Strategic Transport Projects Review
Report 2:
Determine Expectations, Gaps and Shortfalls

TRANSPORT SCOTLAND

16th May 2008

Report 2

Grant Thornton

TRIBAL

JACOBS

FABER MAUNSELL | AECOM

Authorisation

Jacobs UK Ltd in association with Faber Maunsell, Grant Thornton and Tribal Consulting has great pleasure in presenting this document on behalf of Transport Scotland.

Opinions and information provided in the report are on the basis of Jacobs U.K. Limited using due skill, care and diligence in the preparation of the same and no warranty is provided as to their accuracy.

It should be noted and it is expressly stated that no independent verification of any of the documents or information supplied to Jacobs U.K. Limited has been made.

The text may be freely downloaded and translated by individuals or organisations for conversion into other accessible formats. If you have other needs in this regard please contact:

Transport Scotland
Buchanan House
58 Port Dundas Road
Glasgow
G4 0HF

Telephone: 0141 272 7100
Email: info@transportscotland.gsi.gov.uk
Web site www.transportscotland.gov.uk

Prepared by:	A Nichols / G Dodds
Reviewed by:	S Turnbull
Approved by:	W A Duff

Version History				
Version No.	**Date**	**Change Details**	**Author**	**Approver**
A	02/05/2008	Draft	AN/GD	WAD
B	16/05/2008	Final	AN/GD	WAD

1 The Policy Context

1.1 Introduction

The Strategic Transport Projects Review (STPR) will make recommendations on a portfolio of land-based transport investments to be delivered between 2012 and 2022 that will most effectively contribute towards the Government's Purpose to promote sustainable economic growth and the delivery of the three strategic outcomes identified in the National Transport Strategy of: improving journey times and connections; reducing emissions; and improving quality, accessibility and affordability.

Output from the STPR will focus specifically on strategic land-based interventions that would be delivered, or significantly supported, by national government. To understand how the totality of transport interventions will contribute to the Government's Purpose and the three strategic outcomes of the National Transport Strategy, consideration must also be given to the range of complementary transport interventions that will be brought forward simultaneously by national, regional and local transport authorities.

The purpose of this report is to:

- Define the policy expectations and national objectives that will provide the framework for determining the future required performance of the strategic networks;
- Identify, based on the evidence from Report 1, a series of objectives at urban network, strategic node and corridor level that will target and facilitate the delivery of those policy expectations and national objectives; and
- Identify the significance of issues to determine those that may require a step change approach to option generation in SWP5 to meet the national objectives.

This report builds on, and flows from, the output of Report 1 which sets the context for this review. The specific tasks undertaken in Report 1 were:

- Definition and description of the national strategic transport network;
- Development of a set of indicators to assess the performance of the national strategic transport network;
- Assessment of the existing performance of the network, using the available Transport Model for Scotland (TMfS) and additional information; and
- Forecast of the future performance of the network for 2022 using TMfS.

1.2 The Policy Context

Policy expectations and objectives for STPR must be developed with the aim of contributing to the Scottish Government's Purpose and strategic objectives. The Government Economic Strategy (2007) states that sustainable economic growth is the one central purpose to which all else in government is directed and contributes. The Scottish Government's Strategic Objectives – to make Scotland wealthier and fairer; smarter; healthier; safer and stronger; and greener – are all predicated on effort to bring more economic success to Scotland. From a transport perspective, more detailed articulation of how the Government's Purpose can be achieved is outlined in:

- The Government Economic Strategy (2007), particularly in relation to the strategic priorities of 'Infrastructure Development and Place' and 'Equity';

- The National Transport Strategy (NTS) (2006) and its associated documents, (the Freight Action Plan, the Bus Action Plan, Scotland's Railways and the High Level Output Statement (HLOS) for the railway network);

- The National Planning Framework (NPF) discussion draft (2008); and

- The Government's Consultation for a Scottish Climate Change Bill.

The work has also taken account of the Eddington Transport Study and the Stern Review, which provide additional context to inform the development of national objectives.

The next section provides a review of the relevant documentation that identifies specific policy direction for the STPR.

1.2.1 The Government Economic Strategy

The Government Economic Strategy states that the overall purpose of Government is to promote sustainable economic growth. The strategy sets targets to track progress in boosting Scotland's growth (GDP), productivity, population and labour market participation, and in delivering the desired characteristics of growth – solidarity, cohesion and sustainability. The five strategic priorities of: Learning, Skills and Well-being; Supportive Business Environment; Infrastructure Development and Place; Effective Government; and Equity are identified as being critical to economic growth. This relationship is shown in Figure 1.1.

The strategic priorities of 'Infrastructure Development and Place' and 'Equity' provide specific context for the STPR.

The key strategic approaches that the Scottish Government will pursue in relation to the strategic priority of Infrastructure and Place include:

- Focussing investment on making connections across and with Scotland better, improving reliability and journey times, seeking to maximise the opportunities for employment, business, leisure and tourism;
- Providing sustainable, integrated and cost-effective public transport alternatives to the car, connecting people, places and work across Scotland; and
- A planning and development regime which is joined up, and combines greater certainty and speed of decision making within a framework geared towards achieving good quality sustainable places and sustainable economic growth.

Figure 1.1 – Scottish Government: Strategic Approach

The key strategic approaches that the Scottish Government will pursue in relation to Equity include:

- Providing the opportunities – and incentives – for all to contribute to Scotland's sustainable economic growth;
- According greater priority to achieving more balanced growth across Scotland, to give all across Scotland the chance to succeed; and
- Promoting economic growth and environmental quality and responsibility as mutually advancing.

The Scottish Budget Spending Review 2007 outlines a National Performance Framework, which will underpin the delivery of the Government's Economic Strategy. It reaffirms the nine Purpose Targets, presents the 15 national outcomes and outlines 45 National Indicators. The STPR must consider its contribution to all the Purpose Targets, bearing in mind that the STPR covers the period 2012 – 2022:

Indicator	Target
Economic Growth (GDP)	To raise the GDP growth rate to the UK level by 2011 To match the growth rate of small independent EU countries by 2017
Productivity	To rank in the top quartile for productivity among our key trading partners in the OECD by 2017
Participation	To maintain our position on labour market participation as the top performing country in the UK and to close the gap with the top five OECD economies by 2017
Population	To match average European (EU15) population growth over the period from 2007 to 2017, supported by increased healthy life expectancy in Scotland over this period
Solidarity	To increase overall income and the proportion of income earned by the three lowest regions by 2017
Cohesion	To narrow the gap in participation between Scotland's best and worst performing regions by 2017
Sustainability	To reduce emissions over the period to 2011 To reduce emissions by 80 per cent by 2050

Table 1.1 – Government's central Purpose: Indicators and Targets

The 15 National Outcomes support the 9 Purpose Targets and describe in more detail what the government wants to achieve. Those National Outcomes relevant to the STPR are as follows:

- We live in a Scotland that is the most attractive place for doing business in Europe;
- We realise our full economic potential with more and better employment opportunities for our people;
- We live our lives safe from crime, disorder and danger;
- We live in well-designed, sustainable places where we are able to access the amenities and services we need;
- We value and enjoy our built and natural environment and protect it and enhance it for future generations;
- We reduce the local and global environmental impact of our consumption and production; and

- Our public services are high quality, continually improving, efficient and responsive to local people's needs;

The National Indicators that the STPR will have a key role in contributing towards are:

- Reducing the proportion of driver journeys delayed due to traffic congestion;
- Increasing the proportion of journeys to work made by public or active transport;
- Improving people's perceptions of the quality of public services delivered; and
- Reducing overall ecological footprint.

1.2.2 National Transport Strategy

The National Transport Strategy (NTS)[1], along with its associated documents for rail, bus and freight, was published in 2006. The three key strategic outcomes of the NTS were subsequently endorsed by the new Scottish Government and are aligned to the Government's Purpose. The three key strategic outcomes for transport are:

- **Improve journey times and connections**, to tackle congestion and the lack of integration and connections in transport;
- **Reduce emissions**, to tackle the issues of climate change, air quality and health improvement; and
- **Improve quality, accessibility and affordability**, to give people a choice of public transport, where availability means better quality transport services and value for money or an alternative to the car.

1.2.3 National Planning Framework

The first National Planning Framework (NPF) for Scotland (2004) set out a strategy for Scotland's development to 2025, providing a national context for development plans and planning decisions and helping to inform the wider programmes of government, public agencies and local authorities. The Planning etc. (Scotland) Act 2006 places subsequent NPFs on a statutory footing.

The 'National Planning Framework for Scotland 2 – Discussion Draft' (2008) takes forward the spatial aspects of the Government's Economic Strategy and provides further detail on the spatial development of Scotland up to 2030. The NPF2 will play a key role in co-ordinating policies with a spatial dimension and integrating and aligning strategic investment priorities to enable each part of the country to play to its strengths in contributing to the Government's Purpose and strategic objectives. It focuses strongly on priorities for the improvement of infrastructure to support Scotland's long-term development, and for transport infrastructure it supports the three strategic outcomes of the NTS.

[1] Scotland's National Transport Strategy, Smarter Scotland, Scottish Executive, December 2006

The Planning Act makes provision for the NPF to be used to designate certain developments as national developments that are considered essential to delivery of the spatial strategy and establishes specific procedures for the consideration of such developments. The NPF2 Discussion Draft puts forward a draft proposed list of national developments informed by Report 1 of the STPR, and which need to be considered in developing the STPR:

Five of the designated national developments are particularly relevant to STPR:

- Replacement Forth Crossing;
- Edinburgh Airport Enhancement;
- Glasgow Airport Enhancement;
- Grangemouth Freight Hub; and
- Rosyth International Container Terminal.

Output from the STPR will further inform the final NPF2 and consideration will be given to whether additional national developments require to be designated as a result.

1.2.4 Climate Change Policy

Responding to climate change is a policy priority for the Scottish Government in achieving its central Purpose of sustainable economic growth, reflected in its commitment to reduce emissions by 80 per cent by 2050. The Scottish Government will be introducing a Scottish Climate Change Bill to place its emission reduction commitment on a statutory footing and to put in place a statutory framework to support delivery of the target. Consultation on the Bill was undertaken between January and April 2008.

The Scottish Government is also a partner in the UK Climate Change Bill, which proposes a statutory target of 60 per cent reduction in emissions by 2050. The UK Bill makes provision for the establishment of a Committee on Climate Change to advise governments on, among other things, emissions budgets over a series of three five-year budget periods. In doing so, it will consider the emission reduction potential from across the economy including the transport sector. The Committee is due to report in December 2008.

Transport accounts for around 23 per cent of Scotland's greenhouse gas emissions (Scottish Transport Statistics, 2007) and is the second largest contributing sector behind energy supply. Growth in emissions from the transport sector contrasts with the decline experienced by most other sectors of the Scottish economy. While technological improvements have delivered some benefits in terms of reduced emissions, these have largely been offset or outstripped by rising demand and travel choices being made by transport users.

It is generally recognised that the transport sector will be one of the most difficult sectors from which to reduce emissions. The development of new low-carbon fuel alternatives will be expensive and is only likely to occur in the mid to long term, whilst the social/economic costs of reducing travel demand could also be high. For these reasons, many studies, including the influential Stern Review of the Economics of Climate Change (2006), suggest that transport will be among the last sectors from which to obtain significant cost-effective reductions in emissions.

Scotland's Climate Change Programme 'Changing Our Ways' and the consultation document for the Scottish Climate Change Bill recognise the challenges of reducing transport emissions in the Scottish context. The Scottish Government has fewer policy levers available to achieve emissions reductions than the UK Government, which may lead to limitations in the potential for devolved policies to achieve large savings. It is generally held that 'hard' policy measures such as taxation and regulation of product standards may have more potential than softer, devolved measures. With respect to transportation specifically, many of the levers that are most likely to effect change are reserved policy, such as vehicle taxation and fuel duty, or lie at the EU level in terms of, for example, product standards or through the EU's emission trading scheme.

