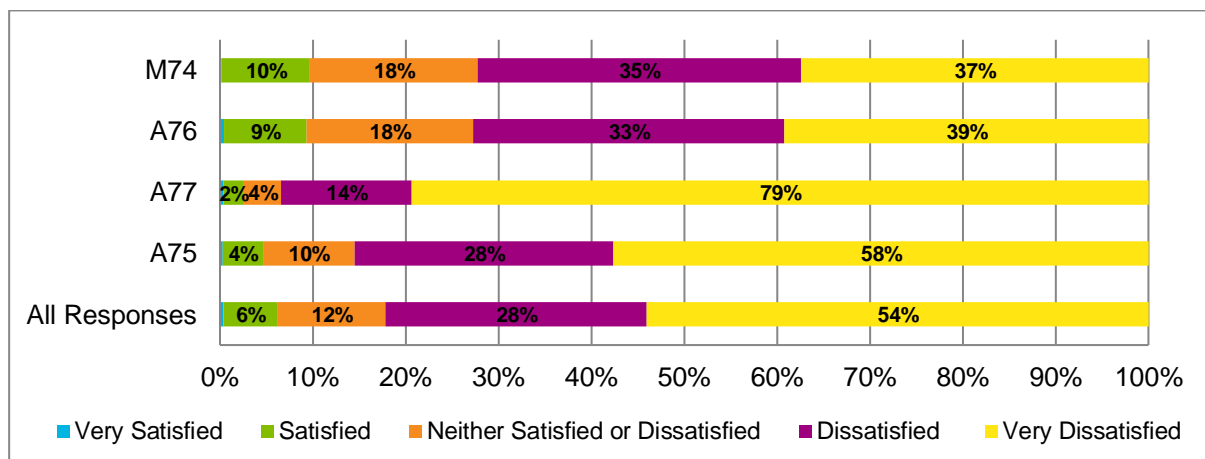
Figure 5-25: Satisfaction with quality of road surface by road corridor[82]

Respondents to the survey were also asked to select their top three priorities for investment in the study area. In total, 23% of respondents selected road maintenance as their top priority. The proportion selecting road maintenance was similar irrespective of which corridor respondents lived.

Poor road maintenance was also raised as a key issue during the stakeholder events at which the following key issues noted:

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[79] "Green" = lengths where the carriageway is generally in a good state of repair (low RCI values). "Amber" = lengths where some deterioration is apparent which should be investigated to determine the optimum time for planned maintenance treatment (mid-range RCI values). "RED" = lengths in poor overall condition which are likely to require planned maintenance soon (i.e. within a year or so) on a "worst first" basis (high RCI values). Red lengths have an RCI score of 100 or over. http://www.ukroadsliaisongroup.org/en/asset-condition/road-condition-information/data-collection/scanner/SCANNER-Road-Condition-Index.cfmt
[80] Scottish Transport Statistics, No 37, 2018 Edition
[81] SCOTS state that when examining the results for individual local authorities, it is important to acknowledge that local road networks vary in character, carry different volumes of traffic and serve widely disparate communities. In SCOTS' view, authorities should not be judged on the absolute values of their amber or red proportions in any given year, but on their performance to improve the condition of their road networks'.
[82] Source: Public Survey

- Poor road maintenance has resulted in poor road surfaces and high numbers of potholes which can cause damage to vehicles and deter cyclists.

- Overgrown vegetation can restrict sightlines and contribute to accidents on key routes.

- Maintenance works can often be poorly planned, with roadworks occurring in several places on the network at the same time.

- There is insufficient information available regarding roadworks and planned maintenance events which makes planning ahead difficult. It was noted, for example, that there were problems with communication between those carrying out works and the public transport services reliant on the route.

- The A77 is prone to coastal erosion, landslips, and flooding and the A76 is prone to landslides all of which lead to frequent road closures. There were also concerns that the frequency of landslips on the A77 could increase in the future as a result of the removal of trees, particularly close to Glenapp.

- Limited availability of budgets to repair landslides across the study area results in roads being left in a damaged state for extended periods of time.

It was noted that there are several areas along the A75 where overgrown vegetation restricts sightlines and that potholes are a particular problem along both the A75 and the A77 with the section of the A77 near Glenapp highlighted as a particular area of concern.

Key Points:

In comparison to the Scottish average, a higher proportion of roads in the study area either have some deterioration and require investigation or are in poor overall condition and require planned maintenance soon. During the consultation, concerns were expressed about the quality of road maintenance on the trunk roads throughout the study area and it was highlighted that poorly maintained roads result in damage to vehicles and accidents.

RD4) Diversionary Routes

There are limited alternative routes when an incident or planned route maintenance occurs on trunk roads in the study area. When a diversionary route is required, the alternative route is often a poorer quality road which routes through small villages and can significantly increase journey distance and journey time. Key impacts of diversionary routes include:

- Increased costs for motorists through higher fuel use and additional wear and tear to vehicles;

- Higher maintenance costs for local authorities due to large volumes of traffic including HGVs using unsuitable local roads;

- Noise, vibration, emissions, and safety impacts for local residents;

- Issues for local people in accessing healthcare appointments, education and employment;

- Difficulties for emergency vehicles reaching those in need and transporting patients to hospital if required;

- Higher business costs due to missed ferry departures and/r the need to programme in additional driver breaks/earlier departures;

- Timetable and service reliability issues for bus operators which reduces connectivity for local people and impacts operators through increased fuel use, lost patronage, and poor perceptions of public transport;

- A risk of 'loss of faith' in accessibility to the ports with users shifting to alternative ports where the risk of unanticipated delay and business impact, is much lower; and

- Increased carbon emissions due to longer journeys.

Evidence:

Data on the frequency of incidents resulting in diversions is limited, but by their nature, incidents are infrequent. To assess the impact of diversionary routes, a review of diversionary routes obtained via Scotland Transerv for selected closures on the A75, A76 and A77 was undertaken. Routes considered included the A75 between Cardoness Castle and Calgow (Newton Stewart), the A77 between Girvan and Innermessan and the A76 between Carronbridge and Mennock. These are shown in Figure 5-26 to Figure 5-28.
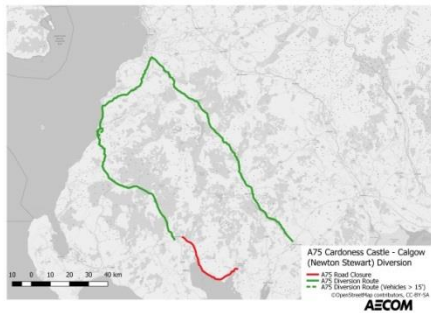
Figure 5-26: A75 Diversionary Route
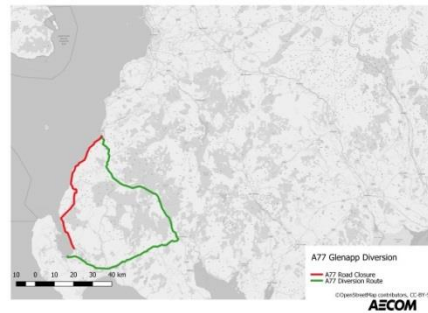
Figure 5-27: A77 Diversionary Route
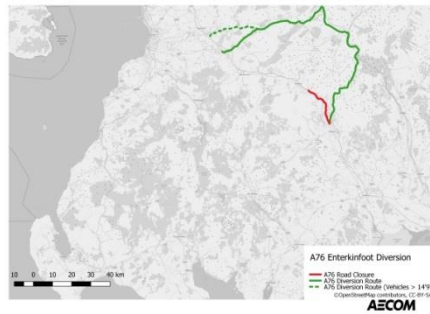
Figure 5-28: A76 Diversionary Route

As shown in Table 5-24 each diversionary route leads to considerable increases in journey distance and time, with the A75 diversionary route increasing the journey time by around 2 hours 20 minutes, the A77 diversionary route increasing the journey time by around 35 minutes and the A76 diversionary route increasing the journey time by around 1 hour 36 minutes.

Table 5-24: Impact of diversionary routes on journey distance and journey time

Start Point	End Point	Journey Distance Impact (miles)			Journey Time Impact (mins)		
		Existing Route	Diversion Route	Difference	Existing Route	Diversion Route	Difference
A75 Cardoness Castle	A75 Calgow (Newton Stewart)	15.5 miles	111 miles[83]	95.5 miles	20m	2hr 40m	2hr 20m
A77 Girvan	Innermessan	26 miles	52 miles[84]	26 miles	40m	1hr 15m	35m
A76 Carronbridge	Mennock	8.2 miles	72 miles[85]	63.8 miles	14m	1hr 50m	1hr 36m

What people told us:

A large number of consultees identified long diversionary routes as a problem within the study area. Overall, 55% of survey respondents were either dissatisfied or very dissatisfied with diversionary routes, with dissatisfaction highest amongst those living in the A77 and A75 corridors (81% and 58% respectively – see Figure 5-29).

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[83] Figure based on the length of the diversion route shown in Figure 5-26, plus the distance between Castle Douglas and Gatehouse of Fleet and A712 to A714 junction via the A75. Journey times based on travel on a weekday at 1pm. Source: Scotland Transerv and Google Maps.

[84] Figure based on the length of the diversion route shown in Figure 5-27, plus the distance between the A75/A751 and A77/A751 junction (to Innermessan). Journey times based on travel on a weekday at 1pm. Source: Scotland Transerv and Google Maps.

[85] Figure based on the length of the diversion route shown in Figure 5-28, plus the distance between Cumnock and Mennock via the A76. Journey times based on travel on a weekday at 1pm. Source: Scotland Transerv and Google Maps.
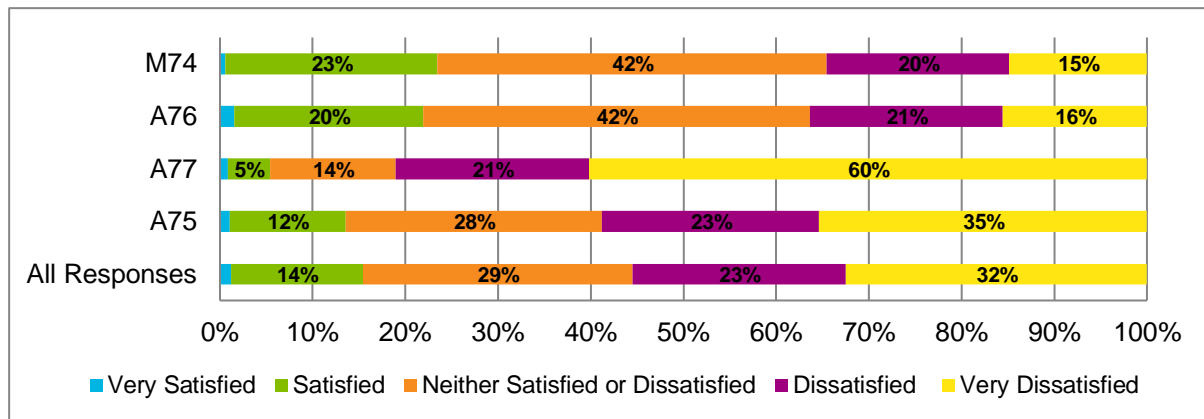
Figure 5-29: Satisfaction with diversionary routes by road corridor[86]

The issue of diversionary routes was also raised during the individual consultations with industry. Both P&O and Stena Line noted that diversions add significantly to journey times to and from the ports and lead to issues with journey time reliability. It was noted that frequent diversions reduce user confidence and there is risk that customers shift to alternative ports where road connections are of a higher standard and the risk of delays and subsequent business impacts is lower.

Bus operators consulted during this study also highlighted diversions as a key problem, with impacts including:

- Additional costs associated with putting on additional vehicles at earlier times to ensure passengers make their ferry connections in the event of route diversions;

- Problems with meeting connecting services e.g. in Glasgow to other Scottish cities;

- Potential increases in sub-contractor fees due to increases in fuel costs; and

- Difficulties for drivers manoeuvring large coaches down small winding roads.

Key Points:

There are limited alternative routes when an incident or planned route maintenance occurs on the region's trunk roads. When a diversionary route is required, the alternative route is often on poorer quality roads which route through rural communities and can significantly increase journey distance and journey time, as well as increasing the maintenance costs on the local routes used during the diversion. For businesses, the increased fuel and staff costs and wear and tear to vehicles impact on business operations and can lead to a 'loss of faith' in port access.

RD5) HGV Parking / Rest Areas

Description:

Lorry drivers need to take regular breaks due to driver hour regulations. Within the study area, there are few formal HGV parking / rest areas which have appropriate eating, toilet, or rest facilities and it has been suggested that there are some problems with large vehicles stopping in inappropriate locations, particularly during incidents on the road network.

Evidence:

Survey work to better understand freight movements in the region highlighted that while layby parking supply on the A75 was generally seen as sufficient in number, there are few formal rest area opportunities or locations with eating, toilet or rest facilities. Whilst it was reported during stakeholder engagement for this study that drivers of accompanied freight will seek to take their required rest break during ferry crossings, some drivers heading towards Ireland may have reached their daily driving limits and would not therefore have sufficient time to drive all the way to the ports. Rest facilities on the route would therefore be beneficial in these circumstances.

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[86] Source: Public Survey

What people told us:

During the stakeholder workshops, it was noted that there are defined routes for timber vehicles and if there is a road closure involving these routes, timber vehicles have no option but to park in local villages and wait until the road re-opens causing safety and amenity issues for local communities. Girvan in particular was highlighted as a location where HGVs currently stop for a short break.

Consultation with the freight sector highlighted a view that while hauliers travelling to the ports at Cairnryan would typically take their break while on the ferry, rest area facilities would be welcome as there is a lack of suitable locations for lorries to come off the road network in the event of an incident. Additional facilities, including arrangements for lorry stacking, would be beneficial in terms of resilience, for example during periods of adverse weather.

> **Key Points:**
> There are few formal HGV parking / rest areas with appropriate eating, toilet or rest facilities in the study area. During the consultation, concerns were raised about HGVs stopping in inappropriate locations, particularly during incidents and associated safety risks.

RD6) Traffic in and around Dumfries

Description:

Dumfries is the largest town in Dumfries and Galloway and is the meeting point of the A75 and A76 trunk roads. The region's main acute services hospital and other social and cultural centres are located in the town as well as higher and further education facilities. Traffic delays in and around the town centre were highlighted during stakeholder engagement as having an impact on the ability of traffic to move around the town, impacting on journey times for traffic on the trunk routes, increasing carbon emissions and reducing air quality.

Evidence:

Figure 5-30 shows average journey times on the Dumfries bypass westbound, including variation based on average journey times in August 2017 and average journey times for 2017 as a whole for both weekdays and weekends. This illustrates that average journey times are longer during peak commuter times of the weekday morning and weekday early evening periods. While the weekday journey time profiles for August 2017 (indicated by the blue line) and 2017 as a whole (indicated by the orange line) are similar, it is evident from the shaded section in the figure that there is a relatively high degree of journey time variability during these periods i.e. journeys taking longer or shorter than the average for that time period. These results suggest a higher volume of traffic on the road around peak commuter times, thus indicating a potential factor of congestion.
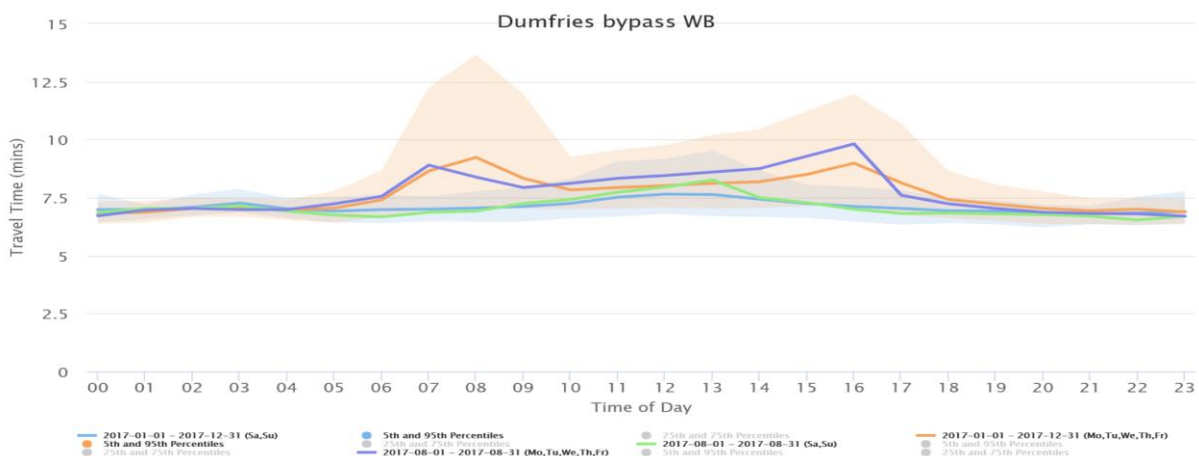
Figure 5-30 Dumfries Bypass Journey Times[87]

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[87] Source: INRIX Journey Time Data

What people told us:

During the stakeholder workshops, several comments were received about congestion on the road network in and around Dumfries, including:

- The A76/A75 (the Cuckoo Bridge) roundabout is congested at peak times;

- A701/A75 roundabout is congested at peak times;

- The effectiveness of the Dumfries bypass was questioned by some attendees who felt that even the slightest disruption on the bypass brought the town centre to a standstill;

- Journeys to the hospital in Dumfries are long and unreliable due to congestion which impacts on both patients and staff; and

- Free parking in the town centre contributes to congestion in the town.

Information recorded on the Placecheck tool also highlighted the Cuckoo Bridge roundabout in particular as a bottleneck, with traffic exiting Dumfries town centre having priority over eastbound traffic on the A75, leading to calls for measures to improve traffic flow and safety.

Key Points:

Dumfries is the regional and administrative centre in Dumfries and Galloway, with traffic congestion in and around Dumfries contributing to journey time reliability for all road users.

RD7) Electric Vehicle Infrastructure

Description:

There are limited electric vehicle (EV) charging points across the region.

Evidence:

Figure 5-31 shows the location of EV charging points across the study area[88]. While there are several charging points at various points along the A75, there are only charging points at Girvan on the A77 and there are none available on the A76 corridor. Within the central area, there is only one charging point at St. John's Town of Dalry. The limited coverage of EV charging points in the study area is likely to contribute to poor EV uptake and higher emissions from road traffic.
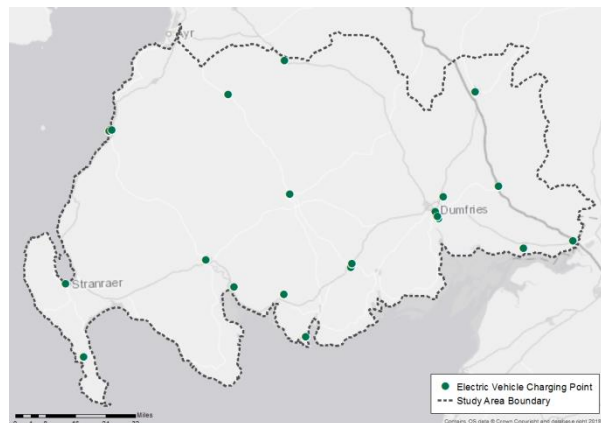
Figure 5-31: EV Charging Points across the region

What people told us:

This issue was not raised specifically during the engagement but was instead identified via data analysis.

Key Points:

There are limited electric vehicle charging points in the study area. This is likely to constrain uptake in electric vehicle use, especially given the limited travel distances that can be made by electric vehicles and the average distances involved in making strategic trips in the region.

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[88] Source: Charge Places Scotland

5.7 Problem and Theme Alignment

During a two-day study team workshop, the problems and opportunities identified were collated and reviewed and each problem was 'mapped' to one or more 'Themes'. A summary of these themes is outlined below, while Table 5-25 indicates how each of the problems discussed above relates to the identified problem themes.

- **Average Journey Times:** Several problems identified contribute to slow average journey times on strategic routes in the region due to vehicle platooning and road alignment/bend issues which limit overtaking opportunities. Slow rail journey times to the Central Belt on the GSWL, limited bus service frequencies and a lack of public transport integration also contribute to longer overall travel times for journeys in the region.

- **Journey Time Reliability:** Journey time reliability was another theme that has been identified across several of the problems, for example associated with long diversionary routes in the event of incidents on the road network, and issues associated with the reliability of bus services.

- **Environmental Impact:** Several problems linked to the impacts of traffic, including HGVs, travelling through settlements based on the strategic road network have been noted to have an environmental impact in the form of air quality, noise, vibration and severance impacts on communities in the South West of Scotland.

- **Safety:** Concerns regarding road user safety, as well as the safety of active travel modes, was another recurring theme amongst a number of the problems identified.

- **Mobility:** Difficulties and barriers for certain groups in accessing parts of the transport network, including people with mobility impairments, was noted across several of the problems.

- **Connectivity:** Limited connectivity to sites of employment, education, health and leisure, particularly by public transport, was a frequent theme raised that can be linked to a number of the identified problems.

- **Cost:** High fares for certain public transport journeys was noted across a number of the problems, alongside issues associated with higher costs for businesses due to a lack of resilience on the strategic road network in the South West of Scotland.

Table 5-25: Problem Summary Tables

Problem	Themes						
	Average Journey times	**Journey Time Reliability**	**Environmental impact**	**Safety**	**Mobility**	**Connectivity**	**Cost**
Active Travel							
AT1) Active Travel Links to Key Interchanges: *Active travel links to interchange points is limited and / or of a poor quality, with a review of infrastructure highlighting a lack of 'bus boarder' kerbs and 'drop kerb' crossing points.*				✓	✓		
AT2) Cycle Facilities at Rail Stations / on Trains: *There is a perception that cycling facilities at stations in the study area are poor and there is limited space for bikes on trains, which may contribute to people choosing to drive to rail stations instead of cycling.*						✓	
AT3) Cycle Infrastructure and Facilities: *There is a lack of (safe) off-road cycle routes alongside the key trunk road routes, offering limited active travel accessibility across the area, and to bus and railway stations in key settlements.*				✓		✓	
Bus							
BU1) Bus Quality and Accessibility: *Bus quality varies across the region, with ageing vehicles used on several routes. This reduces the journey quality and leads to accessibility problems for some elderly, disabled or mobility impaired users.*					✓		
BU2) Bus Service Frequency: *Bus frequencies across much of the region are low, with some areas having no service in the off-peak periods. This can contribute to a range of socio-economic issues, including difficulty accessing employment and healthcare, increasing social isolation, and 'forced car ownership'.*	✓					✓	
BU3) Bus Operating Hours: *Bus operating hours can constrain use of the network early and later in the day to access e.g. shift-based employment and evening social & leisure opportunities.*	✓					✓	

Problem	Themes						
	Average Journey times	**Journey Time Reliability**	**Environmental impact**	**Safety**	**Mobility**	**Connectivity**	**Cost**
BU4) Bus Service Reliability: *Limited real time information on bus services and consultation feedback indicates that bus services can be unreliable, leading to a lack of confidence in the bus network which could be a contributing factor for declining bus patronage.*		✓				✓	
BU5) Bus Fares: *Bus fares across the network are high, sometimes higher than travel by rail, and noticeably higher than the cost of travel by private car in several instances.*							✓
BU6) Integrated Ticketing: *A lack of integrated ticketing in the area may constrain the ability of residents to effectively and economically access employment.*						✓	✓
BU7) Service Integration: *There is a lack of integration between bus services, bus and rail services, and bus and ferry services.*	✓				✓	✓	
Rail							
RA1) Access to Rail Stations: *Limited rail coverage in the region constrains local people's ability to use rail as a means of transport and is a significant disadvantage for those without access to a car.*	✓		✓	✓	✓	✓	
RA2) Rail Station and Rolling Stock Quality: *Several stations have poor quality access and facilities, putting those with mobility needs, such as the elderly and young families at a disadvantage in accessing the rail network. There is also a perception of poor quality rolling stock on the rail network.*				✓	✓		
RA3) Parking at Stations: *There are problems with insufficient parking and a lack of disabled parking at some stations, including Barrhill and Lockerbie.*					✓	✓	
RA4) Rail Fares: *The cost of rail travel from the study area is high compared to equivalent trips by car, and those who are unable to access Lockerbie Station are unable to benefit from the lower fares to*							✓

Problem	Themes						
	Average Journey times	**Journey Time Reliability**	**Environmental impact**	**Safety**	**Mobility**	**Connectivity**	**Cost**
both Edinburgh and Glasgow than the equivalent trips on the Glasgow South West Line.							
RA5) Rail Service Frequency: *Large gaps in the rail timetable and between direct services on the Glasgow South West Line (for Stranraer) can constrain use of the rail network in the study area.*						✔	
RA6) Rail Operating Hours: *Short operating days at some stations, particularly at weekends, can limit the opportunities for travel for people in the study area, affecting access to both regular and out of office hours' employment as well as social and leisure opportunities.*						✔	
RA7) Rail Journey Times: *Journey times to the Central Belt are much slower on the Glasgow South West Line compared to those from Lockerbie on the West Coast Main Line.*	✔					✔	
Bus / Rail							
BR1) Public Transport Connectivity: *Public transport coverage across the area varies greatly by location; more rural areas are less well connected and have reduced access to employment opportunities, healthcare and further and higher education.*	✔		✔		✔	✔	✔
Road							
RD1) Road Standard and Usage: *Traffic platoons and alignment issues reduce overtaking opportunities on strategic routes in the study area leading to a slower overall road speed, driver frustration and a higher propensity for severe accidents.*	✔			✔			✔
RD2) Route Consistency: *Trunk roads run directly through a number of speed-limited settlements, causing local disruption in the form of noise, vibration, severance, poor air quality and safety issues.*			✔	✔			✔

Problem	Themes						
	Average Journey times	**Journey Time Reliability**	**Environmental impact**	**Safety**	**Mobility**	**Connectivity**	**Cost**
RD3) Road Maintenance: *There is a perception that road condition is poor within the study area which can have implications for safety and contribute to longer / unreliable journey times.*	✔			✔			✔
RD4) Diversionary Routes: *When diversionary routes are required, the alternative route is generally on poorer quality roads which significantly increase journey distance and journey time.*	✔	✔	✔	✔		✔	✔
RD5) HGV Parking / Rest Areas: *There are few formal HGV parking/rest areas with appropriate eating, toilet or rest facilities in the study area.*			✔	✔			
RD6) Traffic in and around Dumfries: *Dumfries is the meeting point of the A75 and A76 trunk roads, with traffic delays in and around the town centre impacting the ability of traffic to move around the town, impacting on journey times for traffic on the trunk routes, increasing carbon emissions and reducing air quality.*	✔	✔	✔	✔			
RD7) Electric Vehicle Infrastructure: *Limited electric vehicle charging points in the study area may constrain the uptake in electric vehicle use.*			✔				

5.8 Economic and Social Impacts

Transport is a means to an end, not an end in itself. Transport problems manifest as linked socio-economic issues and understanding the links between the two is essential in order to develop interventions that positively impact on the region and Scotland overall. The transport problems identified through the analysis above have been collated into key themes as shown in the previous tables. A range of socio-economic impacts associated with each of these themes is discussed below.