For the STPR, the added challenge is that it focuses on the strategic transport network, which by its nature, promotes longer inter-urban journeys and the movement of freight. While opportunities exist and will improve over the next few decades to promote emissions reductions on the strategic networks, the greatest opportunity to impact on transport emissions in the decade ahead perhaps more readily exists in addressing mode choices and travel demand at a regional and local level.

Despite these limitations the Scottish Government is committed to demonstrating leadership in tackling Climate Change. It will publish along side the Climate Change Bill a strategic overview document to describe how it will deliver against its 2050 emissions target. This overview will set out how each sector of the Scottish economy might contribute to the Government's emission targets, and describe the emission reduction pathways to be taken by each sector.

Greater clarity on these pathways to 2050 will only emerge following the reporting of the STPR to Scottish Ministers. The approach taken by the STPR is that mitigation measures will be sought that are within the devolved competency of Scottish Ministers. The extent of intervention will need to be considered with other expectations in delivering the Government's central Purpose of sustainable economic growth. The STPR will adopt a transparent reporting system across social, economic and environmental indicators to appraise each of the interventions considered and recommended.

The output of the STPR will be an Indicative Transport Investment Plan for 2012 to 2022, the components of which would become committed by Government during subsequent Spending Reviews. The opportunity exists in feeding into each Spending Review to review elements of the Investment Programme in light of more developed policy on emissions reduction to ensure that it is compliant with any emissions reduction pathway introduced for the transport sector.

2 National Objectives and STPR Policy Expectations

2.1 Introduction

More detailed national objectives and policy expectations have been developed. These are aligned to the policy context and evidence emerging from the assessment of performance of the network.

2.2 National Objectives

In seeking to contribute to the Government's central Purpose, the STPR will focus on interventions that contribute to the three Key Strategic Outcomes (KSOs) identified in the National Transport Strategy. National objectives have been set under each of the KSOs. The national objectives have been set taking account of both the policy context and key issues emerging from the assessment of the strategic transport network. The performance of the network/node/corridor against these objectives has then been used to develop additional objectives at an urban network/ strategic node and corridor level where appropriate.

Improved Journey Times and Connections, to tackle congestion and the lack of integration and connections in transport that impact on the potential for continued and sustainable economic growth.

In particular, the STPR will generate options, based on current and forecast performance, by exploring the opportunities to:

- Promote 'competitive' inter-urban journey times;
- Reduce inter-urban journey time on public transport ;
- Promote journey time reduction on the trunk road network for prioritised vehicles and users (e.g. high occupancy vehicles, freight, bus) where STAG appraisal demonstrates that a strong economic case can be balanced with environmental objectives. Elsewhere on the trunk road network provide improvements to journey time reliability;
- Promote journey time reductions between the central belt[2] and Aberdeen/Inverness primarily to allow business to achieve an effective working day[3] when travelling between these centres;
- Maximise the labour catchment area in city regions where economic evidence demonstrates that this is required (favouring public transport and high occupancy vehicles and balancing with other policy measures that promote reduction in need to travel i.e. planning policy); and
- Support the development and implementation of relevant proposed national developments identified in the NPF2.

[2] Central Belt is defined for the purposes of this report as being the area directly served by the Edinburgh and Glasgow urban networks, Corridor 13 and parts of Corridors 9, 10 and 18.
[3] Effective Working Day is defined for the purposes of this report as a day away from the usual place of work where at least half of the day (travel time + work time) is spent working at the destination.

Reduced emissions, to tackle the issues of climate change, air quality and health improvement. Recognising the challenges of reducing emissions the overall objectives for the transport network are to adopt a stepped approach to reducing transport emissions towards 2050:

- Reduce CO_2 emissions per person km;
- Stabilise total CO_2 emissions; and
- Reduce CO_2 emissions in line with expectations from the emerging climate change bill.

Mitigation measures will be sought that are within the devolved competency of the Scottish Government. It is recognised that the extent of intervention will need to be considered with other expectations in delivering the Government's central Purpose of increasing sustainable economic growth. It is also recognised that many of the potential measures to reduce emissions are reserved to the UK Government or are the responsibility of the European Union. This restricts the extent to which the STPR can comprehensively address these issues. A stepped approach to reducing transport emissions over the period to 2050 is, therefore, adopted for the strategic transport networks, starting with measures to reduce the intensity of transport emissions.

Improved Quality, Accessibility and Affordability to give people a choice of public transport, where availability means better quality transport services and value for money or an alternative to the car.

- To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan[4] through the STPR period;
- Promote seamless travel;
- Improve the competitiveness of public transport relative to the car; and
- Improve overall perceptions of public transport.

2.3 STPR Policy Expectations

2.3.1 Key Connections

In assessing the performance of the network, the STPR will pay particular attention to the objectives for the network as a whole. It is expected that the network should:

- Link major urban centres;
- Provide links to airports and ports;
- Provide links to international gateways and cross borders;
- Link peripheral communities;
- Link areas of population change;
- Facilitate freight routes;
- Link key tourist areas; and

[4] http://www.transportscotland.gov.uk/reports/publications-and-guidance/road/j9041-00.htm

- Link areas of economic growth and regeneration areas of national significance.

2.3.2 Investment Hierarchy

In developing and appraising options, it is recognised that investment in the national strategic transport network should be targeted:

- Firstly, at **maintaining and safely operating** existing assets;
- Secondly, at promoting a range of measures, including innovative solutions, to **make better use of existing capacity** (Interventions may include technology based, fiscal and 'soft measures' in addition to engineering solutions); and
- Thirdly, at promoting **targeted infrastructure improvements**.

In this context, it is important to recognise that investment in rail, due to its nature, can result in an overlap between the first and second levels of the hierarchy.

The STPR will therefore not bring forward recommendations for infrastructure improvements without first considering the requirement for, and effectiveness of, interventions in the first two categories.

3 Urban Network/ Strategic Node & Corridor Objectives

3.1 National Strategic Transport Network

Within Report 1, the elements of the national strategic transport network were categorised as:

- **Urban Networks** – the nationally significant parts of the transport network within the four largest cities of Aberdeen, Dundee, Edinburgh and Glasgow;
- **Strategic Nodes** – due to their location, Perth and Inverness act as strategically significant nodes on the national transport network; and
- **Corridors** – an area containing the transport network connecting the four largest cities and strategic nodes to each other, to the national boundaries, or to the peripheral and rural communities.

A map showing the Urban Networks, Strategic Nodes and Corridors is shown below in Figure 3.1.

Having developed the national objectives, based on the policy context and strategic issues emerging from Report 1, each urban network/ strategic node and corridor is then assessed according to each of these.

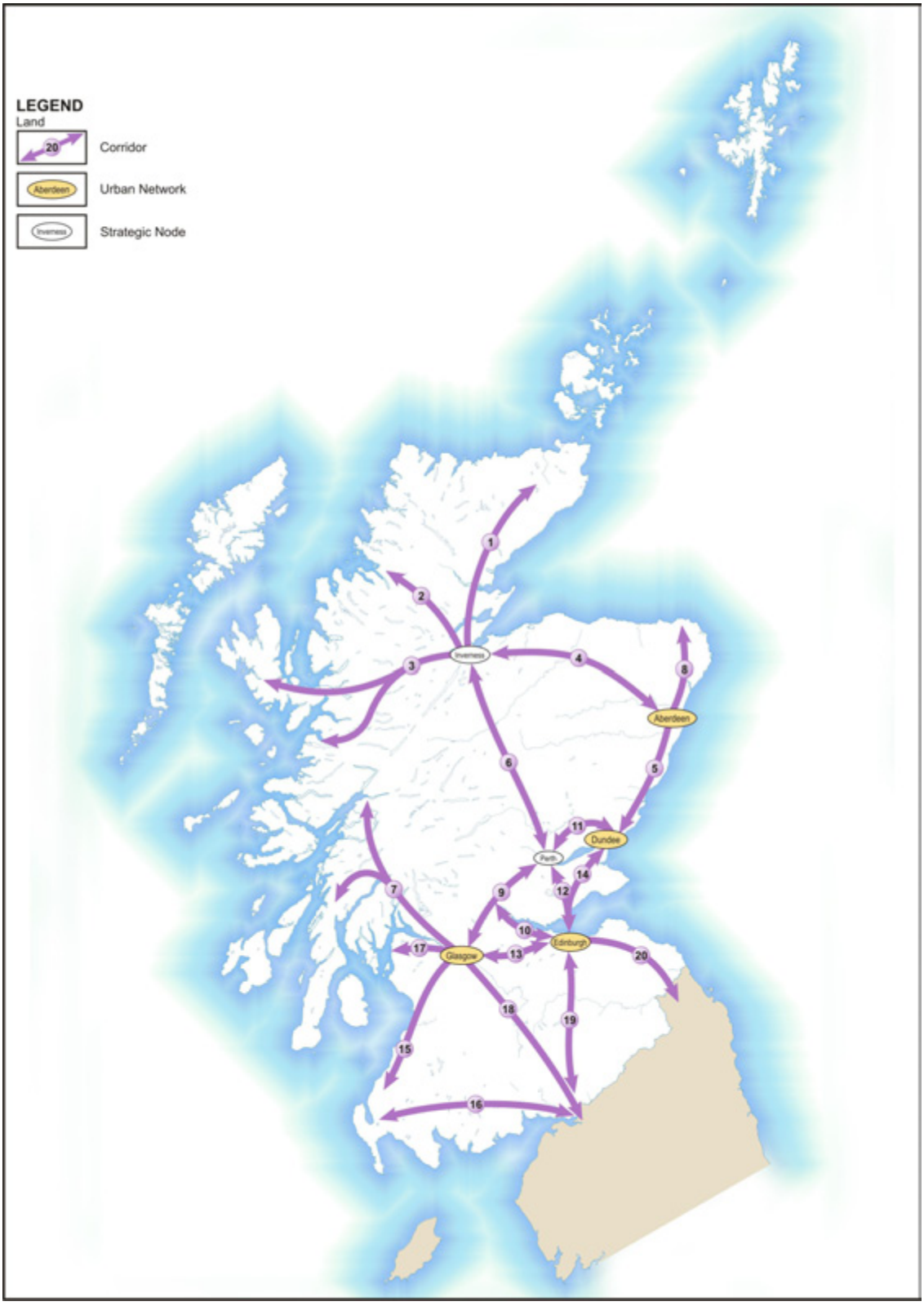

Figure 3.1 – National Strategic Transport Network: Land Based

3.2 Assessing Performance and Significance

The issues identified in Report 1 are assessed against policy expectations and national objectives. This allows identification of specific issues which affect the ability of the network/node/corridor to fulfil its expected role(s). Importantly, this assessment is not a repetition of all issues assessed in Report 1. Rather, it uses the national objectives, the expectations of what the strategic transport network should do, the policy context set out in Chapter 2 and the concept of 'significance' to capture the key issues for the STPR within the network/node/corridor. In this context, the review is concerned with identifying problems or issues which have a material impact on the achievement of objectives at a national level. An issue that is not considered to be significant in STPR may still be significant in a local context.

3.2.1 Improved Journey Times and Connections

Under this KSO, the performance assessment addresses:

- The location and performance of points that form strategic connections in our urban networks, such as rail and bus stations;
- Inter-urban journey times by car, bus and rail;
- Freight significance by considering the density of road freight using changes in the HGV kilometres per route kilometre;
- Changes in journey time reliability;
- Changes in labour catchment area(s); and
- Issues relating to proposed national developments from the NPF2.

Overall journey times on public transport are affected by service frequency and any interchange requirements, including proximity of interchange facilities to the ultimate origin and destination. Some of these issues are taken into consideration in calculating a comparative journey time by public transport compared with the car, which is used to identify potential issues and to formulate related objectives.

3.2.2 Reduced Emissions

Under this KSO, the performance assessment addresses:

- Demand management measures;
- Change in CO_2 per person kilometre; and
- Change in overall CO_2 emissions

In considering the issue of change in emissions, the results from Report 1 have been used to determine urban networks, nodes or corridors that have particular performance issues in terms of the percentage increase, the absolute value of increase or the absolute value of emissions. Demand management measures are relevant in this context, since they have a direct bearing on the absolute level of demand for transport in a network, node or corridor, and also on the relative attractiveness of public and private transport. Both parameters of absolute demand and modal share are potential drivers of overall CO_2 emissions levels, and CO_2 per person kilometre.