Average Journey Times

The Competitiveness of the ports at Cairnryan

Travel times between the motorway network and the ports at Cairnryan are seen by many stakeholders as posing a threat to the future of the ports. There are various options when travelling from England / Scotland to Northern Ireland. The ports at Cairnryan benefit from short journey times due to being geographically closer to Northern Ireland than the southern ports at Holyhead, Liverpool and Heysham. This is of particular benefit in being able to offer 'just in time' deliveries both to Northern Ireland and vice-versa into Scotland from Northern Ireland, with produce not requiring to be at a port until the early hours of the morning, but still be in the shops by opening time. In fact, based on total travel time to Belfast from the whole of the UK (including drive and sailing time), it is quicker to reach Belfast via Cairnryan port from as far south as Norfolk and Norwich. In this regard, the ports at Cairnryan are in a strong position.

As noted in Chapter 3, other ports have benefited from investment in road infrastructure (Holyhead has the A55 which is a dual carriageway, the port at Liverpool is closely connected to the M6 by the M56 and M58 and Heysham has the A683 which is also now dual carriageway), meaning Cairnryan is now the only one of these major Irish Sea ports with single carriageway access. Travelling from the south to the ports at Cairnryan requires driving 100 miles of single carriageway from the A74(M) at Gretna to the ports. Travelling from the Scottish Central Belt south of Ayr, the single carriageway A77 passes through eight small towns with 30mph speed limit zones. The two main ferry operators, P&O and Stena Line, noted that the Loch Ryan crossing route is now beginning to lose market share to

Figure 5-32: Fastest Journey time to Belfast (incl. over land and sea)

the other competing routes serving Northern Ireland and the Republic of Ireland. It was felt by the operators that long average journey times on the A75 and A77 to the ports at Cairnryan (due to road topography, alignment and routeing through small communities) was a factor in influencing both existing and potential business and leisure users of the port to potentially utilise a different, more easily accessible port.

The impact of reduced use of the ports at Cairnryan could have a number of important impacts, both locally and further afield including:

- Reducing locally available employment opportunities - particularly in and around Stranraer. Engagement with ferry operators suggested that over 300 people are employed at the ports and on the ferries, with a considerable proportion of these living locally. Furthermore, many freight business ferry users employ lorry drivers and other support staff from the local area. Any reduction in port usage could therefore potentially reduce locally available employment opportunities.

- Distribution centres in the Scottish Central Belt use the ports at Cairnryan, including several major supermarkets that have distribution centres in Livingston, Cumbernauld and Bellshill serving stores across Scotland and Northern Ireland. They are reliant on the roads accessing the ports, especially the A77, being undisrupted to deliver their goods on time. If deliveries are consistently delayed due to the road network, they may decide it is better to serve Northern Ireland from a port further south - with an associated distribution centre further south. This could have knock-on effects with potential job losses at Scottish distribution centres and haulage firms.

Local Access

Long average road journey times impact on local people's ability to effectively access jobs, education and social activities. This can also impact on population retention in the area – particularly in younger age groups; and the attractiveness of the area for potential in-migrants. These factors contribute to the ageing demographic profile in the area.

This is also an issue for trips made by public transport where circuitous local routeing results in long journey times and limits the catchment area for employment and education, impacting on communities' ability to retain people in the local area and influencing out-migration from the area. Stakeholders also noted that the transport network was a factor in constraining the development of the tourism 'offer' in the area.

Journey Time Reliability

Any unanticipated delay on the road network which causes an increase in journey time, and especially the increased time and distance associated with journey times when a diversion is in place, can have detrimental impacts including:

- Increased costs to businesses due to the need to allow for longer journey times in planning their operations;

- Missed business appointments, missed connections (ferry etc.), knock-on supply chain logistics and financial late delivery penalties;

- A loss of confidence in accessibility to the ports with users shifting to alternative ports where the risk of unanticipated delay and business impact is lower;

- The loss of value of time sensitive freight – some freight such as seafood is particularly vulnerable to this;

- Difficulty in retaining the Ireland to Scotland day-trip tourist market;

- Issues for local people in accessing healthcare appointments, education and employment; and

- Difficulties for emergency vehicles to reach those in need and transport patients quickly to hospital if required.

Environmental Impact

A number of the noted problems have an adverse environmental impact. The impacts to local communities of the diversionary routes required when there is an incident on the trunk network has been discussed earlier in this chapter in terms of the increased noise and vibration and emission impacts on local communities. In addition, the environmental impacts of trunk roads routeing through the centre of small communities has also been noted, with communities adversely affected by traffic noise, vibrations and the inherent traffic safety issues.

The region as a whole, typical of a rural area, has a high dependence on the private car, and a low proportion of households with no car (just 23%, although this is higher in certain communities). In part, high car use is driven by the level of public transport availability and facilities, which can lead in some instances to forced car ownership to enable access to key services.

The limited bus service availability and frequency, limited access to the rail network (including lack of easy access to local stations and station parking availability) and limited safe and secure active travel access to the strategic public transport network, can lead people to rely more heavily on private car travel with associated environmental dis-benefits, including carbon emissions, as well as other negative impacts on population health.

Safety

As set out earlier in this chapter, analysis of road safety data suggests that while the number of accidents on the trunk road network is below the equivalent national accident rates, when accidents do occur they tend to be more serious in nature. It is also to be noted that a general perception that the trunk routes are unsafe, as identified from public and stakeholder engagement, could have an adverse impact on use of the roads by both businesses and local people.

Accidents come at an economic and social cost, including: loss of output due to injury; medical costs; the human cost of casualties including the grief and suffering to the casualty, relatives, and friends; intrinsic loss of enjoyment of life in the case of fatalities; damage to vehicle and property; and police and insurance administration cost.

Mobility

Around a quarter of the total population (24.4%) in the study area is aged 65 or older whereas the equivalent for Scotland is just 18.5%. Ease of access and use of public transport is therefore very important with mobility a key issue. This applies not just to older people, but also to those less able or with a disability. It is important to note that the Concessionary Fares scheme operational in Scotland makes travel by bus free for those over 60 years old, whereas only a discount of a third is offered when travelling by rail. Availability of the bus network is therefore highly important, especially for those with lower available income.

Public Transport Connectivity

The low population density in the region presents challenges for the provision of commercially sustainable public transport services in the area as noted above. Given the dispersed population and travel distances involved, modes such as walking and cycling are only suited to shorter, local trips.

As discussed in Chapter 3, providing commercially sustainable public transport services in the area is challenging, with two-thirds of services operated in part with subsidy. Consultation has suggested that the current model for providing bus services is not sustainable and the bus network is fragile. Given this, there is a high level of uncertainty in the ability to depend on the future bus network and plan travel decisions accordingly. For those living in rural areas without access to a car (or who would prefer not to use a car), there is often no alternative other than the bus and therefore many of these services are lifeline services.

Integration of bus and rail services is also limited across the region, due in part to the competitive environment in which they operate. While a walking trip is required to access rail stations from the nearest bus stop, wait times between services can be lengthy, adding substantially to overall journey times by public transport. In addition, for those communities not located on the rail network, bus services often do not operate early or late enough to provide access to rail services at the start and end of the operating day, thus limiting people's use of the rail network to access employment, education, health and social opportunities.

Access to Healthcare

Analysis of the socio-economic data for the region provides evidence of a lower working age and more elderly population than the national average. This can place additional burdens on health care, public transport and other services required by a more elderly population.

As identified in the public transport connectivity analysis, while most communities in the study area can access the nearest general hospital in the morning and return in the evening, journey times are often long, and routes are often indirect requiring at least one interchange. The limited access to health facilities may be impacting upon health outcomes and contributing to higher NHS costs, higher car use and / or forced car ownership.

On a separate but related issue, consultation highlighted concerns around the difficulties in attracting individuals to work in key professions in South West Scotland, such as the healthcare sector which leads to local people having to travel further afield e.g. to Ayr, for access to key services, contributing to feelings of isolation and concerns about lifeline medical care. Examples given included GP surgeries which suffered from staff shortages and closure of the midwifery unit in Stranraer. During consultation, reference was also made by some groups to 'the Golden Hour',

which is the hour following a traumatic injury which is critical to a person's survival and can lead to serious and fatal consequences if they do not reach a hospital in time. Good transport connections to medical facilities are therefore essential, with it being noted that the concerns around the ability for ill or injured persons to be transported for urgent medical care due to substandard transport infrastructure can undermine confidence and discourage local people from living in the South West of Scotland.

Access to Employment

Analysis of the socio-economic data for the region suggests the economy of South West Scotland is less robust and less productive than that of Scotland as a whole. This is manifested through higher unemployment levels, lower productivity, lower incomes and greater dependence on the public sector for employment. Access to employment opportunities is therefore important in ensuring equality of access for those living in the area and supporting the long-term sustainability of rural communities.

Analysis has suggested that the economy is heavily dependent on Dumfries & Locharbriggs as a local hub of population and centre of employment. There is limited integration with the economies of neighbouring areas, potentially given the problems associated with more strategic longer distance travel into and out of the region.

In terms of accessing employment, there is currently very limited interaction with Glasgow and it is important to note the strong integration with the economy of England, particularly along the A74(M) corridor, with a strong Dumfries to Carlisle commuter belt. It is also worth noting that Carlisle is a much closer, and therefore more accessible, city destination for many in the study area, including for those residents both north and west of Dumfries. While both bus and rail services connect Dumfries with Carlisle (and

Figure 5-33: Nearest Major City – Glasgow to Carlisle

link the communities between them), rail services offer much quicker access and communities without rail access have much poorer connectivity to Carlisle than those with rail stations. This limits employment and education opportunities for those residents in less well-connected communities. Recent job losses in the Dumfries / Carlisle corridor necessitates the need to travel further afield for employment.

Figure 5-33 demonstrates the relative proximity to Carlisle and Glasgow from the study area, showing whether each census area is closer to Carlisle or Glasgow in terms of journey times using public transport (with the analysis considering travel between 08:00 – 12:00). As noted above, the map shows that for much of the area, it is easier to access Carlisle than Glasgow, highlighting the importance of the city to the region.

Across the study area, Moniaive, Dalmellington and Bellsbank have the highest differentials between public transport and car journey times with a far higher number of jobs accessible by car from these locations than by public transport. For these communities, the jobs market is restricted for those households where car ownership is not possible due to financial or mobility issues.

The existing bus operating hours across the network limits employment opportunities, with many people unable to utilise the bus network to undertake shift work.

Access to Education

In terms of population and labour market, the socio-economic analysis has identified that local residents are less skilled than the national average with lower education levels (with a lower than national average for residents with degrees or postgraduate qualifications and greatly exceeding the national average of people with no qualifications potentially). This is indicative of limited access to further education opportunities, as also borne out in the connectivity analysis undertaken. This has the potential to create a skills gap which would have negative implications for the strength and diversity of the local economy by limiting its attractiveness to industries which require highly skilled staff.

Dependable transport services providing access to higher and further education, and employment opportunities are key to retaining people, and especially younger people, in the region and rebalancing the region's ageing demography. An example of the implications of the reducing number of young people in the area is the available range of subjects that can be offered in rural schools. Moffat Academy is one such school, where the falling student roll means the curriculum that can be offered has reduced and students must now travel to Lockerbie to undertake studies in certain subjects, with a subsequent drain on both student and teacher time and resource.

The limited access to higher education establishments from some areas within the study area may also be impacting upon the educational attainment levels in these locations and contributing to higher car use and / or forced car ownership, which can be an issue for lower income households. In addition, a lack of accessibility could force students to move out of the area to continue their studies. This places a financial burden on them and their families who need to finance additional accommodation in the place of study etc.

Access to Social and Retail Opportunities

Social and retail opportunities for those residents in less well-connected communities are more limited. The notable decline in public transport connectivity to many communities in the evening (after 21:00) is likely to be limiting the potential for residents to undertake evening-based leisure and social opportunities and / or extended day trips to the towns due to the need to catch the last bus / train home. This also applies to extra-curriculum school activities. This can leave communities feeling isolated and limit younger people's ability to fully participate in social activities.

Inbound Access

As well as providing outbound connectivity for local people to employment, education and social & leisure opportunities, the connectivity of the region is also important in enabling inbound access, such that those employed in vital services (teachers, healthcare professionals etc.) can be recruited to work locally but travel in from further afield. In addition, greater inbound transport connectivity would allow access to a wider skills base and labour market catchment for local businesses.

Cost

The cost of travel by public transport can severely restrict people's ability to take up employment and education opportunities. The analysis of bus fares against the equivalent cost of travelling by car shown earlier in this section has highlighted the financial disadvantage placed on those reliant on public transport services.

The higher fare, with the longer journey time, from Dumfries to Glasgow by rail and especially from Dumfries to Edinburgh, compared to the equivalent rail fares from Lockerbie means those without reasonable access to the West Coast Main Line at Lockerbie (or at Carlisle) are negatively financially impacted. The same applies with the fares 'jump' across the boundary between East Ayrshire (in the SPT area) and Dumfries & Galloway, where those with access to a car, can drive to the New Cumnock to take advantage of the cheaper fare (albeit offset to some degree against the car fuel cost).

The higher number of elderly people in the region means that concessionary fare use is high. The fragile nature of bus operations could have a significant impact on the region if the current model became unsustainable. As well as the reduced connectivity to many of the rural areas where access to the rail network would not be possible, for those locations where there is access to the rail network, the lack of a similar concessionary fares reduction may impact on people's ability to afford to travel.

For many journeys in the region travel by rail is cheaper than by bus meaning those without access to the rail network are financially impacted. This can lead to 'forced' car ownership where households have no alternative but

to run one or more cars. For low income households, this can take up a disproportionate amount of household income with the financial difficulties that this implies.

Summary

Taken together – and as supported by the stakeholder engagement exercises – the travel times by road and the level of connectivity provided by the public transport potentially impacts on the opportunities of local residents, the attractiveness of the area to in-migrants, and the prospect for encouraging investment in the area to realise opportunities, such as tourism.

These issues will in turn be impacting on the local demographic profile and also levels of prosperity in the area. Improved connections to major centres such as Carlisle, Edinburgh and Glasgow, and regional centres such as Ayr, Kilmarnock and Dumfries would widen the opportunities available to current or prospective residents, leading to, for example, a more sustainable demographic mix, greater prosperity, a less socially isolated population and potentially improved health outcomes.

From a national perspective, the erosion of the competitive position of the ports at Cairnryan could lead to a cycle where investment is not forthcoming, service levels are reduced and market share is lost. As raised during stakeholder consultation, there is a concern that this could represent a threat to local employment in the South West of Scotland and the operations which are based in Scotland as a result of the presence of the ports.

5.9 Opportunities

There are a number of key opportunities that transport improvements in the South West of Scotland can support and help to realise, as set out below:

- **Encouraging Inward Investment:** Improvements to the overall accessibility of the area, by all modes, has the potential to encourage inward investment to the region; this could also help to stimulate investment at the ports with associated positive impacts on the local economy. This potential is anticipated to be further aided by the development of the **South of Scotland Enterprise Agency**[89], which is planned to come into operation in April 2020. The South of Scotland Economic Partnership has been established to respond to the economic needs and opportunities of the South of Scotland in advance of the establishment of the new Agency. Once established, the initial high level aims of the Agency include creating opportunities for all.

- **Supporting Tourism:** The region has a strong tourism offering with a long coastline, forests and green spaces. The Southern Upland Way, a 214 mile long footpath between Cockburnspath on the North Sea coast and Portpatrick close to Stranraer, the 7Stanes mountain bike sites, multiple castles, museums, golf courses, Galloway Forest Park, festivals and the UNESCO Biosphere are examples of the range of attractions on offer for tourists. It was also noted during consultation that the Lake District suffers from overcrowding, particularly during the summer months and areas such as the Galloway Forest could attract tourists. However, throughout the engagement process concern was expressed that inadequate transport connections inhibited this potential with poor connectivity including long journey times within and to the region considered a major deterrent to attracting visitors to the area. There was felt to be a range of opportunities to encourage sustainable tourism throughout the region by providing better public transport connections and a need to make sure active travel is accommodated as part of the strategic sustainable transport network. In turn, revenue generated by active travel tourism was felt to offer long term benefits by providing local employment opportunities within the region and helping to support local communities. Stakeholder engagement undertaken as part of this study identified that the South West Coastal 300 was as a key opportunity which has the potential to increase the number of tourists visiting the region. While work would be required around marketing, signage and wayfinding, drawing on the success of the North Coast 500 scenic route initiative in northern Scotland, it is considered that development of the South West Coastal 300 could help to increase tourist numbers and support economic development opportunities in the region.

- **Promoting Rail Freight:** The timber industry is highly active in the region, with the forecast timber production tonnages in Ayrshire alone over a 15-year period suggesting that there is major production (over 300,000 tonnes) forecast in South Ayrshire in the Barrhill area and around the Galloway Forest[90]. There is an opportunity to move timber more sustainably by rail if suitable road-to-rail facilities were available. While it is recognised that a critical mass would be required to enable this to be cost-effective, modal shift to rail would

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[89] https://www.gov.scot/groups/south-of-scotland-economic-partnership/
[90] Ayrshire Freight Strategy Effective Movement (March 2016)

remove HGVs from the road network, reducing carbon emissions, noise and vibration impacts and potentially reducing road maintenance burdens. It is noted that there have been discussions previously regarding a timber storage freight facility at Beattock and more recently at Barrhill and Girvan.

- **Realising Development Opportunities:** The relocation of the ferry port from Stranraer to Cairnryan in 2011 has resulted in vacant land and an opportunity for redevelopment of **Stranraer Waterfront**. Stakeholder engagement has noted that for any development to be a success, good transport infrastructure and strong connectivity is required. Dumfries and Galloway Council's Strategic Outline Programme, Reshaping Stranraer and the West Region, states that repurposing the waterfront is essential to align Stranraer with marine leisure and that an expanded Marina Project will serve as a major economic driver upon which the whole town redevelopment will pivot[91]. The inactive **Ministry of Defence site at Eastriggs** and the former nuclear power station at **Chapelcross** (currently in decommissioning) both offer development opportunities with their potential better realised if easier and better accessibility to the sites were enabled.

- **Growth Deals:** In March 2019 it was announced that five local authorities in England and Scotland will benefit from funding made by the UK and Scottish Governments as part of the **Borderlands Growth Deal**. This includes £65 million of funding from the UK Government for Scottish areas of the deal (which covers Dumfries & Galloway and Scottish Borders) and £85 million of funding from the Scottish Government. The specific projects and activities to be supported as part of the Deal are broadly outlined as part of a Heads of Terms agreement. The aforementioned redevelopment of the Chapelcross former power station development has been included in the list of place-based projects within the deal[92]. Also in March 2019, the £250 million **Ayrshire Growth Deal** (£100 million from the UK and Scottish Governments, supported by investment from South, East and North Ayrshire Councils) was signed to help drive economic development across the region. As noted in the Heads of Terms Agreement for the Deal, through the STPR2 process, a regional transport appraisal will be undertaken ensuring that appropriate consideration is given to Ayrshire's transport infrastructure and the Growth Deal projects when setting regional and national policy and intervention priorities[93].

- **Increased electric vehicle use:** An increase in the availability of electric vehicle charging infrastructure has the potential to increase accessibility to sustainable vehicles throughout the region, providing environmental benefits through reduced emissions.

5.10 Summary

This section has presented the transport related problems and opportunities identified as part of the South West Scotland Transport Study drawn from a range of sources, including previous studies, data analysis, public and stakeholder engagement, and on-site observations. Problems have been presented across mode (road, rail, bus, bus/rail and active travel), with a description provided, alongside available evidence followed by a summary of findings from the engagement programme ('What people told us'); to collectively summarise the problems identified. This section has also summarised the socio-economic impact of each of the key problem themes and has presented a summary of opportunities. In line with STAG, the findings outlined in this section have subsequently been taken forward to inform the development of Transport Planning Objectives presented in the following chapter.

[91] https://dumfriesgalloway.moderngov.co.uk/documents/s3184/JF141118%20-%20Reshaping%20Stranraer%20Appendix.pdf
[92] http://www.borderlandsgrowth.com/Portals/0/Documents/News/News%20Release%2007%2011%2018.pdf
[93] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784363/AGD_-_Heads_of_Terms_-_February_2019__-_Agreed_Final.pdf

Transport Planning Objectives

06

6 Transport Planning Objectives

6.1 Introduction

The development of Transport Planning Objectives (TPOs) is of central importance in appraisal studies as they inform the assessment of potential options/interventions. They are required from initial option identification and sifting through to full scheme appraisal and subsequent monitoring/evaluation. In line with STAG, TPOs should align with the outcomes sought by the study, be based on a comprehensive understanding of problems and opportunities and lend themselves to clear and transparent appraisal of transport options. This chapter presents the TPOs used in this appraisal study and the approach used in their development.

6.2 TPO Development

Figure 6-1 below summarises the approach to TPO development for the study.
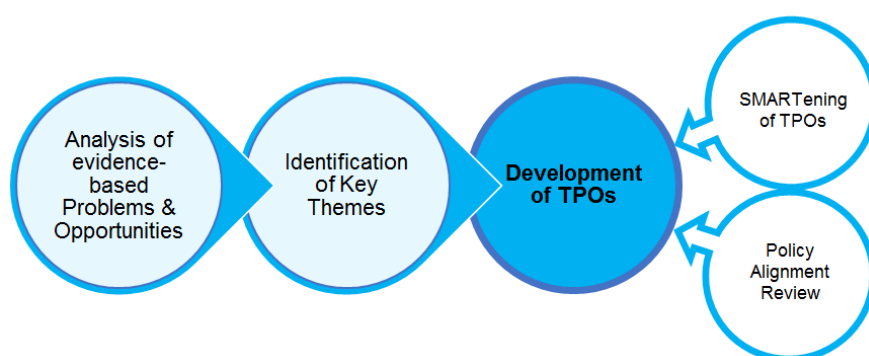
Figure 6-1: TPO Development Process

As set out, the TPO development process has been driven by a detailed understanding of the evidence-based problems in the study area. As presented in the previous chapter, data analysis and consultation have identified a number of problems including: issues associated with vehicle platooning on the strategic routes in the region which contribute to **slow journey times** and concerns about the long-term competitiveness of the ports at Cairnryan; concerns regarding **road safety** on the trunk road network; a **lack of network resilience** necessitating the use of long diversionary routes which significantly increase journey distance and time in the event of route closures; perceptions of **poor journey quality** associated with unreliable journey times and poor quality vehicles/fleets used on the public transport network, as well limited overtaking opportunities which leads to driver frustration, intimidation and stress on the road network; and connectivity analysis which has highlighted **difficulties accessing key destinations** and services by public transport for communities in the South West of Scotland.

The problems and opportunities identified have in turn informed the identification of the key transport themes discussed in Chapter 5, and subsequently the TPOs. Figure 6-2 (overpage) shows the linkage from the problems to the TPOs.

The TPOs for this study – which have been developed at a strategic level to apply to the whole study area rather than for each of the strategic corridors identified – are as follows.

- **TPO1:** Reduce journey times across the strategic transport network in the study area to the ports at Cairnryan.

- **TPO2:** Reduce accident rates and the severity of accidents on the trunk road network in the South West of Scotland.

- **TPO3:** Improve the resilience of the Strategic Transport Network across the South West of Scotland.

- **TPO4:** Improve journey quality across the road, public transport and active travel networks in the South West of Scotland.

- **TPO5:** Improve connectivity (across all modes) for communities in the South West of Scotland to key economic, education, health and cultural centres including Glasgow, Edinburgh, Ayr, Kilmarnock and Carlisle.

In developing the TPOs, consideration has also been given to the SMART criteria; that is the extent to which objectives are **Specific** (does the objective say in precise terms what is being sought), **Measurable** (does the objective say how achievement will be measured?), **Attainable** (can the objective be reached?), **Relevant** (is the objective a sensible indicator for the change which is sought?) and **Timed** (has the objective been associated with an agreed future point by which it will have been met?). Although there is no requirement for objectives to be fully SMART at Initial Appraisal stage, objectives should be developed with SMART principles in mind such that, as a study progresses, objectives can be "SMARTened" accordingly.

Additionally, in developing the TPOs, consideration has been given to the wider policy context, with Appendix B demonstrating how the TPOs align with relevant national, regional and local policy.

6.3 Summary

Based on the identified transport problems and opportunities in the South West of Scotland, the following TPOs have been developed for this study:

- **TPO1:** Reduce journey times across the strategic transport network in the study area to the ports at Cairnryan.

- **TPO2:** Reduce accident rates and the severity of accidents on the trunk road network in the South West of Scotland.

- **TPO3:** Improve the resilience of the Strategic Transport Network across the South West of Scotland.

- **TPO4:** Improve journey quality across the road, public transport and active travel networks in the South West of Scotland.

- **TPO5:** Improve connectivity (across all modes) for communities in the South West of Scotland to key economic, education, health and cultural centres including Glasgow, Edinburgh, Ayr, Kilmarnock and Carlisle.

These TPOs have subsequently been used to guide the development and subsequent assessment of options, as discussed in the following chapter.

ROAD

RD1) Road Standards and Usage: Traffic platoons and alignment issues reduce overtaking opportunities on strategic routes in the study area leading to a slower overall road speed, driver frustration and a higher propensity for severe accidents.

RD2) Route Consistency: Trunk roads run directly through a number of speed-limited settlements, causing local disruption in the form of noise, vibration, severance, poor air quality and safety issues.

RD3) Road Maintenance: There is a perception that road condition is poor within the study area which can have implications for safety and contribute to longer / unreliable journey times.

RD4) Diversionary Routes: When diversionary routes are required, the alternative route is generally on poorer quality roads which significantly increase journey distance and journey time.

RD5) HGV Parking / Rest Areas: There are few formal HGV parking/rest areas with appropriate eating, toilet or rest facilities in the study area.

RD6) Traffic in and around Dumfries: Dumfries is the meeting point of the A75 and A76 trunk roads, with traffic delays in and around the town centre impacting the ability of traffic to move around the town, impacting on journey times for traffic on the trunk routes, increasing carbon emissions and reducing air quality.

RD7) Electric Vehicle Infrastructure: Limited electric vehicle charging points in the study area may constrain the uptake in electric vehicle use.

RAIL

RA1) Access to Rail Stations: Limited rail coverage in the region constrains local people's ability to use rail as a means of transport and is a significant disadvantage for those without access to a car.

RA2) Rail Station and Rolling Stock Quality: Several stations have poor quality access and facilities, putting those with mobility needs, such as the elderly and young families at a disadvantage in accessing the rail network. There is also a perception of poor quality rolling stock on the rail network.

RA3) Parking at Stations: There are problems with insufficient parking and a lack of disabled parking at some stations, including Barrhill and Lockerbie.

RA4) Rail Fares: The cost of rail travel from the study area is high compared to equivalent trips by car, and those who are unable to access Lockerbie Station are unable to benefit from the lower fares to both Edinburgh and Glasgow than the equivalent trips on the Glasgow South West Line.

RA5) Rail Service Frequency: Large gaps in the rail timetable and between direct services on the Glasgow South West Line (for Stranraer) can constrain use of the rail network in the study area.

RA6) Rail Operating Hours: Short operating days at some stations, particularly at weekends, can limit the opportunities for travel for people in the study area, affecting access to both regular and out of office hours' employment as well as social and leisure opportunities.

RA7) Rail Journey Times: Journey times to the Central Belt are much slower on the Glasgow South West Line compared to those from Lockerbie on the West Coast Main Line.

BUS

BU1) Bus Quality and Accessibility: Bus quality varies across the region, with ageing vehicles used on several routes. This reduces the journey quality and leads to accessibility problems for some elderly, disabled or mobility impaired users.

BU2) Bus Service Frequency: Bus frequencies across much of the region are low, with some areas having no service in the off-peak periods. This can contribute to a range of socio-economic issues, including difficulty accessing employment and health-care, increasing social isolation, and 'forced car ownership'.

BU3) Bus Operating Hours: Bus operating hours can constrain use of the network early and later in the day to access e.g. shift-based employment and evening social & leisure opportunities.

BU4) Bus Service Reliability: Limited real time information on bus services and consultation feedback indicates that bus services can be unreliable, leading to a lack of confidence in the bus network which could be a contributing factor for declining bus patronage.

BU5) Bus Fares: Bus fares across the network are high, sometimes higher than travel by rail, and noticeably higher than the cost of travel by private car in several instances.

BU6) Integrated Ticketing: A lack of integrated ticketing in the area may constrain the ability of residents to effectively and economically access employment.

BU7) Service Integration: There is a lack of integration between bus services, bus and rail services, and bus and ferry services.

BUS/ RAIL

BR1) Public Transport Connectivity: Public transport coverage across the area varies greatly by location; more rural areas are less well connected and have reduced access to employment opportunities, healthcare and further and higher education.

ACTIVE TRAVEL

AT1) Active Travel Links to Key Interchanges: Active travel links to interchange points is limited and / or of a poor quality, with a review of infrastructure highlighting a lack of 'bus boarder' kerbs and 'drop kerb' crossing points.

AT2) Cycle Facilities at Rail Stations / on Trains: There is a perception that cycling facilities at stations in the study area are poor and there is limited space for bikes on trains, which may contribute to people choosing to drive to rail stations instead of cycling.

AT3) Cycle Infrastructure and Facilities: There is a lack of (safe) off-road cycle routes alongside the key trunk road routes, offering limited active travel accessibility across the area, and to bus and railway stations in key settlements.

TPO1: Reduce journey times across the strategic transport network in the study area to the ports at Cairnryan

TPO2: Reduce accident rates and the severity of accidents on the trunk road network in the South West of Scotland

TPO3: Improve the resilience of the Strategic Transport Network across the South West of Scotland

TPO4: Improve journey quality across the road, public transport and active travel networks in the South of West Scotland

TPO5: Improve connectivity (across all modes) for communities in the South West of Scotland to key economic, education, health and cultural centres including Glasgow, Edinburgh, Ayr, Kilmarnock and Carlisle.

Figure 6-2: Mapping Problems to TPOs

Option Generation, Sifting & Development

07

7 Option Generation, Sifting & Development

7.1 Introduction

This chapter sets out the process used to generate, sift, appraise and package options identified to address the TPOs for this study. The process used to generate an initial long list of options, including previous study review, on-site observations and public and stakeholder consultation, is presented alongside the assessment process adopted to sift the long list into a more manageable list for option development, appraisal and packaging. The outcomes from the appraisal and packaging is presented, with the outcomes used to guide the development of next steps.

7.2 Do Minimum

Prior to setting out the options or interventions identified to address the TPOs for the study, it is first important to set out the baseline transport network against which proposed improvements are being assessed. To this effect, STAG requires the definition of a "Do Minimum" scenario against which generated options can be appraised. In line with STAG, the Do Minimum "*includes transport improvement commitments that have policy and funding approval and from which it would be difficult to withdraw*". The Do Minimum can be further developed to inform any modelling options in later stages of the STAG process, if required. The Do Minimum for the purposes of this study includes the following committed schemes (as agreed with the Project Working Group):

- Maybole Bypass

- A76 Trunk Road (Enterkinfoot to Thornhill)

7.3 Overview of Approach

The approach to option generation, sifting and development has followed the process shown in Figure 7-1.

Figure 7-1: Approach to Option Generation, Sifting and Development

As illustrated in Figure 7-1, the process adopted has enabled the original long list of in excess of 650 options to be cleaned, sifted and packaged to a more manageable list of options for initial appraisal. The remainder of this section details this approach, which has been based on the principles of inclusive engagement and the adoption of an auditable and transparent assessment process.

7.4 Option Generation

As set out in Figure 7-1, an initial long list of transport improvement options were developed based on a range of sources including: a review of options raised in recent studies completed by transport authorities in the region (e.g. route corridor reports), on-site observation by the study team and, most significantly, through consultation with key stakeholders and the public based on the engagement exercises, i.e. Stakeholder Workshops, Telephone Interviews, Online Survey, Placecheck Tool, Community Council feedback and Elected Member Briefings. Regular meetings with the project Steering Group have also provided an opportunity for additional options to be discussed and developed.

In developing proposed improvements, interventions were identified across all modes of transport and generated across the strategic corridors identified for the study area (i.e. Gretna – Stranraer; South of Ayr – Stranraer; Dumfries – Cumnock; and Dumfries – Lockerbie / Moffat). In addition, a number of region-wide options have been generated in recognition that some options do not exclusively apply to any single corridor.

In total, across these sources, over **650** individual improvement options were identified.

7.5 Initial Option Sifting

Following consolidation of the initial long options list, a process of option sifting was undertaken at two levels;

- Firstly, an initial sift of the long list of options was undertaken based on their geographic coverage, whereby options located on or impacting the strategic transport network were selected for further consideration and options considered to be local or which were located outside of the study area were removed. At this stage, an exercise was also undertaken to remove duplicate options.

- Secondly, based on the remaining options from the stage above, a further sift was undertaken based on 'scope', whereby options not considered to be within the scope of this strategic study were removed from further consideration at this stage.

Further details of this process are described below, though it is important to note that options sifted at each stage of the process have not been discarded but rather shared with the relevant organisations for their consideration. This includes local measures which were considered to be outwith the scope of this strategic study but merit investigation from partners at Dumfries and Galloway Council, the Ayrshire Roads Alliance, SWestrans and SPT; and, for example, specific roads issues for consideration by other teams within the Scottish Government and its partner agencies e.g. roads maintenance issues that require attention by the trunk road operating company.

Sift 1: Geographic Coverage

This element of the sifting process consisted of categorising the long list of options to define whether the geographic coverage of the option was 'Strategic', 'Local', or 'Outwith' the study area. Duplicates of the same option were also sifted at this point.

Only the options categorised as 'Strategic' were progressed to the Sift 2 stage.

Examples of the types of options sifted at this stage included local bus service options, improvements to the local road network, and rail station proposals outwith the study area.

On completion of the Sift 1 stage, approximately **330** options remained.

Sift 2: Scope

This element of the sifting process involved categorising the remaining options to identify whether they were within scope of the strategic nature of the study i.e. Transport Scotland could directly deliver the improvement option or introduce policy to support improvements to the strategic transport network in the study area. At this stage, a number of options were sifted which represented 'business as usual' measures, or interventions which are already being considered at the national level such as through the National Transport Strategy and Transport (Scotland) Bill development processes.

Examples of the types of options sifted at this stage include specific roads maintenance interventions, options concerning fares and ticketing and regional bus service options. In terms of the latter, a strong message emerging from the study has been around the regional bus network with concerns raised about further bus decline in the absence of increased revenue support. Transport Scotland recognise this as a national issue and have ensured sufficient emphasis is given to it in NTS2, and have worked over recent years to enable a range of bus service powers to be provided to local authorities through the Transport (Scotland) Act 2019. This has enabled TS to develop an integrated programme of initiatives to improve bus services and people's access to more sustainable transport options. These will include developing a new bus partnership fund, starting to deliver bus priority measures on motorways and trunk roads, continuing to drive forward smart and integrated ticketing, supporting pilot projects to assess the potential of Mobility as a Service (MaaS) to improve services, working with operators, manufacturers and local authorities to green the Scottish bus fleet to improve air quality and cut carbon emissions, and working with operators, authorities and user groups to identify and promote good practice in meeting the transport needs of remote and rural communities. As this issue is considered to be applicable nationwide, this will be addressed at a more strategic level nationally through STPR2 and as such no specific options have been retained as part of this study. Appendix C summarises the types of options sifted at this stage in the process.

On completion of the Sift 2 stage, approximately **210** options remained.

A summary of the process described above is presented in Figure 7-2.
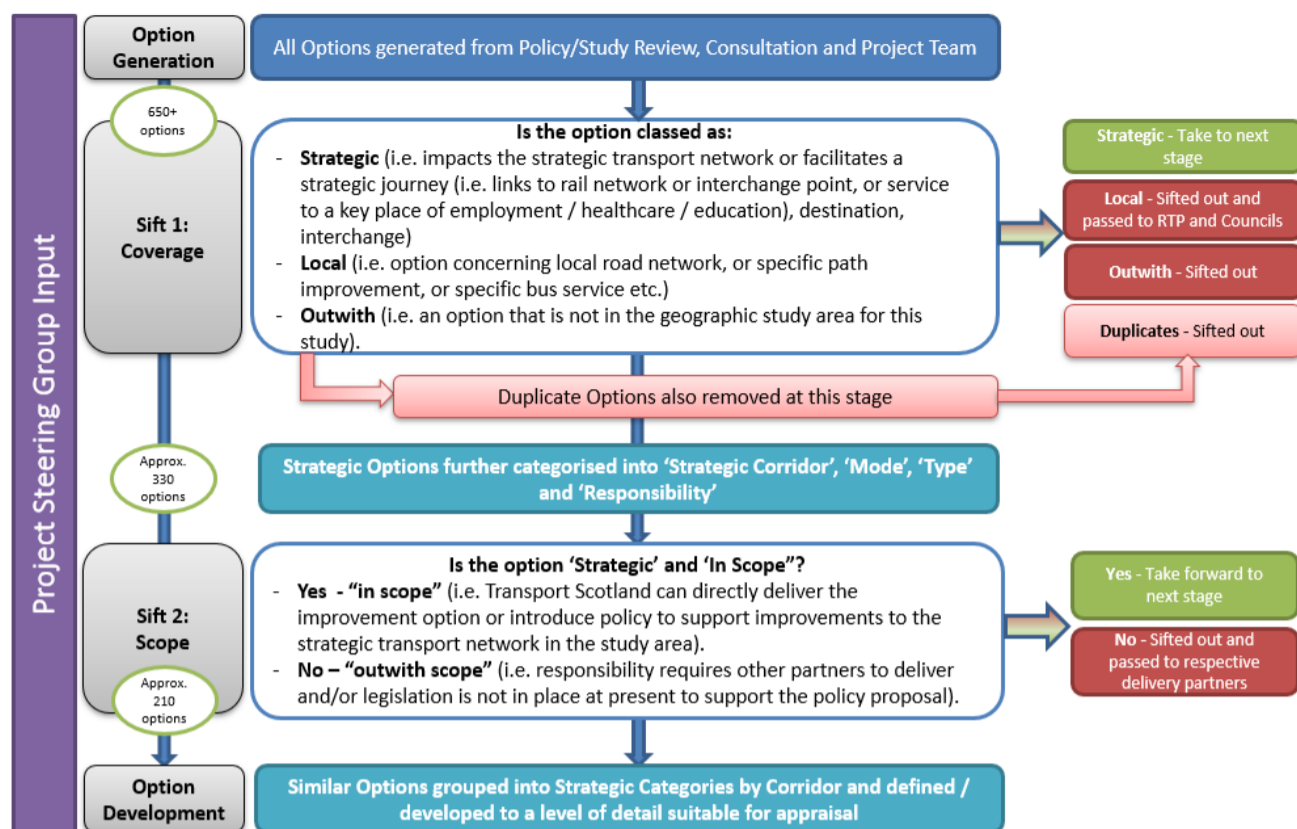
Figure 7-2: Approach to Option Generation, Sifting, Packaging & Refinement

7.6 Option Development

The remaining options were grouped by strategic corridor, with similar options put together. The categories identified in the previous stage were used to assist in the grouping of options. Options were grouped by mode and category. Across the study area, **56** options were subsequently identified. These are illustrated in the Tables below.

Table 7-1: Gretna-Stranraer Strategic Corridor Options

Ref.	Options	Description
Gretna-Stranraer Strategic Corridor		
GS-1	Full Dualling of the A75	Full dualling of the A75 between Gretna and Stranraer.
GS-2	Partial Dualling of the A75	Dualling of the A75 between Gretna and Dumfries (M6 to A76 turn-off at Dumfries).
GS-3	A75 Bypasses (Springholm and Crocketford)	Introduction of a bypass of Springholm and Crocketford.
GS-4	Improved overtaking opportunities on the A75	Improvements to deliver increased overtaking opportunities route-wide including potential sections of route dualling, 2+1s and climbing lanes. *(Examples highlighted during stakeholder engagement included Shennanton to Muil Farm, Kirkdale to Carsluith, Barlae to Cairnpoint and east of Dumfries to Hetland).*
GS-5	Improved A75 route standard	Introduction of WS2 (wide single 10m) road standard across single carriageway sections of the A75 to improve consistency and safety.
GS-6	Localised A75 Road Improvements to improve safety	Introduction of targeted route improvements to enhance road geometry, remove bends and improve safety on the A75. *(Examples highlighted during stakeholder engagement included Glenluce to Newton Stewart and Gatehouse of Fleet to Carsluith).*
GS-7	A75/A751 Junction Improvements	Improvements to the A75/A751 junction with potential options including introduction of a roundabout, smart signals, junction reprioritisation, improved lighting and advanced signage.
GS-8	A75/A76 Junction Improvements	Improvements to the A75/A76 roundabout to enhance capacity and safety.
GS-9	A75 Junctions Review	Review of junctions on the A75, including right turns, to improve safety.
GS-10	A75 Safety Cameras	Introduction of Safety Cameras on the A75.
GS-11	Dumfries Southern Bypass	Development of new Dumfries southern bypass
GS-12	New rail link between Stranraer and Dumfries	Re-opening of the former railway line between Stranraer and Dumfries.
GS-13	New Stations (Eastriggs)	Re-opening of Eastriggs Station.
GS-14	Rail Service Improvements	Service improvements on the GSWL, including increased rail services between Dumfries and Carlisle.

Table 7-2: South of Ayr-Stranraer Strategic Corridor Options

Ref.	Packaged Options	Description
South of Ayr-Stranraer Strategic Corridor		
AS-1	Full Dualling of the A77	Full dualling of the A77 between Whitletts Roundabout at Ayr to Cairnryan.
AS-2	Bypasses of towns and villages on the A77	Introduction of bypasses for towns and villages on the A77, i.e. settlements for which there continues to be urban speed limits.
AS-3	Improved overtaking opportunities on the A77	Improvements to deliver increased overtaking opportunities route-wide including potential sections of route dualling, 2+1s and climbing lanes. *(Examples highlighted during stakeholder engagement included Drummuckloch to Innermessan and Ardwell to Slockenray).*
AS-4	Improved A77 route standard	Introduction of WS2 (wide single 10m) road standard across single carriageway sections of the A77 to improve consistency and safety.
AS-5	Localised A77 improvements to improve safety	Introduction of targeted route improvements to enhance road geometry remove bends and improve safety on the A77. *(Examples highlighted during stakeholder engagement included Stranraer to Ballantrae).*
AS-6	A77/A751 Junction Improvement	Improvements to the A77/A751 junction with potential options including introduction of a roundabout, smart signals, junction reprioritisation and improved lighting.
AS-7	A77 Junction Improvements	Review of junctions on the A77, including right turns, to improve safety.
AS-8	Extend Safety Camerason the A77	Extend the coverage of Safety Cameras on the A77.
AS-9	New Lines (rail link between Stranraer and Cairnryan + Station)	Implement a rail link between Stranraer and Cairnryan, including new station at Cairnryan, considering provision for both passengers and freight.
AS-10	New Stations (Dunragit, Pinwherry)	Re-open rail stations at Dunragit and Pinwherry.
AS-11	South Ayr Station	Development of a new Ayr South station, providing improved access to Ayr Hospital and supporting wider opportunities.
AS-12	Stranraer Station Relocation	Relocation of Stranraer Station, including consideration of the potential for an integrated public transport hub in the town.
AS-13	Freight Hubs (Girvan and Barrhill)	Development of rail freight hubs in Girvan and Barrhill.
AS-14	Rail Infrastructure Improvements	Improvements to increase the capacity and operational efficiency of the rail network, including consideration of line electrification and signal upgrades on the GSWL.
AS-15	Rail Service Improvements	Increased frequency of services e.g. from Stranraer to Glasgow and from Stranraer to Prestwick.
AS-16	Rolling Stock Improvements	Upgrade rolling stock to improve operational efficiency and enhance service quality.

Table 7-3: Dumfries-Cumnock Strategic Corridor Options

Ref.	Packaged Options	Description
Dumfries-Cumnock Strategic Corridor		
DC-1	Improved overtaking opportunities on the A76	Improvements to deliver increased overtaking opportunities route-wide, including potential sections of route dualling, 2+1s and climbing lanes.
DC-2	Bypass (Sanquhar and Kirkconnel)	Bypass on the A76 between Sanquhar and Kirkconnel.
DC-3	Localised A76 improvements to improve safety	Introduction of targeted route improvements to enhance road geometry, remove bends and improve safety.
DC-4	New Stations (Cumnock, Thornhill)	New rail stations at Cumnock and Thornhill.
DC-5	Rail Infrastructure Improvements	Improvements to increase the capacity and operational efficiency of the rail network, including consideration of electrification and passing loops for freight on the Nith Valley line.
DC-6	Rail Service Improvements	Increased frequency of services and timetable changes to support e.g. express services between Dumfries and the Central Belt
DC-7	Rolling Stock Improvements	Upgrade rolling stock to improve operational efficiency and journey quality e.g. bi-mode (diesel/electric) trains on the Nith Valley line.

Table 7-4: Dumfries-Lockerbie and Moffat Strategic Corridor Options

Ref.	Packaged Options	Description
Dumfries-Lockerbie and Moffat Strategic Corridor		
DLM-1	New Road	Direct road link from Dumfries to the A74(M)
DLM-2	Dualling of Existing Roads	Dualling of the A701
DLM-3	Dualling of Existing Roads	Dualling of the A709
DLM-4	Improved overtaking opportunities on the A701	Improvements to deliver increased overtaking opportunities on the A701 including potential sections of route dualling, 2+1s and climbing lanes.
DLM-5	Improved overtaking opportunities on A709	Improvements to deliver increased overtaking opportunities on the A709 including potential sections of route dualling, 2+1s and climbing lanes
DLM-6	Bypass	Introduction of a Lochmaben Bypass

DLM-7	Local improvements to improve safety and address pinch points	Introduction of targeted route improvements to enhance road geometry, remove bends and improve safety on the A701 and A709, including addressing network pinch-points e.g. St Ann's Bridge (A701)
DLM-8	Junction Improvements	Improvements to the M6 Junction 45, aimed at improving arrangements for vehicles, including HGVs, that cannot access the junction to the north *(resulting in circuitous journeys in the locality and a detrimental impact on the local environment and economy).*
DLM-9	Re-classify existing Roads (A701 and A709)	Re-classification of the existing road network, including potential trunking of the A709 (and detrunking of the A701).
DLM-10	New rail link between the GSWL and WCML	Consideration of a direct rail link between Dumfries and Lockerbie, Annan and the WCML (Solway Loop) and other potential links between the Nith Valley Line and WCML.
DLM-11	New Station (Beattock)	New Station at Beattock
DLM-12	Improved access to rail services at Lockerbie	Improved access to rail services at Lockerbie through e.g. increased park and ride provision, improved public transport access and improved active travel access.
DLM-13	Increased services from Lockerbie	Increased services from Lockerbie which offers strategically important connections to Glasgow, Edinburgh and Carlisle, including increased evening services and considering the potential to run ScotRail services to Lockerbie.

Table 7-5: Regional Options

Ref.	Packaged Options	Description
Regional Options		
R-1	Development of the Timber Transport Network in the South West of Scotland	Package of measures designed to support the transport of timber freight by road, rail and sea, including development of the road network for timber lorries and assessing the potential development of timber hubs (e.g. Barrhill, Beattock).
R-2	Improved transport integration at main transport hubs	Package of measures to improve accessibility by active travel and public transport - including physical access, ticketing and timetable integration - at transport hubs across the region including rail stations.
R-3	Development of enhanced Diversionary Routes and Route Planning to increase resilience of the South West Scotland transport network	Package of measures and improvements to the secondary road network which performs a strategic function when the trunk road network is closed. Measures could include upgrading local roads which act as diversionary routes as well as an improved approach to raising awareness of diversionary routes.
R-4	Development of the Strategic Active Travel Network in South West Scotland	Package of improvements designed to improve active travel infrastructure including connectivity by bike in the South West of Scotland.
R-5	Development of Enhanced Service, Rest Areas and Laybys across the South West of Scotland	Package of measures to deliver improved rest provision for all road users in the South West of Scotland. Consideration to be given to facilities for HGV rest stops, electric vehicle charging points, tourist facilities and coach layover.
R-6	HGV Speed Limit Increase	Increase the speed limit for Heavy Goods Vehicles on trunk roads to 50mph.

These options have been taken forward for initial option appraisal against the TPOs and Implementability Criteria.

7.7 Option Appraisal

The options described above have been taken forward for high level appraisal to determine their suitability for taking forward for further consideration. In carrying out the qualitative assessment of each options performance against the TPOs, the following assessment criteria has been applied:

Table 7-6: Option Appraisal Criteria

	Option would be expected to have a positive impact against the TPO
	Option would be expected to have negligible impact against the TPO
	Option would be expected to have negative impact against the TPO

Option performance against the STAG implementability criteria has also been commented upon to assess an options technical and operational feasibility, affordability[94] (capital/revenue costs/value for money) and public acceptability (likely public/political acceptability of an option).

The appraisal of these options is presented in Table 7-7 to Table 7-62.

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[94] Given the high level nature of the affordability assessment at this initial stage of the STAG process, detailed cost estimates have not been developed. However, where an option is considered to have a high cost associated with it, this has been noted.

Gretna-Stranraer Strategic Corridor

Table 7-7: Appraisal of Option GS-1

Ref	GS-1	Title	Full Dualling of the A75

Description	Full dualling of the A75 between Gretna and Stranraer.

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	TP02	TPO3	TPO4	TPO5

This option is considered to contribute to journey time reduction to the ports at Cairnryan (TPO1) by increasing opportunities to overtake slower moving vehicles and also helping to reduce accident rates and the severity of accidents (TPO2). The option would also be expected to increase the resilience of the Strategic Transport Network (TPO3) by providing a higher standard of road than the existing primarily single carriageway network, hence potentially reducing the likelihood of full route closures in the event of incidents. The option would be expected to improve journey quality (TPO4) by providing a more consistent route standard and reducing driver frustration associated with limited overtaking opportunities. The option is not thought to directly improve connectivity along the corridor (TPO5), although improved resilience, capacity and journey quality may improve perceptions of connectivity.

Implementability Commentary: While this option would likely be supported by the public, road users and various stakeholder organisations, with it noted that there is currently a Parliamentary Petition for upgrades to the A75, there would likely be challenges from land owners, those residing close to the route and environmental groups due to the potential environmental impact. As a major infrastructure upgrade, this option would constitute a very high cost intervention and there are likely to be a number of feasibility issues.

Recommendation: Although this option addresses many of the TPOs, the potential scale, significant cost and environmental impact of this proposal compared with the other road-based options for this corridor means that this option is not being recommended for further consideration. Given the proximity of the corridor to the coast and the topography, there are likely to be significant engineering challenges which makes the likelihood of offline dualling high, which would result in significant cost and environmental impact.

Table 7-8: Appraisal of Option GS-2

Ref	GS-2	Title	Partial Dualling of the A75

Description	Dualling of the A75 between Gretna and Dumfries (M6 to A76 turn-off at Dumfries).

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	TP02	TPO3	TPO4	TPO5

This option is considered to contribute to a reduction in journey times to the ports at Cairnryan (TPO1) by providing opportunities to overtake slower moving vehicles and as such help to reduce accidents rates and the severity of accidents (TPO2) by increasing capacity on the corridor between Gretna and Dumfries. The option could also improve the resilience of the Strategic Transport Network (TPO3) by providing a higher standard of road than the existing single carriageway network. The option would be anticipated to improve journey quality along this section of the corridor (TPO4) by reducing driver frustration and providing easier overtaking. The option would not necessarily directly improve connectivity between Gretna and Dumfries (TPO5), although improved resilience, capacity and journey quality may improve perceptions of 'connectivity'.

Implementability Commentary: This option would likely be acceptable to the public, although there may be a lack of support from environmental groups and from those residing close to the route. There is potential for this option to have some feasibility issues associated with it; further work on feasibility would therefore be required. The option is also anticipated to constitute a high cost option and further consideration on the affordability would be required.

Recommendation: Option recommended to proceed to option packaging.

Table 7-9: Appraisal of Option GS-3

Ref	GS-3	Title	A75 Bypasses (Springholm and Crocketford)

Description	Introduction of a bypass of Springholm and Crocketford.

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	TP02	TPO3	TPO4	TPO5

This option is considered to contribute to improving the resilience of the Strategic Transport Network (TPO3) by providing additional capacity on this part of the corridor which could be used as a diversion in the event of route closure through the villages of Springholm and Crocketford and vice versa. This option would be anticipated to improve the safety of road users and pedestrians within the settlements by removing traffic from built up areas, hence having a positive impact against TPO2. Journey quality could also be improved on the A75 (TPO4). Springholm and Crocketford are the two remaining settlements on the A75 which are not bypassed; bypassing would result in journey time improvements for road users, while the standard of road constructed would be of a higher quality than the existing road, thus further improving journey quality.

Implementability Commentary: Based on stakeholder consultation, it is anticipated that this option would be supported by local communities due to the resulting reduction in traffic through the villages, including heavy goods vehicles, while road users including the freight industry would also likely support this option due to the potential for journey time improvements. The option would be anticipated to have a high cost and further consideration on feasibility issues would be required to understand the impact of the option, including potential alignment impacts.

Recommendation: Option recommended to proceed to option packaging.