3.2.3 Improve Quality, Accessibility and Affordability

Under this KSO, the performance assessment addresses:

- Road safety;
- Integration, connections and accessibility;
- Rail crowding;
- Bus user surveys; and
- Security perceptions of public transport users.

In considering the issue of road safety, the results from Report 1 have been used to determine urban network, nodes or corridors where the performance is significantly worse than the national average for accident rates or severity rates. This therefore identifies those parts of the network where the ongoing improvement work carried out as part of the management of the network, (e.g. signing/lining improvements etc), is unlikely to be sufficient to address the scale of the identified problem.

3.3 Developing Specific Objectives

Having established which national objectives are of importance and what the nature of the issues are that are of significance for STPR, these are brought together in formulating specific objective(s) for the network/node/corridor. The following section summarises all of the objectives developed for the strategic network.

3.4 Summary of Objectives

3.4.1 Introduction

The following sections set out the detailed analysis of the urban network, strategic node and corridor performance in relation to the national objectives. A summary of the objectives generated from this process is set out below.

While the objectives are reported under individual networks/nodes/corridors, it is important to recognise that some objectives may impact beyond the specific geographic area under which they are reported.

3.4.2 Urban Network and Strategic Nodes Summary

Aberdeen

- To improve accessibility, primarily by public transport, to and between the City Centre, Dyce, the airport and South East Aberdeen;
- To promote continuing reduction in accident rates and severity rates across the strategic transport network; and
- To promote journey time reductions, particularly by public transport, between the Aberdeen and the central belt primarily to allow business to achieve an effective working day when travelling between these centres.

Dundee

- To reduce the conflict between longer distance and local traffic;
- To improve bus/rail interchange opportunities;
- To improve the public transport accessibility and competitiveness to Dundee West;
- To promote continuing reduction in accident rates and severity rates across the strategic transport network; and
- To promote journey time reductions, particularly by public transport, between Aberdeen and the central belt primarily to allow business to achieve an effective working day when travelling between these centres.

Edinburgh

- To maintain the 60-minute commutable labour market area at the current level, with a particular focus on linking areas of economic activity;
- To enhance public transport interchange opportunities, where feasible to do so;
- To increase public transport capacity and frequency between Fife and Edinburgh;
- To promote continuing reduction in accident rates and severity rates across the strategic transport network;
- To promote journey time reductions, particularly by public transport, between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres; and
- To promote efficient and effective transport links to support the development and implementation of the proposed national development at Edinburgh Airport identified in the NPF2.

Glasgow

- To increase the public transport access to and between areas of economic activity and regeneration with minimal need for interchange;
- To improve the efficiency of the M8 motorway during periods of peak demand with a focus on reducing the conflict between longer distance and local traffic, increasing the people carrying capacity and freight carrying capacity of existing road, and demand management;
- To address rail capacity and connectivity issues in central Glasgow;
- To promote continuing reduction in accident rates and severity rates across the strategic transport network;
- To promote journey time reductions, particularly by public transport, between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres; and
- To promote efficient and effective transport links to support the development and implementation of the proposed national development at Glasgow Airport identified in the NPF2.

Inverness

- To reduce the conflict between longer distance and local traffic;
- To improve connectivity, particularly by public transport between Inverness city centre and the growth area to the east including Inverness Airport;
- To promote continuing reduction in accident rates and severity rates across the strategic transport network; and
- To promote journey time reductions, particularly by public transport, between Inverness and the central belt primarily to allow business to achieve an effective working day when travelling between these centres.

Perth

- To contribute to reducing the emissions per person kilometre;
- To promote continuing reduction in accident rates and severity rates across the strategic transport network; and
- To promote journey time reductions, particularly by public transport, between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.

Corridor 1 – Inverness to Wick/Thurso and Northern Isles

- To enhance public transport accessibility and reduce public transport journey time to and from Inverness; and
- To reduce the fatal and severe accident rates to the national average or lower.

Corridor 2 – Inverness to Ullapool and Western Isles

- To reduce the accident, fatal and severe rates to the national average.

Corridor 3 – Inverness to Fort William

- To reduce the accident rate to current national average without adversely impacting on accident severity (see also Corridor 7).

Corridor 4 – Aberdeen to Inverness

- To improve connectivity, particularly by public transport between Inverness city centre and the growth area to the east including Inverness Airport;
- To improve journey time and increase opportunities to travel, particularly by public transport, between Aberdeen and Inverness; and
- To reduce the accident rate and severity rate to current national average.

Corridor 5 – Dundee to Aberdeen

- To improve the public transport competitiveness between Aberdeen and Dundee (and hence onwards to the central belt);
- To contribute to reducing both overall emissions and emissions per person kilometre through providing for alternatives to road freight movement on the corridor;
- To promote continuing reduction in accident rates and severity rates across the strategic transport network; and
- To promote journey time reductions, particularly by public transport, between the central belt and Aberdeen primarily to allow business to achieve an effective working day when travelling between these centres.

Corridor 6 – Inverness to Perth

- To reduce journey time and increase opportunities to travel between Inverness and Perth (and hence onwards to the central belt);
- To improve the operational effectiveness of the A9 as it approaches Perth and Inverness;

- To address issues of driver frustration relating to inconsistent road standard, with attention to reducing accident severity; and
- To promote journey time reductions, particularly by public transport, between the central belt and Inverness primarily to allow business to achieve an effective working day when travelling between these centres.

Corridor 7 – Glasgow to Oban / Fort William

- To provide improved road standards and overtaking opportunities; and
- To reduce accident severity to the national average.

Corridor 8 – Aberdeen to North East Scotland and Northern Isles

- To promote continuing reduction in accident rates and severity rates across the strategic transport network.

Corridor 9 – Glasgow to Perth

- To address current and forecast rail overcrowding into Glasgow;
- To improve the efficiency and reliability of the operation of the southern sections of the M80 on approach to Glasgow, particularly for priority vehicles;
- To reduce the severity of accidents to the national average; and
- To promote journey time reductions, particularly by public transport, between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.

Corridor 10 – Edinburgh to Stirling

- To improve access to Grangemouth port and freight hub;
- To address shortfalls in the provision of public transport to and from Edinburgh and increase public transport modal share;
- To promote continuing reduction in accident rates and severity rates across the strategic transport network; and
- To promote efficient and effective transport links to support the development and implementation of the proposed national developments at Grangemouth and Edinburgh Airport identified in the NPF2.

Corridor 11 – Perth to Dundee

- To promote continuing reduction in accident rates and severity rates across the strategic transport network; and

- To promote journey time reductions, particularly by public transport, between the central belt and Aberdeen primarily to allow business to achieve an effective working day when travelling between these centres.

Corridor 12 – Edinburgh to Perth

- To reduce Edinburgh to Perth public transport journey times and increase opportunities to travel by public transport;
- To promote continuing reduction in accident rates and severity rates across the strategic transport network;
- To promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres;
- To promote efficient and effective transport links to support the development and implementation of the proposed national developments at Rosyth, Forth Crossing and Edinburgh Airport identified in the NPF2; and
- To improve the efficiency of the M90/A90 during periods of peak demand with a focus on reducing the conflict between longer distance and local traffic.

Corridor 13 – Glasgow to Edinburgh

- To increase public transport capacity and reduce journey time between Edinburgh and Glasgow;
- To make best use of the available road space and better manage peak demand;
- To increase public transport capacity and frequency between Livingston and Edinburgh;
- To contribute to both a reduction in emissions per person kilometre and a reduction in overall emissions;
- To promote continuing reduction in accident rates and severity rates across the strategic transport network; and
- To promote efficient and effective transport links to support the development and implementation of the proposed national developments at Grangemouth and Edinburgh Airport identified in the NPF2.

Corridor 14 – Edinburgh to Dundee

- To reduce public transport journey time between Edinburgh and Dundee;
- To increase public transport capacity and frequency between Fife and Edinburgh;

- To promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres;

- To promote efficient and effective transport links to support the development and implementation of the proposed national developments at Rosyth, Forth Crossing and Edinburgh Airport identified in the NPF2;

- To promote continuing reduction in accident rates and severity rates across the strategic transport network; and

- To improve the efficiency of the M90/A90 during periods of peak demand with a focus on reducing the conflict between longer distance and local traffic.

Corridor 15 – Glasgow to Stranraer and South West

- To increase rail capacity between Ayrshire and Glasgow including the Kilmarnock line;

- To ensure efficient and effective freight access to the port facilities at Loch Ryan;

- To promote continuing reduction in accident rates and severity rates across the strategic transport network; and

- To reduce the conflict between longer distance and local traffic with a focus on identified key constraint points.

Corridor 16 – Stranraer to North West England

- To ensure efficient and effective freight access to the port facilities at Loch Ryan; and

- To promote continuing reduction in accident rates and severity rates across the strategic transport network.

Corridor 17 – Glasgow to Inverclyde and Islands

- To increase capacity and reduce journey times by public transport between Glasgow and Inverclyde;

- To facilitate freight access to Greenock port;

- To improve the efficiency of the A8/M8 during periods of peak demand with a focus on reducing the conflict between longer distance and local traffic;

- To reduce the accident rate to the national road type average on the M8 and A8; and

- To promote efficient and effective transport links to support the development and implementation of the proposed national development at Glasgow Airport identified in the NPF2.

Corridor 18 – Glasgow to North West England and Beyond

- To make best use of the available road space and better manage peak demand taking into account the need to contribute to emissions reduction;
- To contribute to emissions reduction by facilitating an increase in the proportion of freight passing through the corridor that is carried by rail; and
- To promote continuing reduction in accident rates and severity rates across the strategic transport network.

Corridor 19 – Edinburgh to North West England and Beyond

- To promote continuing reduction in accident rates and severity rates across the strategic transport network.

Corridor 20 – Edinburgh to North East England and Beyond

- To increase the attractiveness and capacity of public transport into Edinburgh to reduce crowding and forecast road congestion; and
- To promote continuing reduction in accident rates and severity rates across the strategic transport network.

3.5 Urban Network and Strategic Node Objectives

3.5.1 Introduction

The following section describes the objective setting process for the four urban networks (Aberdeen, Dundee, Edinburgh and Glasgow) and the two strategic nodes (Inverness and Perth). This is carried out in two stages comprising:

- Summary of Key Issues to be addressed by the Objectives; and
- Performance compared to Expectations and Objectives.

In comparing the performance to the Expectations, a tabular format has been used to capture key evidence from Report 1 (Review Current and Future Network Performance) and comment upon its overall level of significance to the relevant National Objective. The table then shows any STPR objective that is developed as a result of the assessment. It should be noted that the same objective may be restated in a number of rows, as the process of objective formulation has sought to capture individual elements and express these in compound form where appropriate.

3.5.2 Aberdeen

Summary of Key Issues to be addressed by the Objectives

Much of the forecast economic development in Aberdeen is expected to take place on the edge of the city in areas which are not currently well served by public transport. Of particular note are the areas of economic activity at Dyce and South East Aberdeen. Dyce is doubly important as it is the location of Aberdeen Airport, an important international gateway for the city and its region. As things stand, economic growth will result in a largely car based economy. There is a need to tackle this in the context of other major Scottish cities by achieving a larger proportion of journeys by public transport, and it is particularly important to maintain general level of access to the city centre and maintain an effective labour catchment area. Access to the city centre is also important, particularly due to the location of the port, which is a key part of the north-east economy.

The importance of linking Aberdeen more effectively to the central belt is noted and is addressed within Corridors 5, 9, 11, 12 and 14.