Table 7-10: Appraisal of Option GS-4

Ref	GS-4	Title	Improved overtaking opportunities on the A75
Description			Improvements to deliver increased overtaking opportunities route-wide including potential sections of route dualling, 2+1s and climbing lanes. (Examples highlighted during stakeholder engagement included Shennanton to Muil Farm, Kirkdale to Carsluith, Barlae to Cairnpoint and east of Dumfries to Hetland).

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to contribute to reducing journey times to the ports at Cairnryan (TPO1) and reducing accident rates and the severity of accidents (TPO2) by increasing capacity and overtaking opportunities on sections of the A75. Similarly, the option could improve the perceived journey quality along the corridor (TPO4) by reducing driver frustration and increasing overtaking opportunities.

Implementability Commentary: As overtaking lanes are already in place at locations on the A75, this option is considered to be feasible and publicly acceptable, though more detailed assessment (including of cost/affordability aspects) would be required.

Recommendation: Option recommended to proceed to option packaging.

Table 7-11: Appraisal of Option GS-5

Ref	GS-5	Title	Improved A75 route standard
Description			Introduction of WS2 (wide single 10m) road standard across single carriageway sections of the A75 to improve consistency and safety.

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to contribute to a reduction in accident rates and the severity of accidents (TPO2) by increasing road capacity on sections of the road to a uniform standard. Visibility would also be anticipated to improve at sections which are currently constrained. Improving safety and reducing the potential for accidents on the network should, in turn, improve route resilience (TPO3) by reducing the potential for route closures. This option could improve journey quality along the corridor (TPO4) through the development of a more consistent route standard, with increased overtaking opportunities and, as a result, reduced feelings of driver frustration.

Implementability Commentary: As this option would be focused on upgrading of the existing carriageway, it is considered to be feasible, though more detailed assessment (including of cost/affordability aspects) would be required. It is considered that by enhancing route quality and safety, this option would be publicly acceptable.

Recommendation: Option recommended to proceed to option packaging.

Table 7-12: Appraisal of Option GS-6

Ref	GS-6	Title	Localised A75 Road Improvements to improve safety
Description			Introduction of targeted route improvements to enhance road geometry, remove bends and improve safety on the A75. (Examples highlighted during stakeholder engagement included Glenluce to Newton Stewart and Gatehouse of Fleet to Carsluith).

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to contribute to a reduction in accident rates and the severity of accidents on the A75 (TPO2) by enhancing route geometry and removing bends, thus reducing the potential for accidents. Any measures which target a reduction in accidents and therefore the likelihood of route closures is anticipated to have a positive impact on route resilience (TPO3). Similarly, measure which improve route standard is anticipated to have a positive impact on journey quality (TPO4). Journey times between locations across the study area and the ports at Cairnryan (TPO1) may also improve slightly as a result of improved alignment.

Implementability Commentary: This option is considered to be feasible and publicly acceptable; further consideration of affordability would be required as specific improvements are examined in more detail.

Recommendation: Option recommended to proceed to option packaging.

Table 7-13: Appraisal of Option GS-7

Ref	GS-7	Title	A75/A751 Junction Improvements
Description			Improvements to the A75/A751 junction with potential options including introduction of a roundabout, smart signals, junction reprioritisation, improved lighting and advanced signage.

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

A considerable number of stakeholders during the public and stakeholder engagement programme highlighted safety concerns at this junction and given the strategic traffic which passes through the junction, it is considered that improvements that introduce greater vehicle control and safety would positively contribute to the delivery of reduced accidents (TPO2) and improved journey quality (TPO4).

Implementability Commentary: The option is considered to be feasible and publicly acceptable; as noted, a number of stakeholders identified the need for improving this particular junction through the public and stakeholder engagement programme. Further work would be required to understand cost / affordability aspects of this option.

Recommendation: Option recommended to proceed to option packaging.

Table 7-14: Appraisal of Option GS-8

Ref	GS-8	Title	A75/A76 Junction Improvements
Description	Improvements to the A75/A76 roundabout to enhance capacity and safety.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

It is considered that this option could slightly reduce journey times to the ports at Cairnryan (TPO1) and help to reduce accidents rates and the severity of accidents (TPO2) by providing junction improvements to enhance capacity and improve safety and by improving the performance of the existing junction; for example it was observed that approaches to the roundabout are tight which resulted in HGVs mounting kerbs and also not keeping to their lane. The potential to reduce delays through the junction would also contribute to improved journey quality (TPO4).

Implementability Commentary: This option is considered to be feasible and publicly acceptable; further work would be required to understand cost / affordability aspects of this option.

Recommendation: Option recommended to proceed to option packaging.

Table 7-15: Appraisal of Option GS-9

Ref	GS-9	Title	A75 Junctions Review
Description	Review of junctions on the A75, including right turns, to improve safety.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

It is considered that this option has the potential to support journey time improvements on the A75 (TPO1), particularly if junctions where vehicles turning right and currently block through traffic are improved (potentially through the introduction of ghost islands). Similarly, removing the potential for right turn manoeuvres on the A75 would be anticipated to improve safety (TPO2) and journey quality (TPO4).

Implementability Commentary: This option is considered to be feasible and publicly acceptable; further work would be required to understand cost / affordability aspects of this option.

Recommendation: Option recommended to proceed to option packaging.

Table 7-16: Appraisal of Option GS-10

Ref	GS-10	Title	A75 Safety Cameras
Description	Introduction of Safety Cameras on the A75.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option will consider the introduction of safety camera deployments through the Scottish Safety Camera Programme annual site prioritisation exercise. This option would be anticipated to support a reduction in accident rates and the severity of accidents (TPO2) by reducing the potential for speed to be a factor in accidents on the route. Any reduction in the number of accidents could also have a positive impact on route resilience (TPO3).

Implementability Commentary: On balance, public acceptability of the option is considered to be neutral. Although some route users and stakeholder groups may support the introduction of safety cameras due to the potential for accidents to decrease along the route, concerns may be expressed by others with safety cameras potentially increasing driver frustration if they lead to greater platooning and reduced overtaking opportunities. Although safety cameras may be operationally and technically feasible, further assessment of affordability and implementability would be required.

Recommendation: Option recommended to proceed to option packaging.

Table 7-17: Appraisal of Option GS-11

Ref	GS-11	Title	Dumfries Southern Bypass
Description	Development of new Dumfries southern bypass		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to have a positive impact on route resilience (TPO3) as a new bypass could be used in the event of the existing bypass being closed, or vice versa. There is also the potential for a new bypass to improve journey quality (TPO4).

Implementability Commentary: A previous STAG Part 2 study found no obvious technical challenges associated with a southern bypass, though this would be dependent on any final alignment. Public consultation also indicated that, generally, there was support for a bypass in principle although it is noted that there may be residents close to any proposed scheme which would not support its progression. The option is also anticipated to have a high cost and further consideration on the affordability of the option would be required.

Recommendation: Option recommended to proceed to option packaging.

Table 7-18: Appraisal of Option GS-12

Ref	GS-12	Title	New rail link between Stranraer and Dumfries
Description	Re-opening of the former railway line between Stranraer and Dumfries.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to improve the resilience of the Strategic Transport Network (TPO3) by providing a new direct rail service between Stranraer and Dumfries, thus providing an alternative to road travel. There is also the potential for journey quality to improve (TPO4). A new railway line would be anticipated to improve connectivity (TPO5) to access key services by rail. This option is considered to have a negligible impact against journey times (TPO1) as until further work is progressed it is not possible to have an accurate idea of rail journey times compared to road journey times.

Implementability Commentary: While some support was expressed for this concept during the stakeholder engagement programme, it was recognised that there would likely be major feasibility challenges associated with re-establishing this rail link with it noted that much of the old railway line between Dumfries and Stranraer no longer exists or is used for other purposes. The option is also anticipated to have a significant cost and further consideration on the affordability of the option against its' anticipated benefits would be required.

Recommendation: Option recommended to proceed to option packaging.

Table 7-19: Appraisal of Option GS-13

Ref	GS-13	Title	New Stations (Eastriggs)
Description	Re-opening of Eastriggs Station.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to have a positive impact against journey quality (TPO4) and connectivity (TPO5) for those travelling to/from Eastriggs. A new station could provide a new connection to/from Eastriggs, opening up opportunities to access key services. The option is also considered to have a positive impact in terms of increasing route resilience as a rail connection could be used as an alternative to road travel in the event of road closure. Although a new station could reduce journey times for those using a new station (TPO1), existing rail users would experience slightly longer journey times.

Implementability Commentary: This option is considered to be publicly acceptable to any potential users of the new station, though there may be a lack of support for users of other stations on the line (who could see an increase in their journey times). There is potential for this option to have some associated feasibility issues; further work on feasibility, particularly around timetabling and capacity, and affordability would therefore be required (as is being examined through a separate STAG study ongoing at present by SWestrans).

Recommendation: Option recommended to proceed to option packaging.

Table 7-20: Appraisal of Option GS-14

Ref	GS-14	Title	Rail Service Improvements
Description	Service improvements on the GSWL, including increased rail services between Dumfries and Carlisle.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

Improvements to rolling stock quality and more timetabled opportunities to access the rail network have the potential to improve journey quality (TPO4). Connectivity (TPO5) could also be improved if the number of services is increased.

Implementability Commentary: The option is considered to be publicly acceptable, particularly by those wishing to use public transport to access centres for employment, education and other key services. The option is also considered to be feasible, although further discussions, including regarding affordability, would be required with relevant stakeholders.

Recommendation: Option recommended to proceed to option packaging.

South of Ayr-Stranraer Strategic Corridor Interventions

Table 7-21: Appraisal of Option AS-1

Ref	AS-1	Title	Full Dualling of the A77
Description	Full dualling of the A77 between Whitletts Roundabout at Ayr to Cairnryan.			

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to contribute to a reduction in journey times to the ports at Cairnryan (TPO1), with safety also improved associated with a higher quality carriageway standard (TPO2). The option could also improve the resilience of the Strategic Transport Network by providing a higher standard of road than the existing single carriageway network, hence potentially reducing the likelihood of full closures in the event of accidents or incidents (TPO3). The option would also be expected to improve journey quality (TPO4) by reducing driver frustration, as reported at present due to limited overtaking opportunities.

Implementability Commentary: While this option would likely be supported by road users, including various stakeholder organisations, with it noted that there is currently a Parliamentary Petition for dualling of the A77, there would likely be challenges from land owners, those residing close to the route and environmental groups due to potential environmental impacts. As a major infrastructure upgrade, this option would constitute a very high cost intervention and there are likely to be a number of feasibility issues.

Recommendation: Although this option addresses many of the TPOs, the potential scale, significant cost and environmental impact of this proposal compared with the other road-based options for this corridor means that this option is not being recommended for further consideration. Given the proximity of the corridor to the coast and the topography, there are likely to be significant engineering challenges which makes the likelihood of offline dualling high, which would result in significant cost and environmental impact.

Table 7-22: Appraisal of Option AS-2

Ref	AS-2	Title	Bypasses of towns and villages on the A77
Description	Introduction of bypasses for towns and villages on the A77, i.e. settlements for which there continues to be urban speed limits.			

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to have a positive impact on journey times (TPO1); due to the number of settlements on the A77 not currently bypassed, journey times could be reduced to the ports at Cairnryan. The option would also be anticipated to contribute to improving the resilience of the Strategic Transport Network (TPO3) by providing additional road capacity that could be utilised in the event of route closure. This option could improve the safety of road users and pedestrians within the settlements by removing traffic from built up areas, hence delivering a positive impact against TPO2. Journey quality could also be improved on the A77 (TPO4) associated with a more consistent journey, avoiding the need for strategic traffic to enter towns and villages.

Implementability Commentary: Based on stakeholder consultation, it is anticipated that this option would be supported, particularly by local residents due to the resulting reduction in traffic through the villages, including heavy goods vehicles, while road users including the freight industry would also likely support this option due to the potential for journey time improvements. However, there may be concern in some settlements e.g. Girvan, associated with potential loss of through business if motorists that currently stop in the towns and villages for rest facilities etc. no longer do so in the event of bypasses being developed. The option would be anticipated to have a high cost and further consideration on feasibility issues would be required to understand the impact of bypass options, including alignments.

Recommendation: Option recommended to proceed to option packaging.

Table 7-23: Appraisal of Option AS-3

Ref	AS-3	Title	Improved overtaking opportunities on the A77
Description	Improvements to deliver increased overtaking opportunities route-wide including potential sections of route dualling, 2+1s and climbing lanes. (Examples highlighted during stakeholder engagement included Drummuckloch to Innermessan and Ardwell to Slockenray).			

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to contribute to reducing journey times to the ports at Cairnryan (TPO1) and reducing accident rates and the severity of accidents (TPO2) by increasing capacity and overtaking opportunities on sections of the A77. Similarly, the option could improve the perceived journey quality along the corridor (TPO4) by increasing overtaking opportunities and, in turn, reducing driver frustration.

Implementability Commentary: As overtaking lanes are already in place at locations on the A77, this option is considered to be technically and operationally feasible and publicly acceptable, though more detailed assessment (including of cost/affordability aspects) would be required.

Recommendation: Option recommended to proceed to option packaging.

Table 7-24: Appraisal of Option AS-4

Ref	AS-4	Title	Improved A77 route standard
Description			Introduction of WS2 (wide single 10m) road standard across single carriageway sections of the A77 to improving consistency and safety.

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to contribute to improving (TPO2) by increasing road standard and consistency. Reducing the number of accidents could in turn improve route resilience (TPO3) by reducing the number of route closures. This option could improve the journey quality along the corridor (TPO4) by reducing driver frustration and providing increased overtaking opportunities.

Implementability Commentary: As this option would be focused on upgrading of the existing carriageway, it is considered to be feasible though more detailed assessment (including of cost/affordability aspects) would be required. It is considered that by enhancing route quality and safety, this option would be publicly acceptable.

Recommendation: Option recommended to proceed to option packaging.

Table 7-25: Appraisal of Option AS-5

Ref	AS-5	Title	Localised A77 improvements to improve safety
Description			Introduction of targeted route improvements to enhance road geometry, remove bends and improve safety on the A77. (Examples highlighted during stakeholder engagement included Stranraer to Ballantrae).

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to contribute to a reduction in accident rates and the severity of accidents on the A77 (TPO2) by potentially enhancing route geometry and removing bends, thus reducing the likelihood of accidents. Any measures which reduce accidents and the likelihood of route closures is anticipated to have a positive impact on route resilience (TPO3). Similarly, measures which improve route standard are anticipated to have a positive impact on journey quality (TPO4). Journey times to the ports at Cairnryan (TPO1) may also improve slightly as a result of improved alignment.

Implementability Commentary: This option is considered to be feasible and publicly acceptable, although further consideration of affordability would be required as specific improvements are examined in more detail.

Recommendation: Option recommended to proceed to option packaging.

Table 7-26: Appraisal of Option AS-6

Ref	AS-6	Title	A77/A751 Junction Improvement
Description			Improvements to the A77/A751 junction with potential options including introduction of a roundabout, smart signals, junction reprioritisation and improved lighting.

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option would be expected to improve safety (TPO2) by providing junction improvements and thus introducing a mechanism to control traffic. Although the option is specific to one junction, given the strategic traffic which passes through the junction and the potential to improve safety and accessibility, the option is considered to have a positive impact on journey quality (TPO4).

Implementability Commentary: This option is considered to be feasible and publicly acceptable; further work would be required to understand cost / affordability aspects of this option.

Recommendation: Option recommended to proceed to option packaging.

Table 7-27: Appraisal of Option AS-7

Ref	AS-7	Title	A77 Junction Improvements
Description			Review of junctions on the A77, including right turns, to improve safety.

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to reduce journey times to the ports at Cairnryan (TPO1), particularly if junctions where vehicles turning right and currently block through traffic are improved (potentially through the introduction of ghost islands). Similarly, removing the potential for right turn manoeuvres on the A77 would be anticipated to improve safety (TPO2) and journey quality (TPO4).

Implementability Commentary: This option is considered to be feasible and publicly acceptable; further work would be required to understand cost / affordability aspects of this option.

Recommendation: Option recommended to proceed to option packaging.

Table 7-28: Appraisal of Option AS-8

Ref	AS-8	Title	Extend Safety Cameras on the A77
Description	Extend the coverage of Safety Cameras on the A77.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option considers the extension of safety camera deployments through the Scottish Safety Camera Programme annual site prioritisation exercise. This option would be anticipated to support improved safety (TPO2) by potentially reducing the number of speeding and overtaking related accidents. Any reduction in the number of accidents could also have a positive impact on route resilience (TPO3) if the route closes less frequently.

Implementability Commentary: On balance, public acceptability of the option is considered to be neutral. Although some people would support the extension of safety cameras due to the potential for accidents to decrease along the route, concerns may be expressed by others with safety cameras potentially increasing driver frustration if they lead to greater platooning and reduced overtaking opportunities. Although safety cameras may be operationally and technically feasible, further assessment of affordability and implementability would be required.

Recommendation: Option recommended to proceed to option packaging.

Table 7-29: Appraisal of Option AS-9

Ref	AS-9	Title	New Lines (rail link between Stranraer and Cairnryan + Station)
Description	Implement a rail link between Stranraer and Cairnryan, including new station at Cairnryan, considering provision for both passengers and freight.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

Providing a direct rail link to Cairnryan has the potential to improve journey times (TPO1) and journey quality (TPO4) for those travelling by rail and a new connection could improve connectivity (TPO5); although this would primarily provide connectivity to/from the ports rather than other key services. The option could also improve the resilience of the network (TPO3) by providing a new direct rail service for travel between Stranraer and Cairnryan.

Implementability Commentary: While some support was expressed for this concept during the stakeholder engagement programme, it was recognised that there would likely be feasibility issues to be addressed in creating a new rail link. The option is also anticipated to have a significant cost and further consideration on the affordability of the option against its anticipated benefits would be required.

Recommendation: Option recommended to proceed to option packaging.

Table 7-30: Appraisal of Option AS-10

Ref	AS-10	Title	New Stations (Dunragit, Pinwherry)
Description	Re-open rail stations at Dunragit and Pinwherry.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

New stations would be anticipated to have a positive impact against journey quality (TPO4) and connectivity (TPO5) for those travelling to/from Pinwherry and Dunragit. New stations could provide a new connection to/from these locations, opening up opportunities to access key services. These options are also considered to have a positive impact against route resilience as a rail connection could be used an alternative to road travel in the event of any road closure. Although new stations could reduce journey times for those using any new station at Pinwherry and Dunragit (TPO1), those boarding a train at any other station on the line could experience longer journey times; as such, this option is considered to have negligible impact on journey times.

Implementability Commentary: The option is considered to be publicly acceptable to communities that would benefit from increased accessibility associated with a new public transport option, although there may be concerns amongst existing bus users should new rail stations lead to any reduction in bus service provision to the community and there may be a lack of support from rail users on other parts of the line should their journey times increase. There is potential for this option to have associated feasibility and affordability issues, which would require more detailed consideration.

Recommendation: Option recommended to proceed to option packaging.

Table 7-31: Appraisal of Option AS-11

Ref	AS-11	Title	South Ayr Station
Description	Development of a new Ayr South station, providing improved access to Ayr Hospital and supporting wider opportunities.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

The provision of a new station south of Ayr has the potential to increase the resilience of the strategic rail network, as the provision of an additional station would provide an alternative option for those wishing to access the rail network (e.g. such as during the recent closure of Ayr Station in 2018). This option would improve connectivity (TPO5) to a key destination, while journey quality would also be improved (TPO4) for users of the hospital wishing to travel by public transport.

Implementability Commentary: The option is considered to be publicly acceptable, and would likely be supported by hospital staff, patients and visitors. Given the proximity of the hospital to the railway, the option is considered to be feasible, although further assessment work, including work related to affordability and funding would be required.

Recommendation: Option recommended to proceed to option packaging.

Table 7-32: Appraisal of Option AS-12

Ref	AS-12	Title	Stranraer Station Relocation
Description	Relocation of Stranraer Station, including consideration of the potential for an integrated public transport hub in the town.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option could improve journey quality (TPO4) as the walking distance between the station and town centre would be reduced. Should a public transport hub be introduced, connectivity to / from the surrounding area would also be improved (TPO5). Difficulties associated with the maintenance of the station at the end of the pierhead also mean that relocating the station could have a positive impact in terms of resilience of the network (TPO3).

Implementability Commentary: This option is considered to be publicly acceptable, with a number of stakeholders suggesting the station should be relocated to a more accessible location, although further work to determine the feasibility and cost of alternative sites would be required.

Recommendation: Option recommended to proceed to option packaging.

Table 7-33: Appraisal of Option AS-13

Ref	AS-13	Title	Freight Hubs (Girvan and Barrhill)
Description	Development of rail freight hubs in Girvan and Barrhill.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to improve the resilience of the Strategic Transport Network (TPO3) as rail freight hubs could provide an alternative to transporting freight by road. The option could also improve journey quality of other motorists using the road network (TPO4) associated with a reduction in slower moving HGVs on the strategic road network. Connectivity (TPO5) could also be improved as the hauliers would be provided with an additional mode choice.

Implementability Commentary: The option is considered to be feasible and publicly acceptable. Further work would be required to understand cost / affordability aspects of this option.

Recommendation: Option recommended to proceed to option packaging.

Table 7-34: Appraisal of Option AS-14

Ref	AS-14	Title	Rail Infrastructure Improvements
Description	Improvements to increase the capacity and operational efficiency of the rail network, including consideration of line electrification and signal upgrades on the GSWL.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to have a positive impact on journey times to the ports at Cairnryan (TPO1) in relation to potential signal upgrades and line electrification; though it is noted rail users would need to travel between Stranraer and the ports by road (or active travel). The option could improve journey quality of rail trips (TPO4) if improvements were to be made to rolling stock and more timetabled opportunities to access the rail network were implemented. Taking potential electrification and signal upgrades into consideration, the resilience of the rail network could be improved (TPO3). Connectivity to key centres could also be improved if the number of services operating was increased (TPO5).

Implementability Commentary: At this stage, the option is considered to be publicly acceptable and technically feasible, although more detailed assessment of the technical and operational feasibility and costs of rail enhancements to the GSWL would be required.

Recommendation: Option recommended to proceed to option packaging.

Table 7-35: Appraisal of Option AS-15

Ref	AS-15	Title	Rail Service Improvements
Description			Increased frequency of services e.g. from Stranraer to Glasgow, services from Stranraer to Prestwick

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

An increase in the number of rail services could improve the resilience of the Strategic Transport Network (TPO3) by providing an alternative to road travel on a more frequent basis. Similarly, an increased number of services could improve connectivity to key destinations (TPO5).

Implementability Commentary: The option is considered to be publicly acceptable, particularly by those wishing to access centres for employment, education and other key services. The option is also considered to be feasible although further discussions, including regarding affordability, would be required with relevant stakeholders.

Recommendation: Option recommended to proceed to option packaging.

Table 7-36: Appraisal of Option AS-16

Ref	AS-16	Title	Rolling Stock Improvements
Description			Upgrade rolling stock to improve operational efficiency and enhance service quality.

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to improve the journey quality of rail trips (TPO4) if improvements were to be made to rolling stock.

Implementability Commentary: The option is considered to be publicly acceptable and is considered to be feasible (with it being noted that rolling stock on the GSWL is currently being upgraded).

Recommendation: Option recommended to proceed to option packaging.

Dumfries-Cumnock Strategic Corridor Interventions

Table 7-37: Appraisal of Option DC-1

Ref	DC-1	Title	Improved overtaking opportunities on the A76
Description			Improvements to deliver increased overtaking opportunities route-wide, including potential sections of route dualling, 2+1s and climbing lanes.

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

Although this option may contribute to a reduction in journey times on the A76 (TPO1), it would not be considered to reduce journey times to the Ports at Cairnryan. However, overtaking opportunities may reduce accident rates and the severity of accidents (TPO2) by increasing capacity and overtaking opportunities on sections of the A76. Similarly, the option could improve the journey quality along the corridor (TPO4) by reducing driver frustration and increasing overtaking opportunities.

Implementability Commentary: As overtaking lanes are already in place at locations on the A76, dependent on the identification of appropriate locations, this option is considered to be feasible and publicly acceptable. More detailed assessment (including of cost/affordability aspects) would be required.

Recommendation: Option recommended to proceed to option packaging.

Table 7-38: Appraisal of Option DC-2

Ref	DC-2	Title	Bypass (Sanquhar and Kirkconnel)
Description			Bypass on the A76 between Sanquhar and Kirkconnel.

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to contribute to improving the resilience of the Strategic Transport Network (TPO3) by providing additional capacity on this part of the corridor which could be used as a diversion in the event of route closure through the villages of Sanquhar and Kirkconnel, and vice versa. This option could improve the safety of road users and pedestrians within the settlements by removing traffic from built up areas, hence having a positive impact against TPO2. Journey quality could also be improved on the A76 (TPO4). Bypassing the settlements would result in motorists not having to reduce their speed to 30mph and the standard of road constructed could potentially be of a higher quality than the existing road, thus further improving journey quality.

Implementability Commentary: The option would be anticipated to have a high cost and further consideration on feasibility issues would be required to understand the impact of the option, including potential alignment impacts. The option is considered to be publicly acceptable.

Recommendation: Option recommended to proceed to option packaging.

Table 7-39: Appraisal of Option DC-3

Ref	DC-3	Title	Localised A76 improvements to improve safety
Description	Introduction of targeted route improvements to enhance road geometry, remove bends and improve safety.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to contribute to a reduction in accident rates and the severity of accidents on the A76 (TPO2) by enhancing route geometry and removing bends, thus reducing the likelihood of accidents. Any measures which reduce accidents and the likelihood of route closures could have a positive impact on route resilience (TPO3). Similarly, any measure which improves the route standard would be anticipated to have a positive impact on journey quality (TPO4). Journey times may also improve slightly as a result of fewer bends and improved alignment.

Implementability Commentary: This option is considered to be feasible and publicly acceptable; further consideration of affordability would be required as specific improvements are examined in more detail.

Recommendation: Option recommended to proceed to option packaging.

Table 7-40: Appraisal of Option DC-4

Ref	DC-4	Title	New Stations (Cumnock, Thornhill)
Description	New rail stations at Cumnock and Thornhill.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to have a positive impact against journey quality (TPO4) and connectivity (TPO5) for those travelling to / from Cumnock and Thornhill. A new station could provide a new connection from these settlements, opening up opportunities to access key services. The option is also considered to have a positive impact on route resilience (TPO3) as a rail connection could be used as an alternative to road travel in the event of road closure. Although a new station could reduce journey times for those using a new station, existing rail users would experience slightly longer journey times.

Implementability Commentary: The option is considered to be publicly acceptable to potential new station users, though there may be a lack of support for users of other stations on the line (who could see an increase in their journey times). There is potential for new stations to have some associated feasibility issues; further work on feasibility, particularly around timetabling and capacity, and affordability would therefore be required (as is being examined in the case of Thornhill through a separate STAG study ongoing at present by SWestrans).

Recommendation: Option recommended to proceed to option packaging.

Table 7-41: Appraisal of Option DC-5

Ref	DC-5	Title	Rail Infrastructure Improvements
Description	Improvements to increase the capacity and operational efficiency of the rail network, including consideration of electrification and passing loops for freight on the Nith Valley line.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

Although this option is considered to have a positive impact on journey times in the Nith Valley, it would not reduce journey times to the ports at Cairnryan (TPO1). The option could improve the journey quality of rail trips (TPO4) if improvements were to be made to rolling stock and more timetabled opportunities to access the rail network were implemented. Taking potential electrification and passing loops into consideration, the resilience of the rail network could be improved (TPO3). Connectivity to key centres could also be improved (TPO5) should the number of services operating increase.

Implementability Commentary: The option is considered to be publicly acceptable and feasible, although more detailed assessment of the technical and operational feasibility of rail enhancements to the GSWL, as well as affordability, would be required.

Recommendation: Option recommended to proceed to option packaging.

Table 7-42: Appraisal of Option DC-6

Ref	DC-6	Title	Rail Service Improvements
Description	Increased frequency of services and timetable changes to support e.g. express services between Dumfries and the Central Belt		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

It is considered that an increase in the number of services could improve the resilience of the Strategic Transport Network (TPO3) by providing an alternative to road travel on a more frequent basis. Similarly, an increased number of services would be expected to improve connectivity to key destinations (TPO5).

Implementability Commentary: The option is considered to be feasible and publicly acceptable, particularly by those wishing to access centres for employment, education and other key services, although further discussions, including regarding affordability would be required with relevant stakeholders.

Recommendation: Option recommended to proceed to option packaging.

Table 7-43: Appraisal of Option DC-7

Ref	DC-7	Title	Rolling Stock Improvements
Description	Upgrade rolling stock to improve operational efficiency and improve journey quality e.g. bi-mode (diesel/electric) trains on the Nith Valley line.			

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

The option is considered to improve journey quality of rail trips (TPO4) if improvements were to be made to rolling stock.

Implementability Commentary: This option is considered to be publicly acceptable and is considered to be feasible (with it being noted that rolling stock on the GSWL is currently being upgraded).

Recommendation: Option recommended to proceed to option packaging.

Dumfries-Lockerbie and Moffat Strategic Corridor

Table 7-44: Appraisal of Option DLM-1

Ref	DLM-1	Title	New Road
Description	Direct road link from Dumfries to the A74(M)			

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option would be anticipated to support improved journey times to the ports at Cairnryan (TPO1) through the provision of a more direct link between the A74(M) and Dumfries. Development of a new, high quality road would also be anticipated to improve road safety (TPO2) and journey quality (TPO4) as the standard of road constructed would be of a higher quality compared to existing roads. This option is also considered to improve connectivity (TPO5). Although a new road between Dumfries and the A74(M) has the potential to improve the resilience of the Strategic Transport Network (TPO3), in the event of one route being closed there are currently other routes which can be used (A701, A709, A75). The option is therefore considered to be negligible against TPO3.

Implementability Commentary: While this option would likely be supported by road users and various stakeholder organisations, there would likely be challenges from land owners and environmental groups due to the potential environmental impact of a new road link. As a major infrastructure upgrade, this option would constitute a very high cost intervention and there are likely to be a number of feasibility issues.

Recommendation: Although this option addresses many of the TPOs, the potential scale, significant cost and environmental impact of this proposal compared with the other road-based options for this corridor means that this option is not being recommended for further consideration.

Table 7-45: Appraisal of Option DLM-2

Ref	DLM-2	Title	Dualling of Existing Roads
Description	Dualling of the A701			

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to contribute to a reduction in journey times to the ports at Cairnryan (TPO1), particularly for those travelling to / from Edinburgh. The option would provide opportunities to overtake slower moving vehicles and as such is considered to help reduce accident rates and the severity of accidents (TPO2). The option could also improve the resilience of the Strategic Transport Network (TPO3) by providing a higher standard of road than the existing single carriageway network, hence potentially reducing the likelihood of full closures. The option could improve journey quality (TPO4) by reducing driver frustration associated with limited overtaking opportunities on the existing single carriageway road. The option is not thought to directly improve connectivity along the corridor (TPO5), although improved resilience, capacity and journey quality could improve perceptions of connectivity.

Implementability Commentary: While this option would likely be supported by road users, there would likely be challenges from land owners, environmental groups and from those residing close to the route due to the potential environmental impact. As a major infrastructure upgrade, this option would constitute a very high cost intervention and there are likely to be a number of feasibility issues.

Recommendation: Although this option addresses many of the TPOs, the potential scale, significant cost and environmental impact of this proposal compared with the other road-based options for this corridor means that this option is not being recommended for further consideration.

Table 7-46: Appraisal of Option DLM-3

Ref	DLM-3	Title	Dualling of Existing Roads
Description	Dualling of the A709		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option would be expected to contribute to a reduction in journey times to the ports at Cairnryan (TPO1). The option would provide enhanced safety (TPO2) and resilience (TPO3) by providing a higher standard of road than the existing single carriageway network, hence potentially reducing the likelihood of full closures when incidents do occur. The option could improve journey quality (TPO4) by reducing driver frustration associated with limited overtaking opportunities on the existing single carriageway road. The option is not thought to directly improve connectivity along the corridor (TPO5), although improved resilience, capacity and journey quality could improve perceptions of connectivity.

Implementability Commentary: While this option would likely be supported by road users, there would likely be challenges from land owners, environmental groups and from those residing close to the route due to the potential environmental impact. As a major infrastructure upgrade, this option would constitute a very high cost intervention and there are likely to be a number of feasibility issues.

Recommendation: Although this option addresses many of the TPOs, the potential scale, significant cost and environmental impact of this proposal compared with the other road-based options for this corridor means that this option is not being recommended for further consideration.

Table 7-47: Appraisal of Option DLM-4

Ref	DLM-4	Title	Improved overtaking opportunities on the A701
Description	Improvements to deliver increased overtaking opportunities on the A701 including potential sections of route dualling, 2+1s and climbing lanes.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to contribute to a reduction in journey times (TPO1) and reducing accident rates and the severity of accidents (TPO2) by increasing capacity and overtaking opportunities on sections of the A701. Similarly, the option could improve the perceived journey quality along the corridor (TPO4) by reducing driver frustration and increasing overtaking opportunities.

Implementability Commentary: This option is considered to be technically and operationally feasible and publicly acceptable; further work would be required to understand cost / affordability aspects of this option.

Recommendation: Option recommended to proceed to option packaging.

Table 7-48: Appraisal of Option DLM-5

Ref	DLM-5	Title	Improved overtaking opportunities on the A709
Description	Improvements to deliver increased overtaking opportunities on the A709 including potential sections of route dualling, 2+1s and climbing lanes.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to contribute to reducing journey times (TPO1) and reducing accident rates and the severity of accidents (TPO2) by increasing capacity and overtaking opportunities on sections of the A709. Similarly, the option could improve the perceived journey quality along the corridor (TPO4) by reducing driver frustration and increasing overtaking opportunities.

Implementability Commentary: This option is considered to be technically and operationally feasible and publicly acceptable; further work would be required to understand cost / affordability aspects of this option.

Recommendation: Option recommended to proceed to option packaging.

Table 7-49: Appraisal of Option DLM-6

Ref	DLM-6	Title	Bypass
Description	Introduction of a Lochmaben Bypass		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to contribute to improved journey times (TPO1) and increased resilience of the Strategic Transport Network (TPO3) by providing an additional route on this part of the corridor which could be used as a diversion in the event of route closure through Lochmaben, and vice versa. This option could improve the safety of road users and pedestrians within the settlement by removing traffic from built up areas, hence potentially having a positive impact against TPO2. Journey quality could also be improved on the A709 (TPO4).

Implementability Commentary: The option would be anticipated to have a high cost and further consideration on feasibility issues would be required to understand the impact of the option, including potential alignment impacts. The option is considered to be publicly acceptable.

Recommendation: Option recommended to proceed to option packaging.

Table 7-50: Appraisal of Option DLM-7

Ref	DLM-7	Title	Local improvements to improve safety and address pinch points
Description			Introduction of targeted route improvements to enhance road geometry, remove bends and improve safety on the A701 and A709, including addressing network pinch-points e.g. St Ann's Bridge (A701)

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to contribute to improved safety on the A701 and A709 (TPO2) by potentially enhancing route geometry and removing bends, thus reducing the potential for accidents. Any measures which reduce accidents and the likelihood of route closures is anticipated to have a positive impact on route resilience (TPO3). Similarly, any measures which improve route standard and consistency is anticipated to have a positive impact on journey quality (TPO4). Journey times to the ports at Cairnryan (TPO1) may also improve slightly as a result of improved route alignment.

Implementability Commentary: This option is considered to be technically and operationally feasible and publicly acceptable; further consideration of affordability would be required as specific improvements are examined in more detail.

Recommendation: Option recommended to proceed to option packaging.

Table 7-51: Appraisal of Option DLM-8

Ref	DLM-8	Title	Junction Improvements
Description			Improvements to the M6 Junction 45, aimed at improving arrangements for vehicles including HGVs that cannot access the junction to the north (resulting in circuitous journeys in the locality and a detrimental impact on the local environment and economy).

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to reduce journey times to the ports at Cairnryan (TPO1) by providing improved accessibility onto the A75 for HGVs. The option may also be anticipated to improve safety (TPO2) by providing improved routing for vehicles. Journey quality (TPO4) may also be enhanced should improvements lead to more direct journeys.

Implementability Commentary: Further work would be required to determine feasibility of this option which, as a major junction on the strategic road network, would likely constitute a high cost option. As the option would be anticipated to improve arrangements for vehicles, it is considered to be publicly acceptable; particularly for HGV drivers.

Recommendation: Option recommended to proceed to option packaging.

Table 7-52: Appraisal of Option DLM-9

Ref	DLM-9	Title	Re-classify existing Roads (A701 and A709)
Description			Re-classification of the existing road network, including potential trunking of the A709 (and detrunking of the A701).

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

Average daily traffic flows on the A709 are higher than flows on the A701 and so consideration has been given to the potential trunking of the A709 and potential de-trunking the A701. As the main change associated with this option would primarily be around funding and maintenance, this option is considered to have a negligible impact the TPOs.

Implementability Commentary: This option is considered to be feasible although further discussions would be required with relevant organisations, including regarding the cost implications. The option is considered to have a negligible impact in terms of public acceptability.

Recommendation: Option recommended to proceed to option packaging.

Table 7-53: Appraisal of Option DLM-10

Ref	DLM-10	Title	New rail link between the GSWL and WCML
Description			Consideration of a direct rail link between Dumfries and Lockerbie, Annan and the WCML (Solway Loop) and other potential links between the Nith Valley Line and WCML.

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	**TP02**	**TPO3**	**TPO4**	**TPO5**

This option is considered to reduce journey times for those travelling between the GSWL and the WCML; however, it is not considered to reduce journey times specifically to the ports at Cairnryan. The option is considered to have a positive impact in terms of resilience of the rail network (TPO3) as a new line could provide an alternative rail link; which would be anticipated to have benefits for travel to/from the Central Belt in particular (as interchange via Carlisle would no longer be necessary). Providing a direct rail link between the GSWL and WCML also has the potential to improve journey quality (TPO4) for those travelling by rail and a new connection could improve connectivity to key services (TPO5), particularly to those services located in the Central Belt.

Implementability Commentary: This option is considered to be publicly acceptable, although there is the potential that residents who live close to any new railway line may not support the option. Further assessment would be required into the technical and operational feasibility of this option, as well as the costs.

Recommendation: Option recommended to proceed to option packaging.

Table 7-54: Appraisal of Option DLM-11

Ref	DLM-11	Title	New Station (Beattock)
Description	New Station at Beattock		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	TP02	TPO3	TPO4	TPO5

This option is considered to have a positive impact against journey quality (TPO4) and connectivity (TPO5) for those travelling to/from Beattock. A new station could provide a new connection to/from Beattock, opening up opportunities to access key services. The option is also considered to have a positive impact against route resilience (TPO3) as a rail connection could be used as an alternative to road travel in the event of road closure. Although a new station could reduce journey times for those using a new station, existing rail users would experience slightly longer journey times.

Implementability Commentary: This option is considered to be publicly acceptable to any potential users of the new station, though there may be a lack of support from users of other stations on the line (who could see an increase in their journey times). There is potential for new stations to have some associated feasibility issues; further work on feasibility, particularly around timetabling and capacity, as well as affordability would therefore be required (as is being examined through a separate STAG study ongoing at present by SWestrans).

Recommendation: Option recommended to proceed to option packaging.

Table 7-55: Appraisal of Option DLM-12

Ref	DLM-12	Title	Improved access to rail services at Lockerbie
Description	Improved access to rail services at Lockerbie through e.g. increased car parking, improved public transport access and improved active travel access.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	TP02	TPO3	TPO4	TPO5

Although this option would not necessarily reduce journey times to/from Lockerbie Station, it could reduce overall journey times by improving access to the station (and onward travel on the rail network). This option could also improve the quality of journeys (TPO4) for a variety of modes, including motorists who may find it easier to locate a parking space and public transport and active travel users who would benefit from improved access. Improvements to public transport and active travel access are also considered to improve connectivity (TPO5).

Implementability Commentary: This option is considered to be feasible and publicly acceptable with a number of stakeholders to the public and stakeholder engagement programme noting the importance of improving access to Lockerbie Station. Further discussions, including regarding affordability, would be required with relevant stakeholders.

Recommendation: Option recommended to proceed to option packaging.

Table 7-56: Appraisal of Option DLM-13

Ref	DLM-13	Title	Increased services from Lockerbie
Description	Increased services from Lockerbie which offers strategically important connections to Glasgow, Edinburgh and Carlisle, including increased evening services and potential to run ScotRail services to Lockerbie.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	TP02	TPO3	TPO4	TPO5

An increase in the number of rail services could improve the resilience of the Strategic Transport Network (TPO3) by providing an alternative to road travel on a more frequent basis. Similarly, an increased number of services would be anticipated to improve connectivity to key destinations (TPO5).

Implementability Commentary: The option is considered to be publicly acceptable, particularly by those wishing to access centres for employment, education and other key services. The option is also considered to be feasible, although further discussions including regarding affordability would be required with rail operators.

Recommendation: Option recommended to proceed to option packaging.

Region-wide Interventions

Table 7-57: Appraisal of Option R-1

Ref	R-1	Title	Development of the Timber Transport Network in the South West of Scotland
Description	Package of measures designed to support the transport of timber freight by road, rail and sea, including development of the road network for timber lorries and assessing the potential development of timber hubs (e.g. Barrhill, Beattock).		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	TP02	TPO3	TPO4	TPO5

Measures which support a reduction in the level of timber transported by road (particularly from the Strategic Road Network) could reduce journey times (TPO1) while improved safety (TPO2) may also be anticipated associated with a reduction in slower moving vehicles on the network (and therefore the potential for vehicle platooning and risky overtaking). As the option may remove timber from the Strategic Road Network, and therefore reduce the number of closures associated with accidents, the option could improve route resilience (TPO3).

Implementability Commentary: This option is considered to be technically feasible, though operational feasibility would be dependent on industry input. Costs could vary significantly depending on specific proposals brought forward and further assessment of affordability would be required as improvements are examined in more detail. This option is considered to be publicly acceptable, particularly if it were to result in a reduction in the number of timber lorries using the strategic road network.

Recommendation: Option recommended to proceed to option packaging.

Table 7-58: Appraisal of Option R-2

Ref	R-2	Title	Improved transport integration at main transport hubs
Description			Package of measures to improve accessibility by active travel and public transport - including physical access, ticketing and timetable integration - at transport hubs across the region including rail stations.

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	TP02	TPO3	TPO4	TPO5

The option is considered to improve the journey quality (TPO4) across the public transport and active travel networks by making it easier for people to access and use public transport and active travel modes. Ticketing and timetable integration is also anticipated to improve public transport journeys. Improving the ease of access to public transport and active travel could improve connectivity (TPO5) from communities to key economic, education, health and cultural centres.

Implementability Commentary: The option is considered to be technically and operationally feasible, though discussions would be required with relevant organisations. The need for improved transport integration, particularly improved bus access to rail stations, was a key theme highlighted during consultation and therefore this option would be expected to be supported by the public. Affordability impacts would require further assessment as specific proposals are taken forward.

Recommendation: Option recommended to proceed to option packaging.

Table 7-59: Appraisal of Option R-3

Ref	R-3	Title	Development of enhanced Diversionary Routes and Route Planning to increase resilience of the South West Scotland transport network
Description			Package of measures and improvements to the secondary road network which performs a strategic function when the trunk road network is closed. Measures could include upgrading local roads which act as diversionary routes as well as an improved approach to raising awareness of diversionary routes.

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	TP02	TPO3	TPO4	TPO5

This option is considered to improve resilience of the Strategic Transport Network (TPO3) by improving the quality of diversionary routes. This in turn could support reduced journey times (TPO1) and help to reduce accident rates and the severity of accidents (TPO2) in the event of the trunk road network being closed (it is noted however that upgraded diversionary routes would likely still have longer journey times compared to trunk roads). Journey quality of diversionary route users could also improve should the quality of the roads be upgraded (TPO4).

Implementability Commentary: As the option relates to the upgrade of existing routes and infrastructure, the option is considered to be feasible and publicly acceptable; further consideration of affordability and funding aspects would be required.

Recommendation: Option recommended to proceed to option packaging.

Table 7-60: Appraisal of Option R-4

Ref	R-4	Title	Development of the Strategic Active Travel Network in South West Scotland
Description			Package of improvements designed to improve cycle infrastructure and connectivity, particularly by bike, in the South West of Scotland.

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	TP02	TPO3	TPO4	TPO5

It is considered that this option would support efforts to improve safety (TPO2) by improving the quality of cycling infrastructure and therefore providing safer conditions for cyclists. The option would also support improved journey quality for cyclists (TPO4) and could potentially improve connectivity to key destinations (TPO5).

Implementability Commentary: At this stage, it is not anticipated that this option would encounter any major acceptability issues and would likely be supported by current and potential new cyclists, while enhancement of the NCN would not be anticipated to encounter significant technical feasibility issues. Further consideration of affordability aspects would be required as specific improvements are examined in more detail.

Recommendation: Option recommended to proceed to option packaging.

Table 7-61: Appraisal of Option R-5

Ref	R-5	Title	Development of Enhanced Service, Rest Areas and Laybys across the South West of Scotland
Description			Package of measures to deliver improved rest provision for all users in the South West of Scotland. Consideration to be given to facilities for HGV rest stops, electric vehicle charging points, tourist facilities and coach layover.

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	TP02	TPO3	TPO4	TPO5

The provision of improved rest area provision would be expected to support improved safety (TPO2) by providing access to areas which all road users, including hauliers, could use in the event of adverse weather or fatigue. Route resilience (TPO3) would also be increased, with rest areas potentially offering e.g. lorry stacking facilities, during periods when routes are closed. Journey quality could also improve (TPO4) if users of a route have an opportunity to split a journey if required. The option may help to reduce journey times (TPO1) by giving areas for slow moving vehicles to pull over, allowing traffic to pass; though this impact is considered to be negligible.

Implementability Commentary: This option is considered to be feasible, though this would be dependent on any future design work including the identification of appropriate, attractive locations for rest area provision. Further consideration of affordability and funding would also be required dependent on the type and scale of facilities proposed.

Recommendation: Option recommended to proceed to option packaging.

Table 7-62: Appraisal of Option R-6

Ref	R-6	Title	HGV Speed Limit Increase
Description	Increase the speed limit for Heavy Goods Vehicles on trunk roads to 50mph.		

High Level Appraisal against Transport Planning Objectives & Implementability Criteria				
TP01	TP02	TPO3	TPO4	TPO5

This option is considered to reduce journey times along the trunk road routes (TPO1), particularly for HGVs, though also for other vehicles due to an anticipated increased average speed along the route. Any reduction in driver frustration and platooning may therefore have a positive impact on safety (TPO2). Similarly, the journey quality of all vehicle types (TPO4) could increase as a result.

Implementability Commentary: This option is considered to be publicly acceptable if it permits motorists to travel at increased speeds, within the speed limit. This option is also considered to be feasible and affordable, with an ongoing HGV 50mph Speed Limit pilot ongoing on the A9. Findings from the HGV speed limit change in England and Wales also have the potential to influence any future decision on this option.

Recommendation: Option recommended to proceed to option packaging.

7.8 Option Packaging

Outcomes from the high level appraisal presented in the previous section demonstrate that each of the options have the potential to meet the TPOs. However, a process of further option sifting has been undertaken based on the likely impacts on the implementability criteria. Through further consolidation / packaging of similar options by route and mode, a final list of **23** options have subsequently been identified. The 23 multi-modal option packages to be taken forward for further assessment are presented in Table 7-63, which includes cross-referencing to demonstrate the specific interventions for further consideration as part of these packages. These packages have been ordered to reflect the sustainable transport hierarchy.

Table 7-63: Final Option Packages

No.	Type	Option Package Description	Interventions
1	Accessibility	**Improved transport integration at main hubs** *Package of measures to improve integration of transport at main transport hubs and interchanges (e.g. Stranraer, Dumfries and Lockerbie), including improved integration of bus and rail times, improved cycle connectivity to rail stations and ticket integration.*	R2
2	Active Travel	**Development of the Strategic Active Travel Network** *Package of measures to develop the Strategic Active Travel Network in the South West of Scotland to better connect communities to key destinations, including cycle paths parallel to trunk roads and improvements to the National Cycle Network.*	R4
3	Public Transport	**New Rail Stations on the Glasgow South Western Line** *New rail stations on the Glasgow South Western Line, such as at Cumnock, Thornhill, Eastriggs, Pinwherry, Dunragit and South of Ayr.*	DC-4, DLM-11, AS-10, AS-11
4	Public Transport	**Enhanced Rail Services on the Glasgow South Western Line** *Package of measures to enhance rail services on the Glasgow South Western Line, such as rail service, rolling stock and infrastructure improvements and Stranraer Station relocation.*	GS-14, AS-12, AS-14, AS-15, AS-16, DC-5, DC-6, DC-7
5	Public Transport	**New Rail Stations on the West Coast Main Line** *New station at Beattock.*	DLM-11
6	Public Transport	**Enhanced Rail Services on the West Coast Main Line** *Package of measures to enhance rail services on the West Coast Main Line, such as increased services operating from and improved access to rail services at Lockerbie, including increased park and ride provision.*	DLM-12, DLM-13
7	Public Transport	**New Rail Link between Dumfries and Stranraer** *Development of a rail link between Dumfries and Stranraer.*	GS-12
8	Public Transport	**New Rail Link between Stranraer and Cairnryan** *Development of a rail link between Stranraer and Cairnryan.*	AS-9
9	Public Transport	**New Rail link between the Glasgow South Western Line and the West Coast Main Line** *Development of a rail link between the Glasgow South Western Line and the West Coast Main Line.*	DLM-10
10	Freight	**Enhanced Rail Freight Capacity** *Enhancement of rail freight capacity, such as freight hubs at Girvan and Barrhill.*	AS-13
11	Freight	**Development of the Timber Transport Network** *Package of measures to support the transport of timber freight by road, rail and sea in the South West of Scotland.*	R1
12	Road	**Development of Enhanced Diversionary Routes and Route Planning** *Package of measures and improvements to the secondary road network which performs a strategic function when the trunk road network is closed to increase resilience of the transport network.*	R3

No.	Type	Option Package Description	Interventions
13	Road	**Development of Enhanced Service, Rest Areas and Laybys** *Package of measures to deliver improved rest provision for all road users in the South West of Scotland, such as truck/lorry stops and rest facilities on the A75 and A77 and enhanced laybys for buses on main routes.*	R5
14	Road	**HGV Speed Limit Increase** *HGV speed limit increase to 50mph on the trunk road network in the South West of Scotland.*	R6
15	Road	**A75 Capacity Enhancements** *Development of capacity enhancement measures on the A75, such as partial dualling, town/village bypasses and improved overtaking opportunities.*	GS-2, GS-3, GS-4, GS-5, GS-11
16	Road	**A75 Safety Measures** *Implementation of targeted measures, such as improvements to road geometry, bends and junction improvements to improve safety on the A75. Package will also include consideration of safety camera deployments through the Scottish Safety Camera Programme annual site prioritisation exercise.*	GS-6, GS-7, GS-8, GS-9, GS-10
17	Road	**A77 Capacity Enhancements** *Development of capacity enhancement measures on the A77, such as partial dualling, town/village bypasses and improved overtaking opportunities.*	AS-2, AS-3, AS-4, AS-5
18	Road	**A77 Safety Measures** *Implementation of targeted measures, such as improvements to road geometry, bends and localised junction improvements to improve safety on the A77. Package will also include consideration of safety camera deployments through the Scottish Safety Camera Programme annual site prioritisation exercise.*	AS-6, AS-7, AS-8
19	Road	**A76 Capacity Enhancements** *Development of capacity enhancement measures on the A76, such as improved overtaking opportunities and town/village bypasses.*	DC-1, DC-2
20	Road	**A76 Safety Measures** *Implementation of targeted measures, such as route improvements to enhance road geometry, bends and junction improvements to improve safety on the A76.*	DC-3
21	Road	**Road Capacity Enhancements between Dumfries and the A74(M)** Development of r*oad capacity enhancements between Dumfries and the A74(M), such as partial dualling which would improve overtaking opportunities, and/or bypasses. Package also potentially includes considering the possibility to re-classify the status of the A701 and A709 roads.*	DLM-4, DLM-5, DLM-6, DLM-9
22	Road	**Road Safety Measures between Dumfries and the A74(M)** *Implementation of targeted measures between Dumfries and the A74(M), such as road geometry, bends, junction improvements and measures to address pinch points.*	DLM-7
23	Road	**Junction Improvements (M6)** *Improvements to the M6 for North to West movements (i.e. coming off the A74(M) north to the A75).*	DLM-8

7.9 Summary

This chapter has described the process undertaken to arrive at a recommended package of options for more detailed development and appraisal work through the preliminary and detailed appraisal stages of STAG undertaken as part of the STPR2 process.

Summary

08

8 Summary and Next Steps

8.1 Summary

This Initial Appraisal: Case for Change report has presented the context for the appraisal of interventions for the South West of Scotland and has considered the rationale for improvements to road, rail, public transport and active travel on the key strategic corridors in the region, with a focus on access to the ports at Cairnryan.

In line with STAG, the study has identified the key transport problems and opportunities in the study area. Evidence-based problems have formed the basis for the development of TPOs and the generation, sifting and development of a wide range of interventions across all modes in the study area, which have subsequently been appraised and packaged.

Based on detailed data analysis and an extensive public and stakeholder engagement programme, a number of problems have been identified around the key themes of:

- Average Journey Times
- Journey Time Reliability
- Environmental Impact
- Safety
- Mobility
- Connectivity
- Cost

The multi-modal problems identified through these exercises have subsequently been mapped against the themes and used to help inform the development of TPOs for the study:

- **TPO1:** Reduce journey times across the strategic transport network in the study area to the ports at Cairnryan.