Performance compared to Expectations

Aberdeen					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times Reduce inter-urban journey time on public transport	Bus and rail stations are co-located and act as public transport hub for connections to other centres. Planned forecourt enhancements will further improve integration. The AWPR will provide enhanced opportunities to link the corridor road networks. No identified urban network issues relating to the linkage between corridors and the linkage to Aberdeen.	There are no significant issues identified in relation to the function and location of the strategic interchange.	Section 5.1.3	No specific STPR objective
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time	The growth in freight movements measured by HGV kms per route km shows marginal growth for the corridors serving Aberdeen from the west and north. These also have low measured levels in 2005. The corridor to the south however shows a doubling of HGV kms per route km giving it the fifth highest level amongst the corridors for 2022. The construction of the Aberdeen Western	AWPR is forecast to address many problems associated with the urban network, so reducing the significance of any current issues. Opportunities on the existing A90 are localised and not significant within the strategic context.	Figure 4.33 Section 5.1.4	No specific STPR objective

Aberdeen					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	reliability.	Peripheral Route (AWPR) provides opportunities for reuse of road space on the existing A90 through Aberdeen. This will also provide some relief for routes to the port, although localised access issues may remain. Variation in journey time within the urban network in 2022 is expected to be significantly less than at present, due largely to the AWPR, meaning that journey time reliability will improve relative to 2005.	Overall these issues are not significant.	Figure 5.1.7	
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Currently travel time between Aberdeen and Edinburgh (around 200km) is around 3h 30min by car and rail and 4h 45 by bus. Between Aberdeen and Glasgow (235km) it is around 3h 30min by car, just over 5h by bus and just under 4h by rail. A round trip could therefore take between 7h and 10h depending on mode and destination, which does not permit those travelling to achieve an effective working day.[5]	Significant issue that is recognised in the context of the urban network and addressed in the appropriate corridors, networks and nodes linking Aberdeen to Edinburgh, Glasgow and beyond.	Figures 7.5.6, 7.9.6, 7.11.5 and 7.14.6	To promote journey time reductions, particularly by public transport, between Aberdeen and the central belt primarily to allow business to achieve an effective working day when travelling between these centres.
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	The Report 1 analysis indicated that Aberdeen would have a marginal reduction in population. However, local development plan proposals suggest that rather than a reduction occurring, the population would in fact increase. Access to areas of economic activity is an issue, but it is noted that most trips to these will continue to originate within the city itself. Relatively poor public transport access to these areas results in higher car dependency.	AWPR is expected to provide significant alleviation of congestion issues in the west of the city. Sustainable access to the areas of economic activity, particularly from the rest of the city, remains an issue of some significance.	Section 5.1.1 Section 5.1.5	To improve accessibility, primarily by public transport, to and between the City Centre, Dyce, the airport and South East Aberdeen.

[5] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Aberdeen					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	To support the development and implementation of proposed national development identified in the NPF2.	No national development schemes are proposed within this urban network.	No significant issues identified.	N/A	No specific STPR objective
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 10 per cent between 2005 and 2022, which is below the average across the corridors, networks and nodes. In terms of demand management, two bus based Park-&-Ride sites are operated; the A90 Bridge of Don is well used however there is significant reserve capacity at the A944 location to the west of the city. Bus priority systems have been put in place on major radial routes. There is no suburban rail network. The predicted rise, although below average is important when seen in the context of the focus of bus services on radial routes to the city centre limits the ability of the network to effectively serve areas at the periphery such as the emerging areas of economic activity, and therefore limits the potential to achieve further reductions.	While the impact of this issue is less significant in Aberdeen than in other areas, the potential for the emerging peripheral locations to increase road dependency represents a risk to meeting this objective. This therefore could be a significant issue.	Section 5.1.5	To improve accessibility, primarily by public transport, to and between the City Centre, Dyce, the airport and South East Aberdeen.
	Stabilise total CO_2 emissions Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, Aberdeen is predicted to contribute just under 3 per cent of the predicted increase between 2005 and 2022. By 2022, Aberdeen is predicted to be contributing just under 3 per cent of the overall road based emissions output.	The opportunity to impact on such small increases is limited. No significant issues identified.	Section 5.1.5	No specific STPR objective.

Aberdeen					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this network, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	N/A	To promote continuing reduction in accident rates and severity rates across the strategic transport network.
	Promote seamless travel	The bus and railway stations in the city centre are well integrated, with additional improvements planned. It is noted that Dyce station is not well integrated with the airport and only 2 per cent of journeys to and from the airport are made by public transport compared with a UK average for airports of 10 per cent.	Poor public transport modal split for Aberdeen Airport is symptomatic of other peripheral activity areas. This is a significant issue.	Section 5.1.3	To improve accessibility, primarily by public transport, to and between the City Centre, Dyce, the airport and South East Aberdeen.
	Improve the competitiveness of public transport relative to the car	Against a background of increased demand to travel, the public transport mode share within the urban network remains at 7 per cent between 2005 and 2022. Taking into account the corridors serving Aberdeen and the movements amongst these, the overall level of public transport mode share remains at 6 per cent between 2005 and 2022. These overall results mask some variation, with movements such as Corridor 4 (Aberdeen to Inverness) to Corridor 8 (Aberdeen to North East Scotland) having very low levels of public transport use. Given the dispersed nature of the population outside of the city, there will be a limit to how competitive public transport can be, hence the promotion of edge of city Park-&-Ride opportunities. Location of areas of economic activity on the periphery of the city where public transport linkages are at their least effective coupled with the higher than average car ownership levels in the surrounding areas presents a high car dependency situation.	While public transport linkages from the surrounding area to the city will continue to be important, the majority of trips associated with the areas of economic activity continue to be to and from the city and this should be where attention is focussed. This issue is of some significance.	Tables 5.1.1 and 5.1.2	To improve accessibility, primarily by public transport, to and between the City Centre, Dyce, the airport and South East Aberdeen.
	Improve overall perceptions of	Some potential for future rail overcrowding between	May limit increase in rail	Section 5.1.5	To improve accessibility,

Aberdeen					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	public transport	Dyce and Stonehaven. Around 98 per cent of the population in Aberdeen are within 400m of a bus stop and there are partnership agreements in place between the Council and major bus operators.	mode share for city centre trips and is therefore of significance.		primarily by public transport, to and between the City Centre, Dyce, the airport and South East Aberdeen.
	Safety	Proportion of severe accidents is lower than national average.	No significant issues identified.	Section 5.1.5	No specific STPR objective*

* no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

3.5.3 Dundee

Summary of Key Issues to be addressed by the Objectives

The A90 is routed through Dundee, leading to conflict between strategic and local traffic, particularly at peak times. In terms of its relationship with the rest of Scotland, Dundee could provide a labour pool to support the expected economic growth in and around Edinburgh and the central belt, but it is currently outside of realistic commuting range as a result of long journey times. The area of economic activity at Dundee West lacks effective public transport access, with most bus routes being focussed on radial routes but Dundee's bus network offers continuing opportunity for modal shift, building on the Quality Partnership. A potential barrier to this is the lack of integration between bus and rail services. Given the objectives within the Edinburgh to Dundee corridor relating to improvements in rail journey time, and current services, it will be important to support these by giving adequate access opportunities. While there are some suburban rail stations, these have a low frequency of service.

The importance of linking Dundee more effectively to the central belt, and in particular Edinburgh is noted and is addressed within Corridors 9, 12 and 14.

Performance compared to Expectations

Dundee					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times. Reduce inter-urban journey time on public transport.	Bus and rail stations are located over 1km apart and are separated by busy urban roads including the inner ring road.	Separation of bus and rail stations is a significant issue in terms of achieving effective connectivity within the urban network to inter-urban services.	Section 5.2.3	To improve bus/rail interchange opportunities.
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time	Report 1 highlights the conflict between local and strategic traffic on the A90 through the city and notes that the A90 within the city is approaching its theoretical capacity. It is particularly affected by the operation of at-grade junctions along the length of the route. The volume of freight movements measured by HGV kms per route km shows around a 50 per cent growth between 2005 and 2022 for the corridors to the west	Operational problems on the Kingsway (A90) affect Dundee and north-east Scotland including Aberdeen and are therefore of wider significance than just the urban network.	Section 5.2.5 Figure 4.33	To reduce the conflict between longer distance and local traffic.

Dundee					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	reliability.	and south. The corridor to the north however, linking to Aberdeen, shows a doubling of HGV kms per route km giving it the fifth highest level amongst the corridors for 2022. This growth can only exacerbate the conflict between local and strategic traffic through Dundee. Journey times are expected to be generally consistent through the day, although some hotspots, such as the Swallow roundabout on the A90 are of significance.		Figure 5.2.6	
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Dundee is located on the main linkages between Aberdeen and Edinburgh/Glasgow. Currently travel time between Aberdeen and Edinburgh (around 200km) is around 3h 30min by car and rail and 4h 45 by bus. Between Aberdeen and Glasgow (235km) it is around 3h 30min by car, just over 5h by bus and just under 4h by rail. A round trip could therefore take between 7h and 10h depending on mode and destination, which does not permit those travelling to achieve an effective working day.[6]	Significant issue to be addressed in the corridors linking the networks.	Figures 7.5.6, 7.9.6, 7.11.5 and 7.14.6	To promote journey time reductions, particularly by public transport, between Aberdeen and the central belt primarily to allow business to achieve an effective working day when travelling between these centres.
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	Between 2005 and 2022, both population and employment totals in the city are forecast to remain stable, but there are some changes expected between areas within the city. Most notable is the decrease in employment within the traditional central area and a growth along the western part of the Kingsway (A90). This area at Dundee West shows a decline of around five per cent in its labour catchment area by 2022 when compared with 2005. This area also suffers from poor public transport access. Dundee Waterfront is expected to contribute to some	Reduced accessibility to Dundee West results from performance issues on the Kingsway and lack of effective public transport alternatives. This is a significant issue.	Table 5.2.1 and Section 5.2.2	To reduce the conflict between longer distance and local traffic. To improve the public transport accessibility and competitiveness to Dundee West.

[6] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Dundee					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		increase in population in the city centre. Around 40 per cent of trips on the A90 are through trips between North East Scotland and elsewhere, emphasising the importance of Dundee in facilitating through movements. Fife has the highest proportion of the trips associated with the city compared with the other two strategic approaches, with two-thirds of trips to and from Dundee.		Section 5.2.4	
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this network.	No significant issues identified.	N/A	No specific STPR objective
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 11 per cent between 2005 and 2022, which is around the average across the corridors, networks and nodes. In terms of demand management, Dundee has a well established bus network that has been supported in recent years by improvements as part of a Quality Bus Partnership agreement.	Issues are of significance but are at an average level in comparison to the national network. Objectives to improve public transport and reduce congestion should, however, have a positive impact.	Section 5.2.5	To reduce the conflict between longer distance and local traffic. To improve the public transport accessibility and competitiveness to Dundee West. To improve bus/rail interchange opportunities.
	Stabilise total CO_2 emissions	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, Dundee is predicted to contribute just over 1 per cent of the	The level of contribution to the predicted increase is very low,	Section 5.2.5	

Dundee					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	predicted increase between 2005 and 2022. By 2022, Dundee is predicted to be contributing just over 1 per cent of the overall road based emissions output. In terms of demand management, Dundee has a well established bus network that has been supported in recent years by improvements as part of a Quality Bus Partnership agreement.	and the opportunity to impact on this is limited. Objectives to improve public transport and reduce congestion should, however, have a positive impact.		
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this network, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	N/A	To promote continuing reduction in accident rates and severity rates across the strategic transport network.
	Promote seamless travel	The main urban bus interchange is at the heart of the city centre serving the commercial area. Regional and longer distance bus services are concentrated at the bus station, which is not well integrated with the rail station.	Lack of opportunity for bus to act as a key feeder to rail services is a significant issue.	Sections 5.2.3 and 5.2.5	To improve bus/rail interchange opportunities.
	Improve the competitiveness of public transport relative to the car	The movements between Dundee and the corridor to Edinburgh and between the Dundee to Aberdeen corridor and the Edinburgh to Dundee corridor have the highest levels of public transport modal share at around 10 per cent. In comparison, public transport only accounts for around 5 per cent of trips between Aberdeen and Dundee. Public transport accounts for a very small proportion of the trips between the Perth to Dundee corridor and the Edinburgh to Dundee corridor, however this movement is itself significantly smaller than others in terms of overall demand. Just over half of the households in Dundee have access to a car compared with a national average figure of 67 per cent meaning that public transport should have a natural market for services.	Lack of effective wider public transport access to Dundee West is a key issue. The issues of modal split on the corridors are more properly an issue to be addressed within the corridors themselves. These issues are still of significance to the urban network.	Table 5.2.1 and 5.2.2 Section 5.2.5	To improve the public transport accessibility and competitiveness to Dundee West.