- **TPO2:** Reduce accident rates and the severity of accidents on the trunk road network in the South West of Scotland.

- **TPO3:** Improve the resilience of the Strategic Transport Network across the South West of Scotland.

- **TPO4:** Improve journey quality across the road, public transport and active travel networks in the South West of Scotland.

- **TPO5:** Improve connectivity (across all modes) for communities in the South West of Scotland to key economic, education, health and cultural centres including Glasgow, Edinburgh, Ayr, Kilmarnock and Carlisle.

Following the development of the TPOs, and a process of option sifting and packaging, 23 multi-modal option packages across the study area were identified for further appraisal through the STPR2 process. As part of the sifting exercise a number of options were sifted out, including local options and options out with the study area. These have been identified for further development by partner organisations and third parties. The options recommended for taking forward for further assessment as part of STPR2 are presented in Table 8-1.

Table 8-1: Recommended Option Packaging for Further Appraisal

Option Package No.	Option Package Description
1	**Improved transport integration at main hubs** *Package of measures to improve integration of transport at main transport hubs and interchanges (e.g. Stranraer, Dumfries and Lockerbie), including improved integration of bus and rail times, improved cycle connectivity to rail stations and ticket integration.*
2	**Development of the Strategic Active Travel Network** *Package of measures to develop the Strategic Active Travel Network in the South West of Scotland to better connect communities to key destinations, including cycle paths parallel to trunk roads and improvements to the National Cycle Network.*
3	**New Rail Stations on the Glasgow South Western Line** *New rail stations on the Glasgow South Western Line, such as at Cumnock, Thornhill, Eastriggs, Pinwherry, Dunragit and South of Ayr.*
4	**Enhanced Rail Services on the Glasgow South Western Line** *Package of measures to enhance rail services on the Glasgow South Western Line, such as rail service, rolling stock and infrastructure improvements and Stranraer Station relocation.*
5	**New Rail Stations on the West Coast Main Line** *New station at Beattock.*
6	**Enhanced Rail Services on the West Coast Main Line** *Package of measures to enhance rail services on the West Coast Main Line, such as increased services operating from and improved access to rail services at Lockerbie, including increased park and ride provision.*
7	**New Rail Link between Dumfries and Stranraer** *Development of a rail link between Dumfries and Stranraer.*
8	**New Rail Link between Stranraer and Cairnryan** *Development of a rail link between Stranraer and Cairnryan.*

Option Package No.	Option Package Description
9	**New Rail link between the Glasgow South Western Line and the West Coast Main Line** *Development of a rail link between the Glasgow South Western Line and the West Coast Main Line.*
10	**Enhanced Rail Freight Capacity** *Enhancement of rail freight capacity, such as freight hubs at Girvan and Barrhill.*
11	**Development of the Timber Transport Network** *Package of measures to support the transport of timber freight by road, rail and sea in the South West of Scotland.*
12	**Development of Enhanced Diversionary Routes and Route Planning** *Package of measures and improvements to the secondary road network which performs a strategic function when the trunk road network is closed to increase resilience of the transport network.*
13	**Development of Enhanced Service, Rest Areas and Laybys** *Package of measures to deliver improved rest provision for all road users in the South West of Scotland, such as truck/lorry stops and rest facilities on the A75 and A77 and enhanced laybys for buses on main routes.*
14	**HGV Speed Limit Increase** *HGV speed limit increase to 50mph on the trunk road network in the South West of Scotland.*
15	**A75 Capacity Enhancements** *Development of capacity enhancement measures on the A75, such as partial dualling, town/village bypasses and improved overtaking opportunities.*
16	**A75 Safety Measures** *Implementation of targeted measures, such as improvements to road geometry, bends and junction improvements to improve safety on the A75. Package will also include consideration of safety camera deployments through the Scottish Safety Camera Programme annual site prioritisation exercise.*
17	**A77 Capacity Enhancements** *Development of capacity enhancement measures on the A77, such as partial dualling, town/village bypasses and improved overtaking opportunities.*
18	**A77 Safety Measures** *Implementation of targeted measures, such as improvements to road geometry, bends and localised junction improvements to improve safety on the A77. Package will also include consideration of safety camera deployments through the Scottish Safety Camera Programme annual site prioritisation exercise.*
19	**A76 Capacity Enhancements** *Development of capacity enhancement measures on the A76, such as improved overtaking opportunities and town/village bypasses.*
20	**A76 Safety Measures** *Implementation of targeted measures, such as route improvements to enhance road geometry, bends and junction improvements to improve safety on the A76.*
21	**Road Capacity Enhancements between Dumfries and the A74(M)** Development of r*oad capacity enhancements between Dumfries and the A74(M), such as partial dualling which would improve overtaking opportunities, and/or bypasses. Package also potentially includes considering the possibility to re-classify the status of the A701 and A709 roads.*
22	**Road Safety Measures between Dumfries and the A74(M)** *Implementation of targeted measures between Dumfries and the A74(M), such as road geometry, bends, junction improvements and measures to address pinch points.*
23	**Junction Improvements (M6)** *Improvements to the M6 for North to West movements (i.e. coming off the A74(M) north to the A75).*

8.2 Next Steps

The purpose of the Preliminary Options Appraisal would be to undertake a qualitative appraisal of the recommended options from the Initial Appraisal. This would include an assessment of:

- The likely impacts of the options against the Transport Planning Objectives developed for STPR2;

- The likely impacts of the options against STAG criteria [i.e. Environment, Safety, Economy, Integration, and Accessibility and Social Inclusion];

- Options appraisal against established policy directives; and

- Feasibility, affordability and public acceptability of options.

This will be considered through the STPR2 process.

Appendix A – Policy Review

Table A-1: Policy Review

Document	Purpose	Objectives	Key Points of Relevance
National			
A Nation with Ambition: The Government's Programme for Scotland 2017-18[1] *Scottish Government, 2017*	In September 2017, the Scottish Government published the Programme for Government setting out the ambition to build a modern, dynamic, open economy which benefits everyone in Scotland.	The Programme highlights the importance of major transport infrastructure investment projects to support the economic health of the nation by increasing productivity and the growth of key sectors throughout the country, while meeting the expectations of the travelling public.	The Programme outlines the Government's commitment to examining improvements in transport links in the South West of Scotland, indicating that it shall *"…commence work for the second Strategic Transport Projects Review in the Dumfries and Galloway area. This will include looking at the access to the ports at Cairnryan"*. The South West Scotland Transport Study responds to this commitment.
Protecting Scotland's Future: The Government's Programme for Scotland 2019-20[2] *Scottish Government, 2019*	In September 2019, the Scottish Government published the Programme for Government 2019-20. Guided by Scotland's National Performance Framework, it outlines that the Scottish Government will act to improve the wellbeing of the people of Scotland and secure a positive future for generations to come. The overall purpose is "To focus on creating a more successful country with opportunities for all of Scotland to flourish through increased wellbeing and sustainable and inclusive economic growth".	The Programme for Government is split into four broad sections: Ending Scotland's Contribution to Climate Change; A Successful, Fair and Green Economy; Improving Outcomes Through Our Public Services; and Communities Where Everyone is Values, Protected and Respected.	An acknowledgement by the Scottish Government in April 2019 that there is a Climate Emergency is strongly reflected in the PfG, which sets out some of the next steps on Scotland's journey to net zero emissions. It is noted that transport is Scotland's largest greenhouse gas emitting sector and sets out a number of transport related schemes / policies, such as investing over £500 million in improved bus priority infrastructure, phasing out petrol and diesel cars by 2032 and providing additional support for ULEVs. There are also ambitions to decarbonise Scotland's railways by 2035. At the South West Scotland level, the Programme states that opportunities will be identified across the rural rail network in the south west to exploit the value of those

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[1] A Nation with Ambition: The Government's Programme for Scotland 2017-18 (available at: https://www.gov.scot/Resource/0052/00524214.pdf)
[2] Protecting Scotland's Future: The Government's Programme for Scotland 2019-20 (available at: https://www.gov.scot/binaries/content/documents/govscot/publications/publication/2019/09/protecting-scotlands-future-governments-programme-scotland-2019-20/documents/governments-programme-scotland-2019-20/governments-programme-scotland-2019-20/govscot%3Adocument/governments-programme-scotland-2019-20.pdf)

			lines for the benefit of local communities, notes that work has begun on the Maybole Bypass and makes reference to the Ayrshire Growth Deal.

Draft National Transport Strategy 2 [3]
 	
Transport Scotland, 2019
	Scotland's National Transport Strategy (NTS) was published in December 2006 to act as an enabler of economic growth, supporting businesses in achieving their local, national and international objectives. A 2016 refresh considered the progress made in the previous ten years.
	
	A new Draft NTS2 was published in summer 2019 and includes the vision "We will have a sustainable, inclusive and accessible transport system, helping deliver a healthier, fairer and more prosperous Scotland for communities, businesses and visitors".
	
	This Strategy is for all of Scotland, recognising the differences between cities, towns, remote and rural areas and islands. It draws heavily on the latest evidence and has been developed through a collaborative approach involving a wide range of partners. An extensive engagement exercise involving individuals, businesses and third sector organisations has been essential in the Strategy's development.
		The Vision is underpinned by four Priorities, which in turn are supported by 12 Outcomes:
		• Promotes equality
		   o Will provide fair access to services we need
		   o Will be easy to use for all
		   o Will be affordable for all
		• Takes climate action
		   o Will adapt to the effects of climate change
		   o Will help deliver our net-zero target
		   o Will promote greener, cleaner choices
		• Helps our economy prosper
		   o Will get us where we need to get to
		   o Will be reliable, efficient and high quality
		   o Will use beneficial innovation
		• Improves our health and wellbeing
		   o Will be safe and secure for all
		   o Will enable us to make healthy travel choices
		   o Will help make our communities great places to live
			Although the NTS does not specifically reference key routes in the study area, it is important that the Vision, Priorities and Outcomes outlined in the Strategy are taken into consideration as the study progresses. Interventions identified in South West Scotland should support the NTS objectives.
			
			NTS2 also outlines the Sustainable Transport Hierarchy, whereby modes at the top of the hierarchy (walking and wheeling) are promoted first and foremost in decision making, followed by prioritising Cycling, Public transport, Taxis & shared transport and Private car.
			
			At the national level the Sustainable Investment Hierarchy will be used to inform budgetary decisions and will consider: investment aimed at **reducing the need to travel unsustainably**; investment aimed at **maintaining and safely operating existing assets** taking due consideration of the need to adapt to the impacts of climate change; investment promoting a range of measures, including innovative solutions, **to make better use of existing capacity**, ensuring that existing transport networks and systems are fully optimised (these may include technology based, regulatory, fiscal or value engineering solutions to asset renewals); and investment involving **targeted infrastructure improvements.**

Strategic Transport Projects Review [4]	Transport Scotland undertook the Strategic Transport Projects Review (STPR) in 2009. As part of the review, it stated that in order to	One of the Draft Investments detailed in STPR specific to the study area is 'Intervention 11 – Targeted Programme of Measures to Improve Links to the Loch Ryan Port Facilities	Key points highlighted in STPR included: • Strategic access to Northern Ireland is highlighted as being relatively poorly connected by both the

[3] Draft National Transport Strategy 2 (available at: https://www.transport.gov.scot/media/45149/national-transport-strategy-draft-for-consultation-july-2019.pdf)
[4] Strategic Transport Projects Review (available at: https://www.transport.gov.scot/media/26366/j11260a.pdf)

Transport Scotland, 2009	ensure Scotland's transport system is fit for the demands placed upon it; plans must be made for all types of future improvement. The report defines the key strategic transport issues that were identified during the review process, and outlines the transport investments which most effectively support the Scottish Government's stated purpose. It is to be noted that outcomes from the South West Scotland Transport Study will feed into STPR2.	from the Trans European Network'. This committed to improve measures such as: • Physical works aimed at providing safer overtaking opportunities such as 2+1 sections, climbing lanes and overtaking lay-bys and improvements to the operation of junctions around Dumfries; • Improvements to the strategic access around Stranraer (A751); and • Driver Information System. It is envisaged that individual elements would be delivered in a targeted programme to improve journey time reliability for travel to port facilities to Loch Ryan. The physical works aspect of this intervention would improve journey time reliability by addressing additional constraints along the route. This would result in efficiency gains for freight traffic travelling to and from the Loch Ryan ports.	A77 and A75. • The A77 was identified as a targeted road quality improvement, highlighting it as an important link to the ferry ports and Prestwick Airport. • Local road improvements were listed as part of a programme of improvements, including road widening, lay-bys, climbing / overtaking lanes, possible grade separation at key junctions and local bypasses for significant towns on the route. • Targeted investment in local interventions on the A76 was also noted.
Infrastructure Investment Plan[5] *Scottish Government, 2015*	The Infrastructure Investment Plan sets out priorities for investment and a long term strategy for the development of public infrastructure in Scotland. It sets out why the Scottish Government invests, how it invests and what it intends to invest in over the 2015 spending review period and beyond.	No specific objectives have been identified for the Plan, but it does list how it contributes to making Scotland "*the place (the Scottish Government) want it to be*", including: • A Stronger Fairer Scotland; • A Strong Sustainable Economy; • Protecting and Reforming our Public Sector; and • Strengthening our Communities.	The document details a number of pipeline projects associated with the Plan including A77 Maybole Bypass (at construction stage at the time of writing) with the key objective of maintaining links to the Irish sea ports at Cairnyan and improving the quality of life within the town.
National Planning Framework 3[6] *Scottish Government, 2014*	The NPF3 sets out the long-term vision for the spatial development of Scotland and is the spatial expression of the Government Economic Strategy. Work has also started to prepare the fourth NPF (NPF4) which will look to Scotland in 2050.	Outlines the Scottish Government's vision for Scotland. • A successful, sustainable place. We have a growing low carbon economy which provides opportunities that are more fairly distributed between, and within, all our communities. We live in high quality, vibrant and sustainable places with enough good quality homes. Our living environments foster better health and we have reduced spatial inequalities in well-being. There is a fair distribution of opportunities in cities, towns and rural areas, reflecting the diversity and strengths of our unique people and places. • A low carbon place. We have seized the opportunities arising from our ambition to be a world leader in low carbon energy generation, both onshore and offshore. Our built environment is more energy efficient and produces less waste and we have largely decarbonised our travel. • A natural, resilient place. Natural and cultural assets are	Within the NPF3, Dumfries is recognised as a gateway town and the regional capital of the south west of Scotland. Tourism, food and drink and primary industries will continue to be important for Dumfries. Wider opportunities for economic growth are also likely to be located along the A74 Corridor. Stranraer and Cairnryan are Scotland's gateway to Northern Ireland. Since relocation of the ferry terminal from the centre of Stranraer, regeneration plans for the waterfront have become of critical importance to the town and wider region. NPF3 also notes the following in relation to the ports at

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[5] Infrastructure Investment Plan (available at: https://www.gov.scot/Resource/0049/00491180.pdf)
[6] National Planning Framework 3 (available at: https://www.gov.scot/Resource/0045/00453683.pdf)

		respected; they are improving in condition and represent a sustainable economic, environmental and social resource for the nation. Our environment and infrastructure have become more resilient to the impacts of climate change. • A connected place. The whole country has access to high-speed fixed and mobile digital networks. We make better use of our existing infrastructure and have improved internal and international transport links to facilitate our ambition for growth and our commitment to an inclusive society.	Cairnryan and the A75 and A77: *"It is important that the momentum gained from designating Port Facilities at Loch Ryan as a national development in NPF2 is not lost – following opening of the new facilities in 2011, targeted interventions are being made to improve the A77 and A75…the A75 is a Euroroute, providing a vital link from Northern Ireland across the region to the rest of Scotland, England and Europe."*
Scotland's Economic Strategy[7] *Scottish Government, 2015*	Scotland's Economic Strategy reaffirms the Scottish Government's commitment to creating a more successful country through increasing sustainable economic growth. The Strategy presents an overarching framework based on two key pillars: increasing competitiveness and tackling inequality. The Strategy recognises that increasing Scotland's economic performance requires development of the human capital and productivity of the workforce, to invest in Scotland's infrastructure and to increase the ability of people to participate in the labour market. In addition to increasing competitiveness, the Strategy outlines the importance of addressing inequality to create the conditions to deliver sustainable economic growth over the long term.	The approach to delivering sustainable economic growth is characterised by four key priorities: • An economy where growth is underpinned by long-term sustainable investment in people, infrastructure and assets; • An economy where growth is based on innovation, change and openness to new ways of doing things; • A society that promotes inclusive growth and creates opportunity through a fair and inclusive jobs market and regional cohesion to provide economic opportunities across all of Scotland; and • A country with an international outlook and focus, open to trade, migration and new ideas.	A central feature of the Strategy is the approach to supporting investment. As set out in the Strategy, infrastructure investment attracts business investment, stimulates economic activity and deepens access to the labour market. Physical and digital infrastructure improves connectivity between cities, towns and regions, helping to drive growth and competitiveness. It is in this context that the Strategy outlines the Government's commitment to investment in transport and the benefits that major projects will deliver. The Strategy notes that significant variations exist in levels of economic activity across Scotland. For example, average GVA output per person in Edinburgh is £38,000 compared to approximately £16,000 in Dumfries and Galloway which is also lower than the Scottish average of £20,000.
Strategic Road Safety Plan[8] *Transport Scotland, 2016*	The Strategic Road Safety Plan sets out the Scottish Government's priorities and key actions to support implementation of a Safer Systems Approach to road safety and in doing so contributing to delivery of the national 2020	The Framework's strategic aims are: • Helping to join up the strands of road safety across Scotland's delivery partners, so as to work more effectively; • Reinforcing the message of all road users' responsibility for their own safety and that of others;	The Strategic Road Safety Plan promotes a Safer Systems approach to improving road safety based on the five pillars of: • Road safety management; • Road infrastructure; • Safe vehicles;

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[7] Scotland's Economic Strategy (available at: https://www.gov.scot/Resource/0047/00472389.pdf)
[8] Strategic Road Safety Plan (available at: https://www.transport.gov.scot/media/10323/ts_strategic_road_safety_plan_2016_digital_sep_2016.pdf)

	Casualty Reduction targets.	• Reducing the tolerance of risk on the roads; and • Upholding the rights of all road users to expect safe road travel.	• Road User behaviour; and • Post-crash response. It outlines a number of potential interventions that should be considered in seeking to improve the safety of all road users, including vulnerable groups. Options designed to improve road safety in the study area should be developed in line with this approach.
Scotland's Railways[9] *Transport Scotland, 2006*	The document sets out Transport Scotland's twenty year plan for potential interventions over the short, medium and longer term to ensure that Scotland's railway network continues to improve. The purpose of the document was to: • Summarise the evidence base relating to our railways. • Set out the key challenges ahead. • Set out our vision for rail in Scotland. • Set out how we will deliver that vision.	The document has high level objectives: • To promote economic growth by focusing on the rail network moving large volumes of people quickly and reliably within and between city regions as a priority. • To protect the environment and improve health by recognising the role of rail as an integral part of Scotland's National Transport Strategy and the contribution rail makes to a sustainable, efficient and effective transport system which minimises the impact of travel on the environment.	In the context of the South West Scotland rail network, the Strategy provides an implementation plan related to the development of Anglo-Scottish Routes and Rural Routes. This includes the following in relation to the study area: *Anglo-Scottish Route* • Capacity enhancements on the Glasgow and South Western route to assist freight movements. (Short term) *Rural Routes* • Improvements to class 156 trains for passengers using South Western services. (Short term) • Revise train services in the light of changing travel patterns and markets including tourism developments. (Short term) • Take advantage of synergies with upgrade of Glasgow and South Western (GSW) route to improve passenger service journey times to Carlisle. (Medium term) It is noted that promoting social inclusion is a driver of rural routes, as is economic growth through tourism.
Scotland Route Study[10] *Network Rail, 2016*	The purpose of the Route Study is to provide an evidence base that will inform funders in Scotland when considering rail industry investment choices for Control Periods 6 and 7	Key strategic themes of the Study: • Defining what capacity is available, based on current and future expectations of what passengers and freight customers are likely to require. • Optimising timetables to make the most of the network	Within the Route Study, the route between Glasgow and Carlisle via Dumfries and the Stranraer line between Ayr and Stranraer are defined as Rural Markets. A high-level summary of Scotland Market Study results for rural

[9] Scotland's Railways (available at: https://www.webarchive.org.uk/wayback/archive/20180517074111/http://www.gov.scot/Publications/2006/12/04104648/12)
[10] Scotland Route Study (available at: https://cdn.networkrail.co.uk/wp-content/uploads/2016/11/Scotland-Route-Study.pdf)

	between 2019 and 2029.	as it is today. • Enhancing train lengths as a first step to meeting capacity requirements where possible. • Segregating different types of traffic where possible to remove capacity constraints. • Taking advantage of planned renewals to ensure that the enhancements that are required deliver maximum value for money. • Taking a whole-life, whole-industry view of the enhancements. • Taking an overall corridor view to ensure that individual enhancements deliver outputs in a way that delivers benefits as early as possible, given the requirement to deliver good value for money.	markets show that Compound Annual Growth Rate (2012-23) will be 4.4% across future economic scenarios. In terms of network improvements relevant to the study area, proposed gauge enhancements to the West Coast Main Line to Grangemouth and Glasgow to Carlisle via Dumfries are proposed. This offers the opportunity for more efficient freight operations and enables operators to better meet freight demand. The Route Study also highlighted that consultation noted the importance of the GSWL as an alternative route to the WCML for cross-border trains whenever there is disruption on one of the lines. Respondents also identified line speed improvements and enhanced freight capability as key aspirations for lines serving rural areas, particularly the Stranraer Line.
Regional			
Regional Transport Strategy[11] *SWestrans, 2008*	The purpose of the RTS is to determine and deliver better transport solutions, both regionally and nationally, and to act as a catalyst for regeneration of the region's economy. Interventions are designed to support SWestrans vision for "*a transport system for the South West of Scotland that delivers the internal and external connectivity required to sustain and enhance the region's economy and communities whilst minimising the impact of transport on the environment.*"	The objectives of the RTS are as follows: • Improve transport links within Dumfries and Galloway and provide fast, safe and reliable journey opportunities to significant markets, including the national economic centres of Edinburgh and Glasgow, as well as northern England and Ireland; • Contribute to improved economic growth and social inclusion in the region whilst minimising the environmental impacts of transport; • Support the national transport target of road traffic stabilisation; • Add value to the broader Scottish economy and underpin increased sustainable national economic growth; • Assist in getting visitors/tourists to the region from other parts of Scotland, England, Ireland and beyond; • Making it possible for more people to do business in and from Dumfries and Galloway by providing sustainable connections to key business centres in the Central Belt and other locations such as Ayrshire and Cumbria; • Support vibrant places that provide employment,	The RTS provides an overview of the transport network in the region and plays an important role in providing context and an evidence base for the South West Scotland Transport Study. Though it is noted that the RTS dates from 2008, a number of the issues remain relevant. In line with the RTS and other regional and local plans, the Council has produced the plan, "*Dumfries and Galloway Council's Priorities in Lobbying for Transportation Infrastructure Developments and Transportation Service Improvements within Dumfries and Galloway*". This document outlines a number of interventions across all modes for action and implementation over the short, medium and long-term which have been considered as part of this study.

[11] South West of Scotland Transport Partnership, Regional Transport Strategy, June 2008 (available at: http://swestrans.org.uk/9691)

		healthcare, educational and other services that people need and want, so that their quality of life is maximised; • Reduce the constraint of peripherality, both between the region's main settlements and its outlying areas, and between the region and its external markets; • Capitalise on improvements to critical long-distance corridors to create new transport services, nodes and development opportunities for Dumfries and Galloway; • Pursue certain transport schemes in the context of local and national economic development, while at the same time recognising wider context of economic, social and environmental imperatives.	
A Catalyst for Change – The Regional Transport Strategy for the West of Scotland 2008 – 21[12] *Strathclyde Partnership for Transport, 2008*	The document sets out SPTs vision for transport, the goals they share with partner organisations, transport objectives, strategic priorities for transport and the indicators they will use to measure delivery of the Strategy's implementation.	SPT's RTS sets out the following transport objectives: • Safety and Security: To improve safety and personal security on the transport system. • Modal Shift: To increase the proportion of trips undertaken by walking, cycling and public transport. • Excellent Transport System: To enhance the attractiveness, reliability and integration of the transport network. • Effectiveness and Efficiency: To ensure the provision of effective and efficient transport infrastructure and services to improve connectivity for people and freight. • Access for All: To promote and facilitate access that recognises the transport requirements of all. • Environment and Health: To improve health and protect the environment by minimising emissions and consumption of resources and energy by the transport system. • Economy, Transport and Land-use Planning: To support land-use planning strategies, regeneration and development by integrating transport provision.	SPT's RTS covers the East Ayrshire and South Ayrshire parts of the study area. In detailing the strategies outcomes and priorities, it sets out principles which this study will take into consideration. It is also to be noted that, at the time of writing, SPT are embarking on the refresh of its RTS. It is anticipated that analysis and key findings of relevance to parts of the study area that lie within SPT's remit are shared to inform the development of the Strategy.
Freight Strategy for Strathclyde[13] *Strathclyde Partnership for Transport, 2018*	The Strategy sets the context for freight in Strathclyde and outlines proposals over the short, medium and long term to promote the safe and efficient movement of freight transport across the region.	The Freight Strategy outlines six ambitions as follows: • Improve air quality and environment; • Increase the safety of freight movement; • Encourage and facilitate intermodal freight movement; • Enhance quality of life and well-being; • Facilitate and support economic competitiveness; and • Enable communication.	While the Strategy is primarily focused on the Strathclyde region, reference is made to the importance of efficient routes to Cairnryan for freight and it is noted that research revealed the routes to the Cairnryan port via the A75 and A77 are unable to cope with the current levels of freight traffic. The Strategy identifies a wide range of potential

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[12] A Catalyst for Change – The Regional Transport Strategy for the West of Scotland 2008 – 21 (available at: http://www.spt.co.uk/wmslib/Documents_RTS/catalyst_for_change.pdf)

[13] Freight Strategy for Strathclyde available at: (http://www.spt.co.uk/wmslib/Documents_RTS/Action_Plans/Freight-Strategy.pdf)

			interventions to improve the efficiency of freight movements, a number of which may be considered as part of this study. Options include
			- Development of schemes to improve road safety, including schemes such as the Community and Logistics Freight Operator Cycle Safety Scheme and the Fleet Operator Recognition Scheme; - Lorry Parking Review; and - Initiatives to encourage intermodal freight movements.
Ayrshire Freight Strategy[14] *Ayrshire Roads Alliance, 2016*	SPT, North Ayrshire Council and Ayrshire Roads Alliance developed this strategy to provide a strategic road network and freight access strategy to key freight locations along with an associated signing strategy. The strategy seeks to identify opportunities to provide HGV parking and examine options for transport hubs for freight transfer or local distribution.	The objectives of the strategy are as follows: - To facilitate the sustainable transport of freight across and within Ayrshire; - To serve key freight generators and attractors with appropriate and robust transport networks; and - To develop and maintain a strategic freight route hierarchy.	The priority for the Freight Strategy is to ensure that the main freight generators and attractors are linked by a suitably robust transport network that is fit for purpose and meets the needs of each individual location. Each location has its own access and specific freight requirements that must be considered and planned for. Ports and airports in the region are regarded as gateways for both Ayrshire and the West of Scotland as they provide access for both the importing and exporting of goods – the need for reliable and efficient transport links is therefore important.
Dumfries & Galloway Transport Summit – Final Report[15] *Transport Scotland, 2016*	The Summit discussed the role of transport and associated infrastructure to support the economy and communities in Dumfries and Galloway.	No specific objectives were developed as part of the Summit. However, a cross section of individuals and organisations were invited to attend the Summit, which ensured a focussed discussion took place about the role of transport and associated infrastructure.	The summit was held following a commitment by the Deputy First Minister to hold a Transport Summit in the South West of Scotland within 100 days of a new Scottish Government. The report provides a summary of the main issues and options highlighted at the summit. Potential options include: - Improving single carriageway A75 and A77 roads, leading to the Loch Ryan ports. - To install average speed cameras on the A75 in Springholm and Crocketford in the short term. - Dual A75 road with consideration of new Euro-Route roads. - Re-open stations at Beattock, Eastriggs and Thornhill. - Electrification of Nith Valley Line.

[14] Ayrshire Freight Strategy: Effective Movement, Peter Brett, March 2016

[15] Dumfries & Galloway Transport Summit – Final Report (available at: https://www.transport.gov.scot/media/10063/dumfries-and-galloway-transport-summit-final-report-4.pdf)

			• Allow Dumfries & Galloway to act as a PSV Bus Operator. • Improve the co-ordination between bus and train services. • Increase overall affordability and frequency of the bus service. • Improve access to healthcare • Improve cycling & active travel modes infrastructure.
Ayrshire Transport Summit[16] *All Ayrshire Alliance, 2018*	Summit held in Kilmarnock organised by the Ayrshire Growth Deal team to outline the potential for Ayrshire and how investment in an improved transport network will help achieve this, with transport recognised as key to a "*vibrant Ayrshire*" in transforming the local economy.	No specific objectives were developed as part of the Summit. The event provided the opportunity for a focussed discussion on the role of transport and associated infrastructure to support the economy and communities of Ayrshire and Arran. Through a series of workshops, initial views were sought at the summit from a broad spectrum of individuals and organisation on the multi-modal strategic transport problems and opportunities facing Ayrshire and Arran.	While it is to be noted that the scope for the Summit was Ayrshire and Arran and therefore includes large areas out with the scope of the South West Scotland Transport Study, the summit did highlight a number of problems relevant to the study area, including: • The lack of integration between public transport, particularly in rural areas, which adversely impacts access to public facilities and employment opportunities. • The Glasgow and South Western Line (GSWL) is considered sub-optimal for passenger trips to England, with slow journeys, infrequent services and aged rolling stock. • Lack of early buses in morning impacts on access to employment. • The high infrequency of bus services in some villages (with instances of two services per day), leads to extremely long journeys. • In general it was considered that there is a poor rail service in South West Scotland, and there would be economic benefits if better links to England were established. • The A76 south of Sanquhar is in very poor condition. • Several ports on the west coast of the UK (including, Heysham, Liverpool, Holyhead and Pembroke Dock) have recently benefitted from significant improvements in their strategic transport connectivity, with it being noted by numerous delegates that Ayrshire is being 'left behind' in this respect. • The A77 south of Ayr is not fit for purpose given the level of trade traffic to/from Northern Ireland which passes through the port.

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[16] Ayrshire Transport Summit – Draft Event Summary Ayrshire Growth Deal, SYSTRA March 2018

			The outputs from the summit will in turn form part of the consultation process to assist in scoping the Regional Transport Appraisal as part of the Ayrshire Growth Deal.
Dumfries & Galloway Regional Economic Strategy 2016 - 2020[17] *Dumfries & Galloway Council*	The Regional Economic Strategy was developed to ensure that the strategic economic priorities for the region are clearly identified and that interventions to support these are prioritised by all partners involved. The Strategy is founded on the key principle of addressing inequality through economic growth and adopts a vision that *"By 2020, Dumfries and Galloway will have a more diverse and resilient economy. One which is capable of taking advantage of opportunities by combining an appropriately skilled workforce and connected infrastructure to support more prosperous and inclusive communities where every member of every community has equality of access to that prosperity."*	The document includes six strategic objectives; the main objectives of relevance are: • Developing Places: Empower the region's communities to address their distinct economic challenges and opportunities; • Better Skills, Better Opportunities: Create a vibrant culture of opportunity in the region to retain and attract people of working age and improve the competitiveness of individual businesses; • Well Developed Infrastructure: Enhancing regional connectivity, removing barriers to business competitiveness and improving access to economic opportunities for individuals and businesses; and • Investment Projects: Large investment projects that will make a significant impact on the regional economy.	The Strategy provides an overview of the economic challenges Dumfries and Galloway faces thus providing useful context for this Pre-Appraisal study. The document notes that economic opportunities are strengthened given that parts of the region have good links to the strategic transport network, including connectivity to the A74(M) in the west and the west of the region linked to Northern Ireland by ferry ports at Cairnyan. However, the need to invest in effective transport links is identified as key to strengthening regional connectivity.
Dumfries and Galloway Regional Tourism Strategy 2016-2020[18] *Dumfries & Galloway Council*	The Regional Tourism Strategy is based upon a partnership approach between public, private and community stakeholders to jointly influence, guide change and grow the value, volume and resilience of the tourism sector in the region.	The Strategy adopts the vision that *"By 2020 Dumfries and Galloway will be the destination of choice for quality, value and memorable experiences delivered by skilled and passionate hosts".*	The Strategy states that tourism is worth £302 million to the local economy and identifies the importance of transport infrastructure that is fit for purpose and customer needs. The Strategy recognises the importance of "*working with transport providers to develop growth of passenger visits and local partnership tourism products to enhance connectivity*" and recognises the tourism opportunities afforded by improved active travel provision.

[17] Dumfries & Galloway Regional Economic Strategy 2016 – 2020 (available at: http://scottishtourismalliance.co.uk/uploads/Destinations/Dumfries%20and%20Galloway%20Regional%20Tourism%20Strategy%202016-2020%20-%20Final.pdf)
[18] Dumfries and Galloway Regional Tourism Strategy 2011-2016, Dumfries and Galloway Council (available at: https://www.dumgal.gov.uk/media/19228/Regional-Tourism-Strategy-2016-20/pdf/Dumfries___Galloway_Regional_Tourism_Strategy_2016-2020.pdf?m=636592281054800000)

Ayrshire Growth Deal, Heads of Terms Agreement[19] *UK Government, Scottish Government, East Ayrshire Council, North Ayrshire Council, South Ayrshire Council, 2019*	The Heads of Terms document commits the Scottish Government and UK Government to work collaboratively with the local authorities and other Ayrshire regional partners to deliver a Deal that will help transform the Ayrshire economy. The Scottish Government will invest up to £103 million over 10 years, and the UK Government will invest up to £103 million over 15 years, subject to approval of final business cases for each project outlined in the Agreement.	The Ayrshire Growth Deal will help drive inclusive economic growth across the region. The Deal will enable the creation of new high quality jobs and opportunities across Ayrshire, which will help secure the future prosperity of its many communities.	A particular point of relevance from the Ayrshire Growth Deal is the regional transport appraisal. This will inform the review of emerging NTS policies and the work on STPR2 and ensure that appropriate consideration is given to Ayrshire's transport infrastructure and the Growth Deal projects when setting the regional and national policy and intervention priorities.
Borderlands Inclusive Growth Deal[20]	The Borderlands Partnership brings together the five cross-border local authorities of Carlisle City Council, Cumbria County Council, Dumfries and Galloway Council, Northumberland County Council and Scottish Borders Council to promote the economic growth of the area that straddles the Scotland-England border. £345 million worth of funding has been announced by the UK and Scottish Governments and at the time of writing it is anticipated a Heads of Terms Agreement will be agreed in 2019.	The Borderlands Inclusive Growth Proposition seeks to deliver the shared ambition to play a full part in the Scottish and wider UK economy through the development of five 'Strategic Growth Corridors', locally supplied with clean low carbon energy, driven by the latest in digital technology.	The Borderlands Initiative sets out a number of regional priorities to support inclusive growth. Under the theme of Transport and Connectivity, priorities are focused on ensuring the region has appropriate physical and digital infrastructure to connect people and places. The Initiative states that it will promote and lobby for investment in roads, rail, and digital assets to make the Borderlands the most connected rural region in the UK. Potential projects as part of the Growth Deal include: • Borderlands Railway Extension – Feasibility Study • Road projects, including A75, A7 and A77 • Junction 45-M6, Fast-link onto M74 • Rural Bus Services • Electric Cars and Charging Network • Integrated and Smart Ticketing • Place based projects, including the redevelopment of Chapelcross former power station and Mountain Bike Innovation Centre in the Scottish Borders
Local			
Dumfries & Galloway Local	The Dumfries & Galloway LTS sets out Council's Action Plan for transport in the area	The LTS has five strategic objectives, as follows: • Assist Economic Growth through the provision of the	The LTS outlines a strategy which balances demand management and the promotion of alternative modes of

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[19] Ayrshire Growth Deal Heads of Terms Agreement (available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784363/AGD_-_Heads_of_Terms_-_February_2019__-_Agreed_Final.pdf)
[20] Borderlands Inclusive Growth Deal (available at: http://www.borderlandsgrowth.com/)

Transport Strategy 2011-2016[21] *Dumfries & Galloway Council*	between 2011 and 2016. SWestrans and Dumfries and Galloway Council share the same boundary and the RTS and LTS consequently cover the same geographic area. However, the LTS is focussed upon local networks and services whilst the RTS focuses upon wider connectivity issues. The LTS adopts the vision *"To develop better transport systems where they are most needed to support an ambitious, prosperous and confident Dumfries and Galloway where people achieve their potential".*	best possible transport infrastructure and services; • Promote Social Inclusion through the provision of transport services suitable for all residents; • Protect our Environment by coordinating land use planning and transport and, where travel is necessary, encourage efficient and sustainable transport; • Improve Road Safety by reducing the likelihood of accidents through Engineering, Education and Enforcement initiatives; and • Improve Integration of Journeys through the encouragement of better transport. .	transport and includes an action plan of key measures.
Accessing a sustainable future. The East Ayrshire Local Transport Strategy 2009 - 2014[22] *East Ayrshire Council, 2009*	The LTS sets out the strategic transport vision and objectives to guide the actions and priorities of the Council in terms of the development of transport infrastructure and services in East Ayrshire.	There is an overarching Vision within the LTS: "*To promote sustainable transport, accessibility and opportunities to maximise the economic potential of East Ayrshire and to improve the quality of life and safety of all its residents*". There are also five strategic objectives based around the following: • Economic Growth • Accessibility and Social Inclusion • Environment • Safety and Personal Security • Sustainability and Integration	The LTS identifies a number of issues related to transport and access to job market areas, areas of high deprivation and accessibility issues, particularly around the Cumnock and Doon Valley rural areas. The key issues to be addressed by the LTS are noted as follows: • Access to education, employment and health care; • Access for users of all abilities; • Providing reliable and efficient journey times for the movement of goods and access for economic activity; • Managing traffic levels; • Road safety measures; and • Protecting the environment.
South Ayrshire Council Local Transport Strategy 2009 - 2014[23] *South Ayrshire*	The LTS sets out the transport policy position of the Council and the transport project programme up to 2014 as well as longer-term schemes that require consideration through Transport Scotland and Strathclyde Partnership for Transport.	The objectives of the LTS are to: • Encourage modal shift to walking and cycling to assist in the promotion of a healthier lifestyle and lessen environmental impact during the period of the LTS; • Prioritise the protection of human health in urban areas and flora and fauna in more rural areas, from the adverse effects of transport activities; • Achieve a year-on-year reduction in the number of road	Amongst other elements, the Strategy provides an overview of transport related problems and opportunities. Although not all of South Ayrshire is included in the study area for the South West Scotland Transport Study, the LTS references key settlements that are within the study boundary, including Maybole, Girvan and Barrhill.

[21] Local Transport Strategy 2011-2016, Dumfries & Galloway Council
[22] Accessing a sustainable future. The East Ayrshire Local Transport Strategy 2009 - 2014, East Ayrshire Council
[23] South Ayrshire Council Local Transport Strategy 2009 – 2014 (available at:: https://www.south-ayrshire.gov.uk/documents/lts%20main%20doc%20issued%20with%20sea.pdf)

	users killed and seriously injured and enhance the personal safety of those in South Ayrshire; • Identify locations of concern for the safety and security of the travelling public and work with partners to address these; • Support economic development by promoting interventions that reduce constraints such as congestion and parking, and enhance the efficiency of the transport network for both users and operators; • Better integrate transport and land-use planning in order to promote economic vitality and inform the Development Plan process; • Better integrate different modes of travel and contribute to the development of multimodal interchanges; • Provide guidance to users, operators, developers and others on matters of local policy, priorities and potential schemes; • Increase opportunities, for walking and cycling and improve the quality, affordability and accessibility of public transport for accessing key community facilities; and • Provide a deliverable and measurable action plan covering all aspects of transportation over the short, medium and longer term as part of the LTS.	Issues identified include congestion in Maybole and Girvan, some rural communities being poorly served by buses and a lack of overtaking opportunities on the A77 south of Ayr. This study examines these issues further.
Dumfries and Galloway Council Local Development Plan[24] *Dumfries & Galloway Council, 2014*	The LDP sets out the strategy to guide future land use and development within Dumfries and Galloway until 2024.	The LDP's vision for the region includes: *"It will be a thriving region with a sustainable economy built on sustainable principles that safeguard the landscape, natural and historic environment, promote growth, maximise the use of existing infrastructure and enhance connectivity.* *It will have maximised its location to attract investment to create employment and investment opportunities which will in turn attract people of working age to the region…there will be opportunities in the rural area for economic development, housing and recreation."*	Understanding potential future development in Dumfries and Galloway is an important element to consider as any development has the potential to impact on the local and/or strategic road networks. Settlement maps are available which show the locations of LDP sites, including allocated Housing and Business and Industry. Transport and Travel is an overarching policy of the LDP, stating *that "development proposals should minimise the need for travel by car and encourage active and other more sustainable forms of travel whilst avoiding or mitigating any adverse impact on the transport network or road safety".*

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[24] Dumfries and Galloway Council Local Development Plan (available at: https://www.dumgal.gov.uk/media/17412/Local-Development-Plan-Section-1/pdf/Section1_LDP_(policy).pdf)

| East Ayrshire Local Development Plan[25]

East Ayrshire Council, 2017 | This document sets out how the Council wants to see East Ayrshire develop over the next 10-20 years. As well as indicating where development should and should not occur, this LDP is more 'place' focussed than previous local plans. It takes a proactive look at how it can create more successful places as well as containing general placemaking and design principles that all development proposals will be required to meet. | The vision is that *"East Ayrshire will be a desirable place in which to live, work, invest and visit"*.

The LDP goes on to state that:
"It will have a buoyant, sustainable economy with varied and plentiful employment opportunities and pleasant, well designed and affordable places to live. It will contribute to providing a low carbon economy through the use of renewable energy technologies. Its town centres will provide an attractive, welcoming focus for living, shopping, working and leisure.

East Ayrshire will have capitalised on its rich heritage, its quality historic built and natural environment and its close proximity and excellent road and rail links to Glasgow. This transformation will have taken place in a sustainable manner, ensuring that a careful balance is struck between economic growth and protecting the environment." | Understanding potential future development in East Ayrshire is an important element to consider as any development has the potential to impact on the local and/or strategic road networks within the study area. Settlement maps are available which show the locations of LDP sites, including Housing and Business & Industry opportunities.

Promoting sustainable transport forms part of the Energy & Infrastructure policy within the LDP. The Plan states that *"East Ayrshire's vision of a buoyant and sustainable economy relies on efficient transportation links, but it will also be partly achieved through the careful siting of new development opportunities in locations which are easily accessible by a range of transportation modes as well as encouraging the movement of more freight by rail"*. |
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| South Ayrshire Local Development Plan[26]

South Ayrshire Council, 2014 | The Plan sets out how the Council expects South Ayrshire to be developed over the 10 years from the plan's adoption and gives a broad idea of how much growth there will be in the area over a further 10 years, including proposed locations. | The Plan aims to:
• Provide the right conditions to help regenerate South Ayrshire's town centres and keep them vibrant, while conserving their historic character;
• Encourage renewable energy developments without damaging the landscape and countryside;
• Promote tourism while protecting the coastline and the other assets on which tourism is based; and
• Help the development of Glasgow Prestwick Airport and the area's seaports, as well as support the principles of sustainable development. | Understanding potential future development in South Ayrshire is an important element to consider as any development has the potential to impact on the local and/or strategic road networks within the study area. Land use and transport form a major element of the LDP, providing a list of what development proposals should adhere to.

Details relating to proposed housing release sites are provided; there is an indicative capacity of 90 houses in Girvan. 97 houses in Minishant and 375 houses in Maybole. |
| East Ayrshire Economic | The Strategy outlines East Ayrshire Council's approach to ensuring the economy of the area | The vision for 2025 is to deliver a comprehensive plan for economic development building on existing strengths and | *'Accelerate the pace of infrastructure improvements'* is identified as a priority in the Strategy. It notes that traffic |

[25] East Ayrshire Local Development Plan (available at: http://docs.east-ayrshire.gov.uk/crpadmmin/2012%20agendas/council/23%20february%202017/local%20development%20plan%20volume%201.pdf)
[26] South Ayrshire Local Development Plan (available at: https://www.south-ayrshire.gov.uk/documents/localdevplan_final.pdf)

Development Strategy 2014 – 2025[27] *East Ayrshire Council, 2014*	grows in future years. It builds upon the success of previous work, adding new insights and understanding that has resulted from discussions with businesses and partners, and reflecting a strong commitment to work together to maximise opportunities locally for the benefit of business, employees, residents and visitors.	opportunities. While the strategy sets out plans for the short term, the vision is for long term change, post-recession.	congestion and sustainable transport are important issues for the economy which will require capital investment.
East Ayrshire Community Action Plans[28] **(various dates)** *East Ayrshire Council*	Community-led action plans were developed across East Ayrshire, setting out community views about the community, important issues that require addressed and future action and project priorities.	Five Community led action plans have been identified which are of relevance to this study, each with their own priorities: • Dalmellington Parish • Drongan, Rankinston & Stair • Logan, Lugar and Cronberry • Netherthird, Craigens & Skerrington • New Cumnock	The type of priorities identified in the Plans include developing and promoting walking, cycling, horse-riding and canoeing, improving public transport, improving road surfaces and parking, and implementing better signage.
South Ayrshire Economic Development Strategy 2013 – 2023[29] *South Ayrshire Council*	The South Ayrshire Economic Development Strategy sets out the overall aims for economic development in the area and the high-level activities to be taken forward to increase the area's competitiveness and secure a more sustainable economy.	The Shared Vision is for South Ayrshire to have "*an enterprising and sustainable economy where people are skilled, confident and successful in accessing employment.*" This Council aims to realise this by increasing the range of employment opportunities locally, strengthening local business networks, improving connections between the urban and rural areas and introducing measures to rediscover the distinctive characteristics of South Ayrshire as an attractive place to visit.	A number of targeted improvements are set out to help the Council realise its vision, including a desire to have high quality connectivity by securing transport infrastructure and service improvements. Similar to East Ayrshire's Strategy, the Strategy states that the development of the economy requires excellent transport options.
Dumfries & Galloway Active Travel Strategy and Action Plan[30]	The main focus of the strategy is to improve the opportunity for and uptake of active travel to assist in enhancing health and well-being outcomes, support tourism, economic growth,	The objectives of the strategy are: • Developing infrastructure improvements that encourage active travel and seeks to prioritise maintenance of active travel infrastructure • Promoting walking, cycling and scooting as alternative transport modes,	The Active Travel Strategy includes an Action Plan to support delivery of the objectives. Relevant measures, including those identified from the subsequent Active Travel Audits work, have been considered as part of the

[27] East Ayrshire Economic Development Strategy 2014 – 2025 (available at: https://www.east-ayrshire.gov.uk/Resources/PDF/E/EconomicDevelopmentStrategy2014-2025.pdf)

[28] Community Action Plans (available at: https://www.east-ayrshire.gov.uk/CouncilAndGovernment/CommunityCouncilsAndAssemblies/CommunityCouncils-Information/Community-Led-Action-Plans.aspx)

[29] South Ayrshire Economic Development Strategy 2013 – 2023 (available at: https://www.south-ayrshire.gov.uk/documents/draft%20south%20ayrshire%20economic%20development%20strategy.pdf)

[30] Dumfries & Galloway Active Travel Strategy and Action Plan, 2014. Available at http://www.dumgal.gov.uk/media/19209/Active-Travel-Strategy/pdf/0047-15_Active_Travel_strategy_web.pdf

Dumfries & Galloway Council, 2014	protect the environment and transport sustainability. The Strategy's vision is to see active travel being the normal choice for short, everyday journeys across all communities in the region.	• Continuing to work with Students, school children, staff and parents to encourage more active travelling to and from school and further education • Working with employers and staff to encourage active travelling to and from work • Improving the safety of walking and cycling in the region and contribute to national road safety targets • Embedding active travel opportunities within new developments • Seeking and supporting funding opportunities within new developments • Encouraging and facilitating walking and cycling as leisure and tourist activities to provide benefits to Health and the local economy	South West Scotland Transport Study.
Open Outdoors, The Dumfries & Galloway Outdoor Access Strategy 2012 – 2017[31] *Dumfries & Galloway Council*	The Outdoor Access Strategy provides a vision for outdoor access and the strategic framework for planning, managing and developing access in Dumfries & Galloway. It aims to help residents lead more active lifestyles and increase opportunities for outdoor recreation and sustainable travel.	The strategy's vision is that within the next five years: • Barriers to access will be reduced following the enhancement and promotion of core paths; • Communities will have developed a sense of responsibility for local paths; • Residents will be leading more active lifestyles; • The countryside will be used to support and promote local enterprise; • Developers will be contributing to enhancing and developing access; and • Public bodies will be working in partnership to support communities, reduce health inequalities, promote the region and protect the environment.	The document has a focus on sustainable transport modes and outlines that walking and cycling are important leisure pursuits, particularly given the significant network of local cycle routes, local walks and forest paths in the region. As such, the Access Strategy provides an evidence base of the issues and opportunities specific to outdoor pursuits.
Previous and Ongoing Studies			
A75 / A77 Freight Corridor Study[32] *Transport Scotland 2018*	The study seeks to develop a greater understanding of goods vehicle movements on the A75 and A77. A core driver for the project was to investigate the role and operation of the strategic ports at Cairnryan (Loch Ryan and Cairnryan) and the supporting road infrastructure which connects these ports to the economies of Scotland, Northern Ireland / Ireland and England.	Through a combination of survey analysis (including a Specialised Goods Vehicle Counts), desktop research and consultation, the study was undertaken to provide advice to Transport Scotland on freight characteristics on key routes serving the Ports at Cairnryan and to assist in the assessment of issues as part of the South West Scotland Transport Study.	The study provides in depth details of how freight operates on two key corridors in the study area and the challenges the freight industry experiences. It presents data, including traffic counts, accident data, roadside interviews and stakeholder consultation findings, which has informed the evidence base for the South West Scotland Transport Study.

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[31] Open Outdoors, The Dumfries & Galloway Outdoor Access Strategy 2012 – 2017 (available at: https://www.gov.scot/seag/seagDocs/SEA-00511/12283.pdf)
[32] A75 / A77 Freight Corridor Study, Transport Scotland 2018

Dumfries & Galloway Settlement Sustainable Transport Options STAG Studies[33] *Dumfries & Galloway Council (ongoing)*	Several STAG appraisal studies were undertaken to identify and evidence the transport problems and opportunities within three study areas (Eastriggs, Beattock & Moffat and Thornhill) and the most appropriate opportunities to address identified issues.	In line with problems and opportunities identified, the following Objectives were developed for each study: • TPO1: Increase the mode share of sustainable transport for all journey purposes • TPO2: Increase transport integration • TPO3: Increase public transport accessibility	The studies identified a number of problems, issues, opportunities and constraints. Problems faced by the communities of Eastriggs, Beattock & Moffat, and Thornhill included limited travel mode choice, average public transport journey times being too long, long distances from the closest train station and limited off road cycle routes. Options identified through the STAG studies include reopening rail stations, bus priority measures, improved bus services and improved off-road cycling infrastructure. Key findings from the study, including potential interventions have been considered as part of the South West Scotland Transport Study.
Scottish Trunk Road Infrastructure Project Evaluation (STRIPE) Reports (A75, A76, A77)[34] *Transport Scotland*	There are five STRIPE reports for improvement schemes on trunk roads in South West Scotland: • A75(T) Cairntop to Barlae • A77(T) Park End to Bennane • A76(T) Glenairlie • A77(T) Glen App • A77(T) Haggstone The reports provide a summary of key findings from One Year or Three Year (depending on the scheme) After Evaluation report. Amongst other aspects, the reports state how the project is operating.	Each scheme report has a set of objectives. Examples of objectives include: mitigating the environmental impact of new works, improving and increasing the number of overtaking opportunities, improving operational performance and incorporating the needs of pedestrians and cyclists.	The following provides a summary of how the project was operating (when the report was produced): • A75(T) Cairntop to Barlae: Scheme is operating safely and generally as expected. • A77(T) Park End to Bennane: Post-opening surveys of speed and overtaking conditions suggest the scheme is operating as expected. Fewer platoons of vehicles are exiting the survey site than entering due to the improved overtaking opportunities. • A76(T) Glenairlie: The project is operating safely in the first three years of operation, with only one slight accident occurring within the vicinity of the project. The accident was not attributable to the design or layout of the project. • A77(T) Glen App: The project is operating safely in the first three years after opening, with only one accident occurring within the vicinity of the project. This accident was not attributable to the design or layout of the project. • A77(T) Haggstone: The project is operating safely in the first three years after opening, with no accidents occurring within the vicinity of the project.