Dundee					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		Public transport access to Dundee West is limited to localised services as opposed to wider connectivity.			
	Improve overall perceptions of public transport	The service frequency at suburban railway stations is low. Signalling and line speed restrictions on journey times between Dundee and Edinburgh has a detrimental impact.	This is expected to be of greater significance at corridor level.	Section 5.2.5	No specific STPR objective
	Safety	Proportion of severe accidents is lower than national average.	No significant issues identified.	Section 5.2.5	No specific STPR objective*

* no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

3.5.4 Edinburgh

Summary of Key Issues to be addressed by the Objectives

The significant economic growth forecast for Edinburgh will require significant support from the transport network, particularly as the major growth areas to the west and south east of the city are generally less easy to access by public transport and easier to access by road than the traditional centre of activity in the city centre. The potential for road congestion to negatively impact on the catchment area, and therefore population that can service these jobs is a considerable risk. Rail services are in general overcrowded during peak periods and there are significant constraints in providing additional services or longer trains. The areas of expected employment increase have some level of public transport accessibility but it is far short of that available at the traditional focus of activity in the city centre. Edinburgh is also a key focus for tourism, acting in many cases as a gateway for Scotland as a whole. The importance of the airport for both this and for supporting the significant financial services sector is also recognised.

Performance compared to Expectations

Edinburgh					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times Reduce inter-urban journey time on public transport	The major rail stations at Waverley and Haymarket are well connected with local bus services that are routed along main roads adjacent to the stations. Future connectivity with the tram network at Haymarket and Edinburgh Park will enhance the connectivity to inter-urban services within the urban network. Some bus services, particularly longer distance, are concentrated at St Andrew's Square bus station, which is remote from the rail stations, leading to increased overall journey times where interchange is required.	The need to provide effective connectivity within the urban network to support strategic trips is of significance.	Section 5.3.3 Section 5.3.2 and 5.3.5	To enhance public transport interchange opportunities where feasible to do so.
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time	Some priority currently provided to support bus Park-&-Ride services, though this is on the local rather than strategic road network. The growth in freight movements measured by HGV kms per route km shows growth on all of the corridors serving Edinburgh, though results vary between marginal increases (Corridor 20 to NE England) and significant increase and highest overall level (Corridor 13 to Glasgow).	Forecast levels of road congestion are an area of concern. Increase in reliability should be seen in context of increased congestion and journey time i.e. it is the resultant of a poorer	Section 5.3.5 Figure 4.33	To maintain the 60-minute commutable labour market area at the current level, with a particular focus on linking areas of economic activity.

Edinburgh					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	reliability.	Forecast levels of road congestion will have a detrimental impact on the passage of prioritised vehicles without further intervention. Using the variation in performance for AM peak, off peak and PM peak as a proxy, by 2022 the difference in performance is reduced indicating greater reliability.	performing network. These issues are significant.	Section 5.3.5 Figure 5.3.7	
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Journey time between Edinburgh and Aberdeen (around 200km) it is around 3h 30min by car and rail and 4h 45min by bus. Between Edinburgh and Inverness (around 250km) it is around 4h by car and rail and around 5h by bus. A round trip could therefore take between 7h and 10h depending on mode, which does not permit those travelling to achieve an effective working day.[7]	Significant issue.	Figures 7.5.6, 7.9.6, 7.11.5 and 7.14.6	To promote journey time reductions, particularly by public transport, between the central belt and Aberdeen/ Inverness primarily to allow business to achieve an effective working day when travelling between these centres.
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	Forecast increases in congestion will have a significantly detrimental impact on the accessibility of areas of economic activity as demonstrated by the decrease in the labour catchment area. Analysis shows that while the city centre and South East Edinburgh areas of economic activity are expected to have the majority of trips to them originating within the city, over half of the trips to West Edinburgh originate outside of Edinburgh, emphasizing the need to effectively link this area to other parts of central Scotland.	The expected decrease in the labour catchment area is a matter of concern, particularly given the key role of Edinburgh in the national economy. This issue is significant for the continued sustainable development of the city.	Section 5.3.4 Section 5.3.5	To maintain the 60-minute commutable labour market area at the current level, with a particular focus on linking areas of economic activity.
	Support the development and implementation of proposed	The national development scheme relating to Edinburgh Airport should be recognised.	Significant issue.	N/A	To promote efficient and effective transport links to

[7] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Edinburgh					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	national development identified in the NPF2.				support the development and implementation of the proposed national development at Edinburgh Airport identified in the NPF2.
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 8 per cent between 2005 and 2022, which is below the average across the corridors, networks and nodes. In terms of demand management, Edinburgh has a significant urban bus network incorporating wide-scale bus priority measures and strategic Park-&-Ride opportunities. Limited suburban rail network and services, however the tram scheme will provide a significant fixed track system.	Issues are of significance but are below the average level in comparison to the national network. Objectives to improve public transport and reduce congestion should, however, have a positive impact.	Section 5.3.5	To maintain the 60-minute commutable labour market area at the current level, with a particular focus on linking areas of economic activity. To increase public transport capacity and frequency between Fife and Edinburgh.
	Stabilise total CO_2 emissions Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, Edinburgh is predicted to contribute just over 10 per cent of the predicted increase between 2005 and 2022. By 2022, Edinburgh is predicted to be contributing just under 9 per cent of the overall road based emissions output. In terms of demand management, Edinburgh has a significant urban bus network incorporating wide-scale bus priority measures and strategic Park-&-Ride opportunities. Limited suburban rail network and services, however tram scheme will provide significant fixed track system.	Issues are of significance, particularly as there is a high absolute value increase in CO_2.	Section 5.3.5	To maintain the 60-minute commutable labour market area at the current level, with a particular focus on linking areas of economic activity. To increase public transport capacity and frequency between Fife and Edinburgh.

Edinburgh					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this network, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	N/A	To promote continuing reduction in accident rates and severity rates across the strategic transport network.
	Promote seamless travel	The planned tram system shows significant attention to addressing seamless travel issues by providing physical interchange opportunities with the rail and bus network. Bus and rail have generally good interchange within the city centre, with the exception of the bus station location. The peripheral areas of economic activity however do not have similar interchange option and general accessibility, which limits the opportunities for multi-modal trips or multi-PT trips.	Realising effective access to areas of economic activity will require further focus. This is a significant issue.	Section 5.3.5	To enhance public transport interchange opportunities. To maintain the 60-minute commutable labour market area at the current level, with a particular focus on linking areas of economic activity.
	Improve the competitiveness of public transport relative to the car	Overall demand is expect to increase by around 20 per cent between 2005 and 2022 in the corridors serving Edinburgh. The forecast change in demand for public transport services mirrors this as could be expected given the high levels of public transport mode share across all of the corridors. Of particular interest are the increases in public transport demand on Corridor 14 (Fife/Dundee) and Corridor 13 (central Scotland and Glasgow). These however have to be considered against a background of significant increases in road congestion compared with, for example, rail services operating at consistent journey times to today. The major growth areas at West Edinburgh and South East Edinburgh enjoy a high level of access to the strategic road network, however public transport links and/or capacity to these areas are not of the same level.	Expected increases in rail demand will lead to further overcrowding. Increasing road congestion is likely to impact on bus services even with bus priority measures in place. This is noted as a significant issue.	Table 5.3.1 Section 5.3.5	To maintain the 60-minute commutable labour market area at the current level, with a particular focus on linking areas of economic activity.

Edinburgh					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		Public transport patterns of provision are mainly radial and journey time on cross-city movements is longer than would be considered competitive.			
	Improve overall perceptions of public transport	The rail network suffers from significant peak overcrowding on key routes into Edinburgh from Fife, Glasgow and West Lothian. The approaches to Edinburgh through Haymarket and Waverley stations are also congested and are operating at capacity during peak periods. There is limited network capacity to run additional trains, and existing services on some routes are overcrowded. In terms of safety and security, surveys suggest that public transport users in Edinburgh feel safer in general than the average across Scotland.	Overcrowding is a major problem given the high level of rail demand growth forecast.	Section 5.3.5	To maintain the 60-minute commutable labour market area at the current level, with a particular focus on linking areas of economic activity. To increase public transport capacity and frequency between Fife and Edinburgh.
	Safety	The proportion of severe accidents is lower than national average.	No significant issues identified.	Section 5.3.5	No specific STPR objective*

* no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

3.5.5 Glasgow

Summary of Key Issues to be addressed by the Objectives

The Clyde Corridor has been identified as the major focus for national regeneration. This and general economic trends is leading to a growth in jobs in more peripheral areas, which currently have limited public transport connectivity. Providing enhanced public transport services, particularly on the rail network is a problem given the significant operational constraints and lack of additional station capacity in the city centre. This is exacerbated by the physical separation of the two major rail terminals in central Glasgow. A number of rail routes are already suffering from overcrowding during peak periods. The performance of the M8 is forecast to worsen in the future, with the current peak situation being reflected through much of the day. This is particularly important in terms of its impact on freight movements through Glasgow and on access to the airport to the west of the city.

Performance compared to Expectations

Glasgow					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times Reduce inter-urban journey time on public transport	The development of the rail network serving Glasgow has led to the city being served by two major terminus stations at Central, serving the south and Queen Street serving the north. These stations are not well integrated either spatially or by effective connections. This impacts on journeys that need to cross the city from north to south or vice versa. The major bus and coach station at Buchanan Street is located close to Queen Street station but is distant from Central station. The bus network in Glasgow provides a significant proportion of public transport capacity and acts as a feeder to strategic journeys	Achieving effective integration between rail services is a significant issue, particularly to make best use of the forthcoming Glasgow Airport Rail Link (GARL).	Section 5.4.3 Section 5.4.5	To address rail capacity and connectivity issues in central Glasgow.
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be	Some priority currently provided to support bus services, though this is on the local rather than strategic road network. The volume of freight movements measured by HGV kms per route km shows marginal growth for the corridor serving Oban and Fort William. Larger	Forecast growth in HGV kms per route km is of significance as are the potential impacts on bus and freight movements of congestion on the M8. This is a significant issue.	Section 5.4.3 Figure 4.33	To improve the efficiency of the M8 motorway during periods of peak demand with a focus on reducing the conflict between longer distance and local traffic, increasing the people

Glasgow					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	growth is forecast for the Ayrshire and Stranraer corridor, however the overall levels remains relatively low. Of greater significance are the corridors to Inverclyde, Perth, NW England and Edinburgh which are forecast to have the four highest levels of HGV kms per route km amongst all the corridors for 2022. Clearly, this will have a significant impact on the urban motorway network. The M8 through Glasgow has been subject to demand management measures through the ramp metering installation at Junction 16, however this has not yet extended to the provision of prioritised lanes. This concept is however well used in Glasgow on the local road network through quality bus corridor initiatives. It is notable that without any intervention, the increased congestion on the M8 will affect prioritised users as much as other users. Using the variation in performance for AM peak, off peak and PM peak as a proxy, the results for 2005 and 2022 are consistent and show little variation among the periods although this has to be seen in the context of it being an overall measure for Glasgow and congestion is expected through the whole of the M8 within the city.	Congestion issues on the M8 are of general significance.	Section 5.4.3 Figure 5.4.7	carrying capacity and freight carrying capacity of the existing road, and demand management.
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Currently travel time between Glasgow and Aberdeen (235km) is around 3h 30min by car, just over 5h by bus and just under 4h by rail. Between Glasgow and Inverness (275km) it is around 3h 45min by car, just over 4h by rail and around 5h by bus. Between Glasgow and Edinburgh (75km), car and rail have similar times of around 1h 20min with bus being closer to 2h.[8]	Significant issue.	Figures 7.5.6, 7.6.6, 7.9.6 and 7.13.6.	To promote journey time reductions, particularly by public transport, between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling

[8] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Glasgow					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
					between these centres.
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	Forecasts for Glasgow show a 10 per cent decrease in population and a two per cent decrease in employment by 2022 compared with 2005. Behind these overall figures, reductions in employment are forecast within the central area, with increases in more peripheral areas. These forecast reductions have to be seen in the context of an overall growth in the west central Scotland economy for which Glasgow is the driver. Report 1 recognises the importance of the west-east corridor comprising Glasgow Airport, the airport corridor, Clyde Waterfront, the city centre and Clyde Gateway. Report 1 recognises that around five per cent of trips into Glasgow are passing through the city and few of these trips use public transport. While a small proportion of overall trips, they could have a disproportionate impact on the operation of the strategic road network. There is also recognition within the analysis that the Clyde does act as a barrier to movement. The fixed crossings are limited, particularly in the west of the city.	East-west corridor for new employment poses a significant challenge and will be a significant issue as Glasgow develops.	Table 5.4.1 and Section 5.4.2 Sections 5.4.3 and 5.4.4	To increase the public transport access to and between areas of economic activity and regeneration with minimal need for interchange.
	Support the development and implementation of proposed national development identified in the NPF2.	The national development scheme relating to Glasgow Airport should be recognised.	Significant issue.	N/A	To promote efficient and effective transport links to support the development and implementation of the proposed national development at Glasgow Airport identified in the NPF2.

Glasgow					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 1 per cent between 2005 and 2022, which is well below the average across the corridors, networks and nodes. Investment in bus priority systems and the development of key high frequency routes continues to both augment the suburban rail network and provide public transport access for areas not served by rail. The subway system also plays a major role in moving people between the city centre, west end and the inner south area of the city.	Relatively small increase on both an absolute and percentage level, and therefore not considered a significant issue.	Section 5.4.5 Section 5.4.3	No specific STPR objective.
	Stabilise total CO_2 emissions	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, Glasgow is predicted to contribute just over 5 per cent of the predicted increase between 2005 and 2022. By 2022, Glasgow is predicted to be contributing just over 13 per cent of the overall road based emissions output. Investment in bus priority systems and the development of key high frequency routes continues to both augment the suburban rail network and provide public transport access for areas not served by rail. The subway system also plays a major role in moving people between the city centre, west end and the inner south area.	While the contribution that Glasgow is predicted to make to the overall increase is lower than might be anticipated, this is a significant issue due to high overall actual value level of CO_2.	Section 5.4.5 Section 5.4.3	To increase the public transport access to and between areas of economic activity and regeneration with minimal need for interchange. To improve the management of the M8 motorway during periods of peak demand with a focus on reducing the conflict between longer distance and local traffic, increasing the people carrying

Glasgow					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	Although level of emissions increase is small, Glasgow has highest individual level of CO_2 emissions forecasts by 2022 of all networks, nodes or corridors.			capacity and freight carrying capacity of the road, and demand management. To address rail capacity and connectivity issues in central Glasgow.
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this network, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	N/A	To promote continuing reduction in accident rates and severity rates across the strategic transport network.
	Promote seamless travel	The three main public transport hub points within central Glasgow of Central and Queen Street railway stations and Buchanan Bus Station are not co-located. While major bus stop facilities are provided close to the stations, it is clear that only a proportion of services can use these and in particular, there is a disconnect between longer distance bus and rail.	Connectivity between interchanges and between services is a problem. Current capacity constraints limit the flexibility of the network. This is a significant issue.	Section 5.4.3 and 5.4.4	To increase the public transport access to and between areas of economic activity and regeneration with minimal need for interchange. To address rail capacity

Glasgow					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		The growth of services based on the two terminus stations means that apart from the subway and the Argyle line, there is no rail connectivity across the city north-south, which impacts on the ability of the rail network to effectively serve some trips. From a strategic perspective, it is important to note that cross-Glasgow movements between corridors accounts for only 5 per cent of the overall demand but significant cross-Clyde movements have been identified within the city itself that are not effectively catered for by public transport and are likely to impact on the performance of the strategic road network as it passes through the city.			and connectivity issues in central Glasgow.
	Improve the competitiveness of public transport relative to the car	The population of the city itself have a very low level of access to cars compared with the national average, but rising incomes and the redistribution of population to the edge of the city means that growing car ownership is likely to pose a significant challenge. This is partly reflected in the mode split analysis of trips associated with the urban network. The overall level of public transport mode split is currently good, with around a quarter of all trips within the city using public transport. Taking into account trips between the city and the corridors that serve it, the overall level of public transport mode share is 20 per cent. It is notable that the level of public transport use in travel to work for Glasgow residents (30 per cent) is double the national average of 15 per cent. The areas of economic activity and the gateway at the airport have or will have good access to the strategic road network via the M8 and M74. However, increases in travel demand will have significant implications for the operation of these routes by 2022. The areas of growing economic activity do not however have good quality access to	Operating capacity is a significant issue and constrains the ability of the network to better serve current demands and develop new service opportunities.	Tables 5.4.1 and 5.4.2 Section 5.4.5	To address rail capacity and connectivity issues in central Glasgow. To increase the public transport access to and between areas of economic activity and regeneration with minimal need for interchange.

Glasgow					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		the public transport network.			
	Improve overall perceptions of public transport	Where the rail network serves the city centre, the stations are operating close to capacity in terms of train movements and passenger circulation areas, which has a negative impact on the perception of rail travel. The high density of rail and bus networks means that the city generally has very high levels of accessibility to public transport, often to high frequency services. In comparison to the national average levels, those using buses feel significantly less safe than those using the rail network.	Significant issues identified.	Section 5.4.5 Section 5.4.3	To address rail capacity and connectivity issues in central Glasgow. To increase the public transport access to and between areas of economic activity and regeneration with minimal need for interchange.
	Safety	Proportion of severe accidents is lower than national average.	No significant issues identified.	Section 5.4.5	No specific STPR objective*

* no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

3.5.6 Inverness

Summary of Key Issues to be addressed by the Objectives

Much of the future growth of Inverness and its surrounding area will be focussed on the eastern corridor towards Nairn. Issues and objectives resulting from this are more specifically dealt with in relation to the appropriate corridor. Inverness does suffer from localised issues of conflict between longer distance traffic and local traffic. Inverness is also an important strategic node, providing a gateway to the Highlands and far north, and major interchange opportunities between public transport services and modes.

Performance compared to Expectations

Inverness					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times Reduce inter-urban journey time on public transport	The bus and rail stations in Inverness are located adjacent to one another, aiding connectivity in terms of inter-urban journeys. No significant public transport journey time issues within the node.	No significant issues within node	Section 6.1.2 Section 6.1.4	No specific STPR objective
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	The major routes serving Inverness suffer from peak congestion and the A82, through the centre, has particular congestion problems. There are currently no means that permit journey time reduction for prioritised vehicles. The growth in freight movements measured by HGV km per route km shows only marginal growth for all of the corridors connecting to Inverness from low base levels.	Interaction of strategic and local traffic is of significance.	Section 6.1.4 Figure 4.33	To reduce the conflict between longer distance and local traffic
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between	Currently travel time between Inverness and Edinburgh (around 250km) is around 4h by car and rail and 5h by bus. Between Inverness and Glasgow (around 275km) it is around 3h 45min by car, 4h by rail and 5h by bus. A round trip could therefore take between 7h 30min and 10h, which does not permit	Significant issue.	N/A	To promote journey time reductions, particularly by public transport, between Inverness and the central belt primarily to allow business to achieve an

Inverness					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	these centres.	those travelling to achieve an effective working day.[9]			effective working day when travelling between these centres.
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	Population in Inverness is projected to increase by 6 per cent between 2005 and 2022 whereas employment is projected to increase by around 25 per cent over the same period, indicating an increase in demand for commuting. The A96 corridor to the east of Inverness is identified as a strategic development opportunity. There is no major change to the labour catchment expected by 2022.	Major projected increase in employment and potential activity on the A96 corridor are of significance.	Table 6.1.1 Section 6.1.1 Section 6.1.4	To improve connectivity, particularly by public transport, between Inverness city centre and the growth area to the east including Inverness Airport
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this node.	No significant issues identified.	N/A	No specific STPR objective
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 25 per cent between 2005 and 2022, which is above the average across the corridors, networks and nodes and is of significance. In terms of demand management, a limited amount of bus priority is available and bus performance is affected by congestion on the road network. There are no suburban rail services. This emphasizes the need for effective public transport opportunities to assist in tackling CO_2 growth.	Percentage and absolute value increase is significant but should be seen in the context of the overall CO_2 emissions as set out below.	Section 6.1.4 Section 6.1.2	To reduce the conflict between longer distance and local traffic To improve connectivity, particularly by public transport, between Inverness city centre and the growth area to the east including Inverness Airport

[9] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Inverness					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Stabilise total CO_2 emissions	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, Inverness is predicted to contribute less than 1 per cent of the predicted increase between 2005 and 2022. By 2022, Inverness is predicted to be contributing under 1 per cent of the overall road based emissions output.	The opportunity to impact on such small increases is limited and in this context the issue is not significant.	Section 6.1.4	No specific STPR objective
	Reduce CO_2 emissions in line with expectations from the emerging climate change bill.				
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this network, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	N/A	To promote continuing reduction in accident rates and severity rates across the strategic transport network.
	Promote seamless travel	The bus and railway stations are located adjacent to one another.	No significant problems.	Section 6.1.1	No specific STPR objective
	Improve the competitiveness of public transport relative to the car	Public transport mode share on the corridors serving Inverness is variable and reflects the dispersed nature of the population and the ability of public transport in some areas of low demand to offer effective alternatives. A key issue will be to maximise the potential mode share of higher density development areas such as that emerging to the east of Inverness. Inverness has the same proportion of households with access to a car as the national average (67 per cent).	Within Inverness likely to be a localised issue but note access needs for future growth plans on A96 corridor, which is a significant issue.	Table 6.1.1 and 6.1.2 Figure 6.1.3	To improve connectivity, particularly by public transport, between Inverness city centre and the growth area to the east including Inverness Airport
	Improve overall perceptions of public transport	Infrequency of rail services means that services provided at peak times suffer from some overcrowding issues.	Rail services provide for the long distance market more effectively than the suburban commuter market, which is a significant issue.	Section 6.1.2	To improve connectivity, particularly by public transport, between Inverness city centre and the growth area to the east including Inverness Airport.

Inverness					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Safety	Generally better than national average within the strategic node.	No significant issues identified.	Section 6.1.4	No specific STPR objective*

* no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

3.5.7 Perth

Summary of Key Issues to be addressed by the Objectives

The definition of Perth as a 'strategic node' is emphasised by the travel patterns that utilise the bypass network linking the various corridors. The existing bypass routes around the town have sufficient link capacity for future operations, however some congestion has been identified at the at-grade junctions linking these routes and radial routes into and out of Perth.