[33] Dumfries & Galloway Settlement Sustainable Transport Options STAG Studies
[34] Scottish Trunk Road Infrastructure Project Evaluations, Transport Scotland (available at: https://www.transport.gov.scot/transport-network/roads/project-evaluation/)

Dumfries Southern Bypass STAG 2 Appraisal[35] *SWestrans*	The study was undertaken to survey the area where a Southern Bypass could be constructed in order to define a preferred alignment to improve the accessibility of the Crichton area and Dumfries and Galloway Royal Infirmary. The area currently suffers from restricted access as a result of the River Nith to the west and physically constrained junctions south of Dumfries town centre.	Planning objectives for the study related to the RTS Transport Planning Objectives, referenced earlier in this policy review.	The study notes that a Southern Bypass around Dumfries could assist in improving access to the Crichton area and the Royal Infirmary. Alternative options, including improvements to public transport and other road-based proposals, were considered but deemed to not offer the same benefits as a Southern Bypass. It is likely that complementary measures will be required within Dumfries in order to ensure the benefits which are accrued by the scheme are 'locked in' and not simply eroded by induced traffic.
Dumfries to A74 Fastlink, STAG Part 2 Appraisal[36] *SWestrans, 2009*	The study focuses on road-based interventions carried forward from the initial STAG Part 1 appraisal and highlighted in the SWestrans Regional Transport Strategy. The study considered proposals for enhanced links between Dumfries and the motorway network. The multi-purpose A709 road is located between the A701 and the A75 between Dumfries and Lockerbie, which is also a key consideration in this study.	The following five TPOs were identified: • Env1: To safeguard the environment and heritage of the study area • Env2: To reduce the impacts of traffic on local communities • S1: To improve safety for all road users by reducing total accidents by 25% on the routes linking Dumfries to the A74(M) • Ec1: To increase the reliability of journey times by 50% for all vehicles travelling between Dumfries and the A74(M) • Ec2: To aid economic prosperity and area regeneration by improving accessibility and reducing travel costs by 25% between Dumfries and the A74(M)	Four possible route corridors were identified in the Part 1 appraisal following preliminary traffic and economic appraisal and engineering and environmental scoping exercises. The sifting of options identified a preference for two corridor options: • Option 1 – A75 Gretna to Dumfries – involves online dualling of the existing road between Dumfries and Gretna; and • Option 3 – Lockerbie to Dumfries (South) corridor – involves construction of a new offline road between Dumfries and Lockerbie. Although both options present environmental challenges, those relating to the Lockerbie – Dumfries option in particular would require considerable mitigation measures.
A76 Corridor Study[37] *East Ayrshire and Dumfries & Galloway Council, 2015*	In 2010, the A76 Transport Partnership produced a Five Point Action Plan which made a series of recommended infrastructure improvements based on analysis of the conditions and capacity of the A76 at that time. This A76 Corridor Study, which was carried out in line with STAG, provides a follow-up to this, based on a more current analysis and	The following six objectives were agreed for the study • Deliver improved physical integration of transport infrastructure and improved integration of timetables to support multi-modal travel; • Continue delivery of cross-boundary collaborative working to support transport's contribution to economic development; • Deliver enhancements to transport services and infrastructure that support economic development; • Improve access to sustainable transport for all	Recommended outcomes from the Corridor Study relevant to the study area included: rail timetable alterations; a new rail station at Thornhill, improved waiting times / better integration between bus and rail, development of a safe cycle path adjacent to the A76, introduction of 'Keep your Distance' signage, and development of a freight loop to enable faster passenger trains to overtake freight trains (thereof minimising

[35] Dumfries Southern Bypass STAG 2 Appraisal, SWestrans (available at: http://swestrans.org.uk/9726)
[36] Dumfries to A74 Fastlink (Available from SWestrans website: http://swestrans.org.uk/CHttpHandler.ashx?id=6826&p=0)
[37] A76 Corridor Study, East Ayrshire and Dumfries & Galloway Council, 2015

	evaluation of the existing multi-modal transport links on the A76 Corridor between Kilmarnock and Dumfries.	communities along the A76 Corridor; • Deliver safety-related improvements at identified high risk road locations; and • Deliver improved efficiency for freight transport into and out of the region.	disruption to the freight timetable) and promoting freight modal shift on the corridor.
Dumfries & Galloway settlement Active Street Reviews[38] *Dumfries & Galloway Council*	Street reviews of existing and proposed active travel infrastructure were undertaken in ten towns across Dumfries and Galloway with a view to developing actions which could encourage increased use of active travel.	The objectives of the Reviews were to: • Develop infrastructure improvements that encourage active travel and seek to prioritise maintenance of active travel infrastructure. • Promote walking, cycling and scooting as alternative transport modes, particularly for short trips • Continue to work with students and school children, staff and parents to encourage more walking, cycling and scooting to and from school / further education • Work with employers and staff to encourage more walking and cycling to and from work. • Improve the safety of walking and cycling in Dumfries and Galloway and contribute to national road safety targets • Embed active travel opportunities within new developments • Seek and support funding opportunities for active travel • Encourage and facilities walking and cycling as leisure and tourists' activities to provide benefits to health and the local economy.	Active Street Reviews were undertaken at ten towns across Dumfries & Galloway: Annan, Lockerbie, Gretna, Langholm, Kirkcudbright, Moffat, Dalbeattie, Castle Douglas, Newton Stewart and Sanquhar and Kirkconnel. A wide range of improvements were identified through the Action Plan, including: • Improved maintenance and cutting back of vegetation; • Review of existing signage and bus stops; • Installing dropped kerbs and tactile paving; • Implementing a travel signage strategy; and • Enforcing existing on-street parking restrictions. Many of the actions listed in the Review documents are location specific but the general message around creating the conditions necessary to make walking and cycling more attractive is applied across all settlements.
A714 South Ayrshire Route Action Plan[39] *Ayrshire Roads Alliance, 2014*	The report presents a Route Action Plan for the A714 between Girvan and the South Ayrshire boundary at the River Cree. The study was commissioned following a number of traffic accidents and reported safety concerns on this stretch of road. The work was undertaken to identify improvement measures which should be implemented along the A714 within South Ayrshire.	No specific objectives are identified in the Plan. However, it does reference local and national policy objectives, including those in the National Transport Strategy and South Ayrshire Council's Local Transport Strategy.	The report identifies a range of potential road safety improvements on the A714 but notes that the road itself is not considered inherently unsafe if driven appropriately and is similar to many similar roads throughout the country. Measures considered for the A714 include: • Comprehensive but proportionate programme of chevron installation. • Comprehensive review of roadside signing. • In the long term it is recommended that the Council investigate developing and implementing a strategy for comprehensive repairs to the carriageway. • The strategic installation of high friction surfacing should help to alleviate or reduce the number of these types of accidents. • General road markings; it was identified that

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[38] Dumfries & Galloway settlement Active Street Reviews
[39] A714 South Ayrshire Route Action Plan

			- significant areas of lining required refurbishment or reinstatement. - Installation of "*stick-on*" reflective road studs has been considered. - Implementation of gateway features at the settlement boundaries. This may include new boundary signage, improved lining, physical carriageway narrowings, rumble strips and vehicle activated signs. - Installation of lay-bys and rest areas. - Implement areas of localised carriageway widening. - Potential improvements to the infrastructure to facilitate or improve safe movement by pedestrians. - Potential measures for cyclists.
Ayrshire Timber Transport Strategy[40] *Ayrshire Joint Structure Plan and Transportation Committee, 2005*	The report provides strategic context for timber transportation in Ayrshire and sets out a framework for the future development of transport infrastructure in the region, considering the future requirements of the timber industry. The Strategy adopts a vision statement "*To develop a robust, flexible and integrated timber transport network in Ayrshire that maximises the economic benefit of Ayrshire's woodland resource in a sustainable and locally sensitive manner*".	The objectives of the Strategy are to: - Minimise, and where possible remove altogether, the negative environmental and social costs of timber traffic on rural communities; - Direct timber traffic onto appropriate routes and away from weak, sub-standard public roads; - Ensure that the quality of the public road network is sufficiently robust to accommodate timber traffic where it is expected to do so; - Maximise the use of internal forestry roads wherever possible; - Maximise economic benefits to both the forestry industry and associated rural industries; - Encourage local processing of forestry produce to minimise distances travelled and maximize the economic benefit to all those associated with the industry in Ayrshire; - Minimise conflict between freight and recreational users of rural infrastructure; - Stimulate timber transportation via alternative modes to road haulage where practical; and - Minimise vehicle convoys by co-ordinated planning of HGV movements.	The Strategy notes that forestry is increasingly playing a key role in not just the rural economy but also the overall economy of Ayrshire. It further notes that transportation of timber from source to processing point is a fundamental requirement to allow the economic benefits of Ayrshire's forestry resource to be reaped and that the economy of Ayrshire is heavily dependent upon the movement of goods via road haulage.
NFI 25-year projection of timber	This report provides a detailed picture of the 25-year forecast of timber availability in		The report set out an estimate of future timber availability in Ayrshire and Arran based upon field samples

[40] Ayrshire Timber Transport Strategy (available at: https://timbertransportforum.org.uk/attachments/article/44/Ayr%20TTG%202005%20Ayrshire%20Timber%20Transpory%20Strategy.pdf)

availability in **Ayrshire and Arran**[41] *Forestry Commission, 2014*	Ayrshire and Arran.		assessed between October 2009 and August 2013. The estimates in the report are described as provisional. The 25 year forecast of annual softwood timber availability (Ayrshire & Arran) is 681,000 m3 obs 2015-19, decreasing to 481,000 m3 obs 2035-39. Conversely, hardwood timber is forecast to increase from 4,000 m3 obs in 2015-19 to 11,000 m3 obs 2035-39.

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[41] NFI 25-year projection of timber availability in Ayrshire and Arran (available at: https://timbertransportforum.org.uk/attachments/article/41/TTG_Report_Ayrshire_Arran.pdf)

Appendix B – TPO alignment with Wider Policy

A review of relevant policy documents has been undertaken to ensure the alignment of the Transport Planning Objectives with relevant national, regional and local policy directives, plans and strategies. The relevant policy documents are shown in Figure B-1.
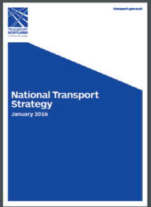
Figure B-1: Hierarchical Policy Framework

The tables below demonstrate the alignment of the TPOs with the relevant objectives from each of the policy documents.

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Table B-2: TPOs vs NTS 2016

National Transport Strategy 2016		TPO1	TPO2	TPO3	TPO4	TPO5
High Level Objectives	Promote economic growth by building, enhancing, managing & maintaining transport services, infrastructure and networks to maximise their efficiency			✓		✓
	Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network			✓		✓
	Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimise emissions and consumption of resources and energy					
	Improve safety of journeys by reducing accidents and enhancing the personal safety of pedestrians, drivers, passengers and staff		✓			
	Improve integration by making journey planning and ticketing easier and working to ensure smooth connection between different forms of transport					✓
Key Strategic Objectives	Improved journey times and connections, to tackle congestion and lack of integration and connections in transport	✓		✓		✓
	Reduced emissions, to tackle climate change, air quality, health improvement					
	Improved quality, accessibility and affordability, to give choice of public transport, better quality services and value for money, or alternative to car				✓	✓

Table B-3: TPOs vs NPF3

National Planning Framework 3	TPO1	TPO2	TPO3	TPO4	TPO5
A Sustainable, Successful Place: • Enterprise zones • City Investment Plans • Aligning planning and infrastructure investment • Support housing developments • Investment in coastal and rural areas	✓			✓	✓
A Low Carbon Place • Renewable Sources • Energy Efficiency • Community and Locally Owned Renewable Energy • National Renewables Infrastructure Plan					
A Natural, Resilient Place • Cycling Action Plan • National Walking Strategy • Scottish Biodiversity Strategy • Tourism Development Framework			✓		

National Planning Framework 3	TPO1	TPO2	TPO3	TPO4	TPO5
• Climate Change Adaptation					
A Connected Place • Smart Cities • Infrastructure Investment Plan • Next Generation Broadband • Charging Points • Scotland's Scenic Routes	✓		✓		✓

Table B-4: TPOs vs STPR

Strategic Transport Projects Review	TPO1	TPO2	TPO3	TPO4	TPO5
Wealthier and Fairer Scotland: improvements in transport provision will generate savings for businesses and individual travellers, leading to improvements in economic welfare	✓		✓	✓	
Smarter Scotland: promoting innovation and encouraging implementation of new transport technologies					
Healthier Scotland: encouraging a shift from car to public transport and to healthier and physically active forms of transport, and by improving transport access to health and community services				✓	✓
Safer and Stronger Scotland: improving the quality, accessibility and affordability of public transport to provide access to essential services and economic opportunities, reduction of accidents through improvement of the condition of roads infrastructure		✓		✓	✓
Greener Scotland: promoting public transport as well as encouraging the adoptation of new low carbon technologies and promoting cleaner vehicles, provide attractive alternatives to the car.					

Table B-5: TPOs vs Programme for Government 2017-18

Programme for Government 2017-18	TPO1	TPO2	TPO3	TPO4	TPO5
A future of opportunity • A future-proofed, high-tech, low carbon economy • Cleaner, greener and healthier			✓	✓	✓
Services fit for the future • Improving public services • The best place in the world to grow up • Excellence and equity in our schools • Beyond school • Children and young people's rights • Building strong and safe communities • The best place in the world to be cared for and be healthy • Supporting public sector workers • Paying for public services		✓	✓	✓	✓
Building a fairer Scotland • Social security • Tackling poverty			✓	✓	✓

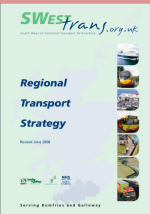| Programme for Government 2017-18	TPO1	TPO2	TPO3	TPO4	TPO5
• Housing and homelessness • Supporting everyone into work • Empowering our communities • Dignity, equality and human rights for all					
A confident, outward looking nation • Culture for all • International relations and International Development					✓

Table B-6: TPOs vs SWestrans RTS, 2008

SWestrans Regional Transport Strategy, 2008	TPO1	TPO2	TPO3	TPO4	TPO5
Improve transport links within Dumfries and Galloway and provide fast, safe and reliable journey opportunities to significant markets, including the national economic centres of Edinburgh and Glasgow, as well as northern England and Ireland	✓	✓	✓	✓	✓
Contribute to improved economic growth and social inclusion in the region whilst minimising the environmental impacts of transport	✓				✓
Support the national transport target of road traffic stabilisation					
Add value to the broader Scottish economy and underpin increased sustainable national economic growth	✓				✓
Assist in getting visitors/tourists to the region from other parts of Scotland, England, Ireland and beyond	✓			✓	✓
Making it possible for more people to do business in and from Dumfries and Galloway by providing sustainable connections to key business centres in the Central Belt and other locations such as Ayrshire and Cumbria			✓		✓
Support vibrant places that provide employment, healthcare, educational and other services that people need and want, so that their quality of life is maximised					✓
Reduce the constraint of peripherality, both between the region's main settlements and its outlying areas, and between the region and its external markets	✓		✓		✓
Capitalise on improvements to critical long distance corridors to create new transport services, nodes and development opportunities for Dumfries and Galloway	✓		✓	✓	✓
Pursue certain transport schemes in the context of local and national economic development, while at the same time recognising wider context of economic, social and environmental imperatives	✓		✓	✓	✓

Table B-7: TPOs vs SPT RTS, 2008-21

A Catalyst for Change – The Regional Transport Strategy for the West of Scotland 2008 – 21	TPO1	TPO2	TPO3	TPO4	TPO5
Safety and Security: To improve safety and personal security on the transport system		✓			
Modal Shift: To increase the proportion of trips undertaken by walking, cycling and public transport				✓	✓
Excellent Transport System: To enhance the attractiveness, reliability and integration of the transport network	✓		✓	✓	✓
Effectiveness and Efficiency: To ensure the provision of effective and efficient transport infrastructure and services to improve connectivity for people and freight	✓		✓	✓	✓
Access for All: To promote and facilitate access that recognises the transport requirements of all					✓
Environment and Health: To improve health and protect the environment by minimising emissions and consumption of resources and energy by the transport system				✓	✓

Table B-8: TPOs vs Dumfries & Galloway Regional Economic Strategy, 2016-2020

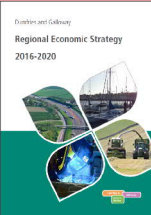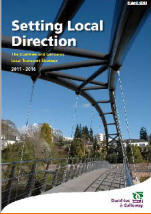| Dumfries & Galloway Regional Economic Strategy, 2016-2020	TPO1	TPO2	TPO3	TPO4	TPO5
Developing Places: Empower the region's communities to address their distinct economic challenges and opportunities	✓	✓	✓	✓	✓
Better Skills, Better Opportunities: Create a vibrant culture of opportunity in the region to retain and attract people of working age and improve the competitiveness of individual businesses	✓		✓	✓	✓
Well Developed Infrastructure: Enhancing regional connectivity, removing barriers to business competitiveness and improving access to economic opportunities for individuals and businesses	✓		✓	✓	✓
Investment Projects: Large investment projects that will make a significant impact on the regional economy	✓	✓	✓	✓	✓

Table B-9: TPOs vs Dumfries & Galloway LTS

Setting Local Direction: The Dumfries & Galloway Local Transport Strategy 2011-2016	TPO1	TPO2	TPO3	TPO4	TPO5
Assist Economic Growth through the provision of the best possible transport infrastructure and services	✓	✓	✓	✓	✓
Promote Social Inclusion through the provision of transport services suitable for all residents					✓
Protect our Environment by coordinating land use planning and transport and, where travel is necessary, encourage efficient and sustainable transport			✓	✓	✓

Setting Local Direction: The Dumfries & Galloway Local Transport Strategy 2011-2016	TPO1	TPO2	TPO3	TPO4	TPO5
Improve Road Safety by reducing the likelihood of accidents through Engineering, Education and Enforcement initiatives		✓			
Improve Integration of Journeys through the encouragement of better transport.	✓		✓	✓	✓

Table B-10: TPOs vs Dumfries & Galloway LDP

Dumfries & Galloway Local Development Plan	TPO1	TPO2	TPO3	TPO4	TPO5
A viable rural economy and community characterised by: • Access to sustainable transport • Ready access to higher education			✓		✓
Vibrant towns and villages that have: • Access to a wide range of sports, recreation and leisure activities			✓		✓

Table B-11: TPOs vs East Ayrshire LTS

Accessing a sustainable future. The East Ayrshire Local Transport Strategy 2009 - 2014	TPO1	TPO2	TPO3	TPO4	TPO5
Economic Growth: To promote the development of the local economy and enhance social and economic activity by being consistent with the principle of sustainable development and meet the need for efficient local, regional, national and international transport links into and out of East Ayrshire.	✓		✓	✓	✓
Accessibility and Social Inclusion: To promote social inclusion by improving accessibility to employment opportunities, education, retail and leisure facilities and to hospitals, clinics, surgeries and other places where a health service is provided.	✓		✓	✓	✓
Environment: To improve, conserve and enhance the natural, historic and built environment, and contribute to a healthier lifestyle by facilitating the provision and use of sustainable modes of transport and reduce emissions to air by reducing car dependency, particularly in urban areas.				✓	✓
Safety and Personal Security: To improve public safety, including road safety and the safety of users of the transport network within East Ayrshire		✓			
Sustainability and Integration: To encourage the integration of transport modes to promote greater use of public transport and other sustainable modes of transport.				✓	✓

Table B-12: TPOs vs East Ayrshire LDP

East Ayrshire Local Development Plan		TPO1	TPO2	TPO3	TPO4	TPO5
	PLACES • Enabling New Housing • Successful Town Centres					✓
	ECONOMY • Revitalising Our Economy • Promoting Tourism	✓		✓	✓	✓
	ENERGY & INFRASTRUCTURE • Delivering Renewable Energy • Promoting Sustainable Transport • Delivering Infrastructure • Sustainable Waste Management				✓	✓
	ENVIRONMENT • Protecting and Enhancing the Natural and Built Environment	✓				

Table B-13: TPOs vs East Ayrshire Economic Development Strategy

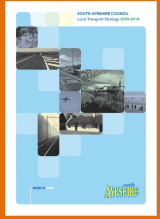| East Ayrshire Economic Development Strategy 2014/2025		TPO1	TPO2	TPO3	TPO4	TPO5
	To integrate East Ayrshire with the regional economy	✓		✓	✓	✓
	To facilitate economic restructuring	✓		✓	✓	✓
	To improve the vibrancy of our town centres				✓	✓
	To improve the quality of tourism on offer	✓		✓	✓	✓
	To increase economic participation in our communities	✓		✓	✓	✓
	To accelerate the pace of infrastructure improvements	✓		✓	✓	✓

Table B-11: TPOs vs South Ayrshire LTS

South Ayrshire Council Local Transport Strategy 2009 - 2014		TPO1	TPO2	TPO3	TPO4	TPO5
	Encourage modal shift to walking and cycling to assist in the promotion of a healthier lifestyle and lessen environmental impact during the period of the LTS				✓	✓
	Prioritise the protection of human health in urban areas and flora and fauna in more rural areas, from the adverse effects of transport activities					
	Achieve a year-on-year reduction in the number of road users killed and seriously injured and enhance the personal safety of those in South Ayrshire		✓			
	Identify locations of concern for the safety and security of the travelling public and work with partners to address these		✓			

South Ayrshire Council Local Transport Strategy 2009 - 2014	TPO1	TPO2	TPO3	TPO4	TPO5
Support economic development by promoting interventions that reduce constraints such as congestion and parking, and enhance the efficiency of the transport network for both users and operators			✓	✓	✓
Better integrate transport and land-use planning in order to promote economic vitality and inform the Development Plan process	✓				✓
Better integrate different modes of travel and contribute to the development of multimodal interchanges	✓			✓	✓
Provide guidance to users, operators, developers and others on matters of local policy, priorities and potential schemes					
Increase opportunities, for walking and cycling and improve the quality, affordability and accessibility of public transport for accessing key community facilities				✓	✓
Provide a deliverable and measurable action plan covering all aspects of transportation over the short, medium and longer term as part of the LTS					

Table B-12: TPOs vs South Ayrshire LDP

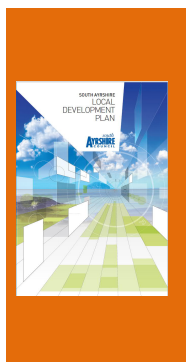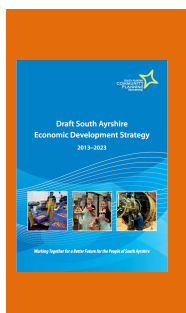| South Ayrshire Local Development Plan	TPO1	TPO2	TPO3	TPO4	TPO5
Provide the right conditions to help regenerate South Ayrshire's town centres and keep them vibrant, while conserving their historic character			✓	✓	✓
Encourage renewable energy developments without damaging the landscape and countryside					
Promote tourism while protecting the coastline and the other assets on which tourism is based	✓		✓	✓	✓
Help the development of Glasgow Prestwick Airport and the area's seaports, as well as support the principles of sustainable development	✓				

Table B-16: TPOs vs South Ayrshire Economic Development Strategy

South Ayrshire Economic Development Strategy 2013-2023	TPO1	TPO2	TPO3	TPO4	TPO5
A MORE DIVERSE ECONOMY where local employment opportunities are increased by building on the area's existing strengths and attracting new emerging growth industries, connected with digital technologies and the media.	✓		✓	✓	✓
AN AREA WITH AN ENTREPRENEURIAL CULTURE in which existing businesses thrive and expand and people are encouraged and supported to set up new businesses.	✓		✓	✓	✓

South Ayrshire Economic Development Strategy 2013-2023	TPO1	TPO2	TPO3	TPO4	TPO5
AN AREA OF EQUALITY OF ECONOMIC OPPORTUNITY by tackling the problems of poverty and unemployment through improving access to education, training and jobs.			✓	✓	✓
AN ATTRACTIVE PLACE IN WHICH TO LIVE, WORK, VISIT AND INVEST by ensuring that the area has a good transport system, affordable and available land for development, good quality schools and leisure services and an attractive local environment.	✓		✓	✓	✓
AN AREA WITH VIBRANT AND DYNAMIC TOWN CENTRES by strengthening the role of the town centre as the economic hub of local communities.			✓	✓	✓
A MORE DYNAMIC RURAL ECONOMY through improvements in employment opportunities, public transport and access to services.	✓		✓	✓	✓

Appendix C –Sifted Options

As presented in Chapter 7, an extensive list of options was generated throughout the study and a process of option sifting has been undertaken. Examples of the types of options that were removed from the initial long options list as a result of the options sifting processes described in Chapter 7 is presented in the table below, alongside the most common reasons that options have been removed from further consideration at this stage.

Table C:1: Sifted Options

Option Examples	Reason for Sifting
Real-time bus information at bus stops and rail stations; New bus stops along routes; Cycle parking at bus stops; Electric and Low-Emission buses; Establish Bus Service Improvement Partnerships; Development of Car Clubs and promotion of Car Sharing Schemes; Specific local road junction improvement and traffic management proposals.	Option sifted due to being out of scope for this project; option is a Local Authority or Regional Transport Partnership led initiative.
Increased route maintenance on the A76; Improve road condition of the routes serving the ports; Improved lane markings; Installation of "Keep your Distance" traffic signs; Deer fences on the A709 at St Ann's; Remove bollards from the A76 Thornhill; Improved street lighting; Better maintenance of overgrown vegetation; Relocation of speed limit signs; Improved signage (including naming of Roundabouts).	Option sifted due to being out of scope for this project; option is a Trunk Road Operator Maintenance issue.
Install vehicle disembarkation order from ferries (motorcycles, cars then lorries).	Option sifted due to being out of scope for this project; option is a ferry operator issue.
Provision of bikes on buses services; Increased Sunday services; Improved integration of bus and train service (e.g. 500/X75 at Dumfries Rail Station).	Option sifted due to being out of scope for this project; option is a local bus operator issue.
Re-regulation of Bus Services; Longer term funding for the Smarter Choices Smarter Places Programme; Amending the bus pass qualifying age; Motorcycling Education Campaign; Development of Accident Reporting Apps; Free/Reduced Public Transport tickets for young people; Autonomous Vehicle and HGV Platooning Trials; MAAS; High Speed Rail Provision; Improved Broadband connectivity to reduce the need to travel.	Option sifted due to being out of scope for this project; option is a Scottish Government issue for consideration at a national level.
Freight Consolidation Centre; Freight Delivery and Servicing Plans; Free electricity to electrify rail lines; and Bikes on trains.	Option sifted due to being out of scope for this project; option requires action which are not within the remit of Transport Scotland.
Create a Kilmarnock - Dumfries Community Rail Partnership.	Partnership already exists as the South West Community Rail Partnership.
Support for a Strategic Transport Timber Fund.	Option already exists at a national level.
Modal freight shift from road to rail; Improved connectivity; Ensure sufficient capacity at all stations; Enhance reliability of bus and rail services; Improved safety on strategic roads; Improved traffic flow on strategic roads; Retention of rural bus services; Faster routes leading to ports.	Intervention is an outcome of options rather than option in itself.
Development of Route/Corridor Action Plans	Action Plans considered to be a means of capturing proposed improvements.