Performance compared to Expectations

Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times Reduce inter-urban journey time on public transport	In terms of connections within the node, the bus and rail stations are located close to one another with plans to co-locate the bus station with the rail station. However, there are issues relating to the connectivity of rail services resulting from the relatively low frequency and timetable constraints.	Issues affecting rail service connectivity are significant.	Section 6.2.2 and 6.2.4	To promote journey time reductions, primarily by public transport, between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	Dominant travel demands bypass Perth, utilising it as a convergence point for strategic corridors. This emphasizes its role as a node for journeys by road and rail. The early development of bypass opportunities around the town to support this role has successfully resolved many conflicts between local and strategic traffic. The growth in freight movements measured by HGV kms per route km shows a small increase on Corridor 6 to the north, larger increases on Corridor 11 to the east and Corridor 12 to the south, but by far the largest increase on Corridor 9 to the west, where levels are forecast to almost double to be the third largest across all the corridors.	HGV growth on Corridor 9 between Glasgow and Perth is a significant issues dealt with at corridor level.	Figure 6.2.2 Figure 4.33	No specific STPR objective

Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	The Perth node is part of the linkage between Inverness and Glasgow/Edinburgh. Impacts due to the interaction of strategic traffic bypassing Perth and local traffic are identified, particularly at Inveralmond and Broxden roundabouts. These congestion issues impact on journeys between Inverness and other centres such as Glasgow and Edinburgh. Currently travel time between Perth and Edinburgh (around 70km) is around 1h 40min by car and rail and 2h by bus. Between Perth and Glasgow (around 90km) it is around 1h 30min by car and rail and 2h by bus. Between Perth and Inverness (around 170km) it is around 2h 20min by car, 2h 40min by rail and 3h by bus.[10]	Significant issue.	N/A	To promote journey time reductions, primarily by public transport, between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	Although current projections indicate a possible 15 per cent reduction in population in Perth, local development plans would be expected to address this decline. .	Should the projected reduction occur, Perth may need to draw its working population from a wider area, but such changes would not be significant. No significant issues identified.	Table 6.2.1	No specific STPR objective
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this node.	No significant issues identified.	N/A	No specific STPR objective

[10] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 17 per cent between 2005 and 2022, which is above the average across the corridors, networks and nodes. In terms of demand management, Perth has a well established bus network that has been augmented by a major Park-&-Ride facility at Broxden and a secondary facility at Scone. Even with these demand management measures in place, Perth is forecast to have the highest absolute value of emissions per person km by 2022.	Need to recognise impact of through trips in addressing this significant issue.	Section 6.2.4 Section 6.2.2	To contribute to reducing the emissions per person kilometre. To promote journey time reductions, primarily by public transport, between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.
	Stabilise total CO_2 emissions Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, Perth is predicted to contribute less than 1 per cent of the predicted increase between 2005 and 2022. By 2022, Perth is predicted to be contributing under 1 per cent of the overall road based emissions output. In terms of demand management, Perth has a well established bus network that has been augmented by a major Park-&-Ride facility at Broxden and a secondary facility at Scone.	The opportunity to impact on such small increases is limited. Percentage increase is around the average level, but absolute value of increase is very low, which is not a significant issue.	Section 6.2.4	No specific STPR objective
Improve Quality, Accessibility and Affordability	Promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this network, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	N/A	To promote continuing reduction in accident rates and severity rates across the strategic transport network.

Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Promote seamless travel	The bus and rail stations are located close to one another with plans to co-locate the bus station with the rail station. Service connections between the different services connecting Inverness with parts of the central belt are highlighted as being an issue.	Lack of effective connectivity between services reduces the effectiveness of Perth as a hub for public transport. This is a significant issue.	Section 6.2.2	To promote journey time reductions, primarily by public transport, between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.
	Improve the competitiveness of public transport relative to the car	In general the movements between Perth and the corridors that are linked to it have a relatively high level of public transport mode split; the best being 17 per cent for Corridor 11 to Dundee. The corridor to corridor movements perform less well, with the highest volume movement (Glasgow to Perth – Perth to Dundee) having only 7 per cent mode share. The lack of physical connectivity problems within Perth itself suggests that the low modal share for public transport in the corridor to corridor movements is a corridor rather than a nodal issue.	No significant issues identified.	Table 6.2.1 and 6.2.2	No specific STPR objective
	Improve overall perceptions of public transport	No rail overcrowding issues identified.	No significant issues identified.	Section 6.2.4	No specific STPR objective
	Safety	There are no identified safety issues within the strategic node.	No significant issues identified.	Section 6.2.4	No specific STPR objective*

* no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

3.6 Corridor Objectives

3.6.1 Introduction

The following section describes the objective setting process for the twenty strategic corridors. This is carried out in two stages comprising:

- Summary of Key Issues to be addressed by the Objectives; and
- Performance compared to Expectations.

In comparing the performance to the expectations, a tabular format has been used to capture key evidence from Report 1 and comment upon its overall level of significance to the particular National Objective. The table also shows any STPR objective that is developed as a result of the assessment. It should be noted that the same objective may be restated in a number of rows as the process of objective formulation has sought to capture individual elements and express these in compound form where appropriate.

3.6.2 Corridor 1 – Inverness to Wick / Thurso and Northern Isles

Summary of Key Issues to be addressed by the Objectives

Congestion on approach to Inverness is noted but this is minor in the context of the national picture with no identified congestion issue on the majority of the route. The route is at national average in terms of safety. There is a problem of isolation due to the dispersed population that the corridor serves, although car ownership is relatively high. The corridor supports a significant area encompassing a large proportion of Scotland's peripheral communities, and represents an important lifeline to these communities. The rail network is rather circuitous and includes many stops, making for poor end-to-end journey times. The rail route is primarily focused on providing a life-line and socially inclusive service. The bus services broadly mirror the operation of the trains, though at a higher frequency, suggesting that there is no significant market demand for improved end-to-end journey times compared with the continued provision of services based on linking communities.

Performance compared to Expectations

Corridor 1 – Inverness to Wick/Thurso and Northern Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	For journey time along the length of the corridor (around 170km), bus is around 1.5 times that of car and rail is around twice that of car. Both public transport modes serve the majority of intermediate communities, performing a valuable cohesion function. The lack of frequent services means that public transport is at a competitive disadvantage to an uncongested road network. The analysis of demand shows that the majority of trips (45 per cent) are within the corridor with a further 35 per cent of trips between the corridor and elsewhere, most of which is to destinations within the Highlands excluding Inverness. The remaining 20 per cent of trips are from the corridor to Inverness. It is notable that the demand using the corridor is mainly focussed on internal corridor trips this is a reflection on the nature and dispersion of the population within the corridor. Public transport journey times are affected by geographic constraints, circuitous routes and frequent stops to serve the various communities on the	The lack of competitive journey times coupled with low frequency services, particularly on rail is a key constraint to use, but the dispersed nature of population limits the potential for public transport. Poor journey times and a low level of demand significantly limit the ability of public transport to provide a realistic alternative to the car. These are significant issues.	Figure 7.1.5 Table 7.1.1 Section 7.1.4 and Figure 7.1.5	To enhance public transport accessibility and reduce public transport journey time to and from Inverness.
	Reduce inter-urban journey time on public transport				To enhance public transport accessibility and reduce public transport journey time to and from Inverness.

Corridor 1 – Inverness to Wick/Thurso and Northern Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		corridor. Rail in particular is impacted by single line and limited signalling issues, train journey times between Inverness and Wick and Thurso are 4h 40mins and 4h 10mins respectively. This compares with a car journey time of about 2h 15mins to both destinations and for bus a journey time of 3h 10mins to Wick and 3h 50mins to Thurso.[11]			
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	Overall the A9 performs well with forecast average speeds close to the free flow speed. The impact of single carriageway on overtaking opportunities and the impact of peak congestion on approach to Inverness are noted but not considered to be significant. The freight movements measured by HGV kms per route km shows a low base level (<500) and a marginal growth for the corridor up to 2022 (final level <500), giving it the 18th highest level of all the corridors. Little variability in journey time is evident.	No significant issues identified.	Section 7.1.4 Figures 4.33 and 7.1.4	No specific STPR objective
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Not part of the corridors delivering these linkages.	No significant issues identified.	N/A	No specific STPR objective
	Maximise labour catchment area in city regions where economic evidence	Between 2005 and 2022, population in the corridor is expected to remain stable with a slight rise in employment (4 per cent) and a 7 per cent increase in	No significant change forecast in labour market catchment.	Section 7.1.1	No specific STPR objective

[11] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 1 – Inverness to Wick/Thurso and Northern Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	housing, indicating some degree of population dispersal. Around 45 per cent of trips are wholly within the corridor, indicating a significant internal market, with around 20 per cent between the corridor and Inverness. Much of this represents travel to work from the area around Inverness.		Section 7.1.3	
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this corridor.	No significant issues identified.	N/A	No specific STPR objective
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 32 per cent between 2005 and 2022, which is well above the average across the corridors, networks and nodes. There are no dedicated demand management measures currently in use in the corridor. Although Inverness station car park is nearly at capacity.	Percentage increase and absolute value increase are very high, but refer to a comparatively small number of movements that are over a dispersed area. Note also that the absolute value of CO_2 emissions is very low. These issues are not significant.	Section 7.1.5 Section 7.1.2	No specific STPR objective
	Stabilise total CO_2 emissions	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute less than 1 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing under 1 per cent of the overall road based emissions	The opportunity to impact on such small increases is limited. Percentage increase is low and absolute value of	Section 7.1.5	No specific STPR objective

Corridor 1 – Inverness to Wick/Thurso and Northern Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	output.	increase is very low. These issues are not significant.		
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows a strategic performance issue on this corridor that has an identified objective, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	Section 7.1.4	To reduce the fatal and severe accident rates to the national average or lower.
	Promote seamless travel	The small nature of settlements on the corridor means that physical integration is usually achieved, but the low frequency of public transport services acts against this, however this is a localised issue.	No significant issues identified.	Section 7.1.4	No specific STPR objective
	Improve the competitiveness of public transport relative to the car	The general level of public transport mode share in the corridor as a whole is around 9 per cent., while for trips wholly within the corridor this rises to 13 per cent. The number of households with access to a car in the area is 73 per cent, which is above the national average. This is unsurprising given the dispersed population. Competitiveness is a significant challenge in a corridor providing such a significant function for peripheral communities. Frequency and journey time issues on public transport set out above.	Issues identified are as those discussed above.	Table 7.1.1 Section 7.1.1	To enhance public transport accessibility and reduce public transport journey time to and from Inverness.
	Improve overall perceptions of	No rail overcrowding due to low levels of patronage	No significant issues	Section 7.1.4	No specific STPR objective

Corridor 1 – Inverness to Wick/Thurso and Northern Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	public transport	Bus user surveys indicate a general "average" level of satisfaction with most aspects of the service although 'frequency and coverage' receive a good rating.	identified.	Table 7.1.2	
	Safety	The accident rate is in line with the national average for the type of road. The fatal accident rate is slightly elevated above national average. The proportion of severe accidents is significantly above the national average. Localised issue at railway level crossing.	Elevated fatal and severity issue is of significance.	Section 7.1.4	To reduce the fatal and severe accident rates to the national average or lower.

3.6.3 Corridor 2 – Inverness to Ullapool and Western Isles

Summary of Key Issues to be addressed by the Objectives

This corridor has no forecast congestion problems and bus journey times are broadly competitive with car. The A835 has some significant accident problems. A major function of this corridor is to support peripheral communities, both on the mainland and islands, and it is therefore an important lifeline. The corridor also has important functions for tourism.

Performance compared to Expectations

Corridor 2 – Inverness to Ullapool and Western Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	There is no rail infrastructure along the length of the corridor. Bus is around 30 minutes slower than the car journey time of around 1hr 15 mins for end to end journeys, a distance of around 90km.[12] The analysis of demand shows that the majority of trips (64 per cent) are between the corridor and elsewhere, most of which is to destinations within the rest of the Highlands excluding Inverness. This maybe a reflection on the nature and dispersion of the population within the corridor. A further 28 per cent of trips are from the corridor to Inverness. Only 8 per cent of trips are contained within the corridor. Public transport is principally aimed at supporting local communities and providing for linkage to the ferry.	Given interchange times, this suggests that bus is relatively competitive, so no significant issues are identified.	Figure 7.2.5	No specific STPR objective
	Reduce inter-urban journey time on public transport			Table 7.2.1	No specific STPR objective
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal	Predictions of future operations show the average speed remaining close to the free flow speed indicating that the route does not suffer from congestion. The ferry link at Ullapool may lead to some platooning or a higher proportion of drivers	No significant issues identified.	Section 7.2.4	No specific STPR objective

[12] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 2 – Inverness to Ullapool and Western Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	unfamiliar with the route. The freight movements measured by HGV kms per route km shows a very low base level (<100) and a marginal growth for the corridor up to 2022 (final level <100), giving it the lowest level of all the corridors. Little variability in journey time is evident.		Figure 4.3.3 Figure 7.2.4	
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Not part of the corridors delivering these linkages.	No significant issues identified.	N/A	No specific STPR objective
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	There is little forecast change in overall population levels, but there are specific issues of decline in Eilean Siar and growth around Inverness. Only around 8 per cent of trips are wholly within the corridor with around 28 per cent between the corridor and Inverness, which is largely commuting from the area around Inverness. No significant changes to labour catchments are expected.	No significant issues identified.	Section 7.2.1 Section 7.2.3	No specific STPR objective
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this corridor.	No significant issues identified.	N/A	No specific STPR objective
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 11 per cent between 2005 and 2022, which is around the average across the corridors, networks and nodes.	Percentage increase is average but absolute value of increase is low. This issue is not	Section 7.2.5	No specific STPR objective

Corridor 2 – Inverness to Ullapool and Western Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
			significant.		
	Stabilise total CO_2 emissions	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute less than 1 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing under 1 per cent of the overall road based emissions output. There is currently no bus priority or other demand management measures in use in the corridor.	The opportunity to impact on such small increases is limited. Percentage increase is high but absolute value of increase is very low. This issue is not significant.	Section 7.2.5 Section 7.2.2	No specific STPR objective
	Reduce CO_2 emissions in line with expectations from the emerging climate change bill.				
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows a strategic performance issue on this corridor that has an identified objective, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	N/A	To reduce the accident, fatal and severe rates to the national average.
	Promote seamless travel	The small nature of settlements on the corridor means that physical integration is usually achieved, but the low frequency of public transport services acts against this.	No significant issues identified.	Section 7.2.4	No specific STPR objective
	Improve the competitiveness of public transport relative to the car	The general level of public transport mode share in the corridor as a whole is around 7 per cent. While within the corridor this rises to 14 per cent, trips from the corridor to Inverness are 12 per cent of the total trip movement. Within the Highland area, the proportion of households with access to a car is 75 per cent and in Eilean Siar 70 per cent, as would be expected for a	No significant issues identified.	Section 7.2.1	No specific STPR objective

Corridor 2 – Inverness to Ullapool and Western Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		predominantly rural area. It is of note both areas have a high level of household access to cars compared with the national average of 67 per cent. This higher availability of cars together with the dispersed population in the corridor will tend to reduce the competitiveness of public transport.			
	Improve overall perceptions of public transport	No rail overcrowding issues are identified. Bus user surveys indicate a general "average" level of satisfaction with most aspects of the service although 'reliability and coverage' receive a good rating and frequency receives a "poor" rating.	No significant issues identified.	Section 7.2.4 Table 7.2.2	No specific STPR objective
	Safety	The accident rate, fatal accident rate and severe accident rate are all significantly above the national average. This is a significant issue given the tourist traffic present on this route.	This is a significant issue.	Section 7.2.4	To reduce the accident, fatal and severe rates to the national average.

3.6.4 Corridor 3 – Inverness to Fort William and Western Isles

Summary of Key Issues to be addressed by the Objectives

The corridor performance is in general good; however safety is a problem on this route. The analysis demonstrates that the overall accident rate is high, though the fatal accident rate is not significantly above the national average for the road type. There are no identified congestion problems. A major function of this corridor is to support peripheral communities. The corridor also has important functions for tourism, both in terms of access, and as an attraction in its own right.

Performance compared to Expectations

Corridor 3 – Inverness to Fort William and Western Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	Bus services in general have journey times that are around 50 per cent longer than car for the various destinations at the extremes of the corridor. Services to Kyle of Lochalsh are more competitive however rail on this part of the corridor is relatively slow. Car journey time from Inverness to Fort William (around 100km) is 1h 30mins compared with 2h 10mins by bus. There is no rail service.[13] Analysis of travel demand in the corridor indicates that 44 per cent of all trips are contained within the corridor. However, 42 per cent of trips are from the corridor to elsewhere, most of which is routing through Inverness. Reducing public transport journey times has to be seen in the context of the dispersed population and the need for services to adequately provide for access by rural communities.	The lack of competitive journey times coupled with low frequency services, particularly on rail is a constraint to use, but the dispersed nature of population is an overall limiting factor. Therefore this is not considered to be an issue of significant magnitude.	Figure 7.3.5	No specific STPR objective
	Reduce inter-urban journey time on public transport			Table 7.3.1	No specific STPR objective
	Promote journey time	Predictions of future operations show the average	No significant issues	Section 7.3.4	No specific STPR objective

[13] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 3 – Inverness to Fort William and Western Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	speed remaining close to the free flow speed indicating that the route does not suffer from congestion. Single carriageway standard routes and high volumes of tourist traffic can lead to a lack of overtaking opportunities. The freight movements measured by HGV kms per route km shows a low base level (<500) and a small growth for the corridor up to 2022 (final level <500), giving it the 14th highest level of all the corridors. Little variability in journey time is evident.	identified.	Figure 4.33 Figure 7.3.4	
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Not part of the corridors delivering these linkages.	No significant issues identified.	N/A	No specific STPR objective
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	There is little forecast change in overall population levels, but there are specific issues of decline in Eilean Siar and growth around Inverness. Around 44 per cent of trips are wholly within the corridor, indicating a significant internal market, with around 14 per cent between the corridor and Inverness. Much of this will represent travel to work from the area around Inverness.	No significant issues identified.	Section 7.3.1 Section 7.3.3	No specific STPR objective
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this corridor.	No significant issues identified.	N/A	No specific STPR objective

Corridor 3 – Inverness to Fort William and Western Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 26 per cent between 2005 and 2022, which is well above the average across the corridors, networks and nodes. There are no demand management measures in place of the corridor. While the station car parks at Inverness and Fort William are close to capacity.	Percentage increase and absolute value increase are very high, but refer to a comparatively small number of movements that are over a dispersed area. Note also that the percentage value and absolute value of CO_2 emissions increase is low. This is not a significant issue.	Section 7.3.5 Section 7.3.2	No specific STPR objective
	Stabilise total CO_2 emissions Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute less than 1 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing just over 1 per cent of the overall road based emissions output.	The opportunity to impact on such small increases is limited. Percentage increase and absolute value increase are both low. This is not a significant issue.	Section 7.3.5	No specific STPR objective
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows a strategic performance issue on this corridor that has an identified objective, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	Section 7.3.4	To reduce the accident rate to current national average without adversely impacting on accident severity (see also Corridor 7)
	Promote seamless travel	The small nature of settlements on the corridor means that physical integration is usually achieved, particularly at Fort William, but the low frequency of public transport services acts against this.	No significant issues identified.	Section 7.3.4	No specific STPR objective
	Improve the competitiveness	The general level of public transport mode share in	No significant issues	Table 7.3.1	No specific STPR objective

Corridor 3 – Inverness to Fort William and Western Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	of public transport relative to the car	the corridor as a whole is around 7 per cent. While within the corridor this rises to 14 per cent, trips from the corridor to Inverness are 12 per cent of the total trip movement. Within the Highland area, the proportion of households with access to a car is 75 per cent and in Eilean Siar 70 per cent, as would be expected for a predominantly rural area. It is of note both areas have a high level of household access to cars compared with the national average of 67 per cent. This higher availability of cars together with the dispersed population in the corridor will tend to reduce the competitiveness of public transport.	identified.	Section 7.3.1	
	Improve overall perceptions of public transport	No rail overcrowding. Bus user surveys indicate a general “average” level of satisfaction with most aspects of the service although ‘coverage’ receives a good rating and frequency receives a “poor” rating.	No significant issues identified.	Section 7.3.4 Table 7.3.3	No specific STPR objective
	Safety	The accident rate and severe accident rate are greater than the national average. This is a significant issue given the tourist traffic present on this route.	Elevated accident levels are an issue, particularly when considered with reference to Corridor 7 (Glasgow to Oban/Fort William).	Section 7.3.4	To reduce the accident rate to current national average without adversely impacting on accident severity (see also Corridor 7 Glasgow to Oban/Fort William)

3.6.5 Corridor 4 – Aberdeen to Inverness

Summary of Key Issues to be addressed by the Objectives

Most trips take place within the corridor rather than between the cities at either end. The importance of either end of the corridor in delivering effective access to the respective city is important, particularly given the location of the airports for both Aberdeen and Inverness. Both accident and fatal accident rates are double the national average with accident clusters at junctions. There are many population centres off the main route with consequent need for manoeuvring on and off the route. In this respect, the corridor performs a key function in supporting peripheral communities. The rail gauge enhancement between Mossend and Elgin provides opportunities for rail freight growth on this corridor. The capacity utilisation forecasts show no significant change between 2005 and 2022 for the majority of the route and this therefore suggests that there is no strategic capacity problem to be addressed, however there is significant planned growth to the east of Inverness. There is high car ownership across the area. For local trips, public transport has a poor market share.

Performance compared to Expectations

Corridor 4 – Aberdeen to Inverness					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	Along the length of the corridor (around 161km), rail and car journey times are comparable, however rail frequencies are low. Bus is not competitive with car or rail in terms of journey time. The analysis of demand shows that the majority of trips (60 per cent) are within the corridor with a further 9 per cent and 15 per cent between the corridor and Inverness/Aberdeen respectively. It is notable that the demand using the corridor linking these two significant centres is mainly focussed on internal corridor trips. This may suggest that the corridor is not functioning effectively in linking the centres of Aberdeen and Inverness. This concept is strengthened when considering the public transport journey time between Aberdeen and Inverness. Currently travel time between Aberdeen and Inverness is 2h 30min by car and rail and just over 4h by bus. Considering the average speed of the public transport services compared with Corridor 5 (Dundee to Aberdeen),	For centre-to-centre journeys, rail provides a competitive journey time relative to car but its ability to gain a significant modal share is limited by the low frequency of services. It is also noted that the journey time in general is long for the length of journey. These are significant issues.	Figure 7.4.6	No specific STPR objective
	Reduce inter-urban journey time on public transport				To improve journey times and increase opportunities to travel, particularly by public transport, between Aberdeen and Inverness.

Corridor 4 – Aberdeen to Inverness					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		rail is around 10 per cent slower and bus is around 20 per cent slower.[14]			
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	While forecasts show that average speeds are expected to remain largely unchanged relative to today, these remain below the free flow speed. This is due to the interaction of strategic and local trips, high traffic volumes and the impact of HGVs at key points such as the approaches to Inverness and Aberdeen and at urban constraint points within the corridor. The Aberdeen to Inverness Transport Corridor Study (AITCS) identifies a number of locations where average speed is low and variability is high. The points at which the route passes through settlements imposes an urban speed limit on the route and impacts on journey time as well as reliability due to interaction with local traffic. The freight movements measured by HGV kms per route km shows a very low base level (<500) and a marginal growth for the corridor up to 2022 (final level <500), giving it the 19th highest level of all the corridors. Variability in journey time is forecast to reduce in 2022 compared with 2005.	This impact on average speeds is an issue of note, although the A9 and A82 are significantly more impacted by HGV traffic in comparison, suggesting that this is not as significant an issue on this corridor.	Section 7.4.4 Figures 4.3.3 and 7.4.5	To improve journey times and increase opportunities to travel, particularly by public transport, between Aberdeen and Inverness.
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Not part of the corridors delivering these linkages.	No significant issues identified.	N/A	No specific STPR objective

[14] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 4 – Aberdeen to Inverness					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	There is a forecast increase in population of around 3 to 4 per cent along the corridor between 2005 and 2022 apart from Moray where a small decrease is expected. Around 60 per cent of trips are wholly within the corridor, indicating a significant internal market resulting from the numerous communities along, and served by, the corridor.	There is no significant change expected in the labour catchment areas for both Inverness and Aberdeen, however note must be taken of the potential strategic growth area to the east of Inverness.	Section 7.4.1 Section 7.4.3	No specific STPR objective
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this corridor.	No significant issues identified.	N/A	No specific STPR objective
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to reduce by around 5 per cent between 2005 and 2022, principally as a result of the predicted effects of the AWPR.	No significant issues identified..	Section 7.4.5	No specific STPR objective
	Stabilise total CO_2 emissions	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute less than 1 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 3 per cent of the overall road based emissions output. Bus based Park-&-Ride opportunities are provided at Aberdeen and are well used but no facilities in the Inverness area.	Low percentage increase but moderate absolute value increase. This is a significant issue in the context of a relatively high baseline.	Section 7.4.5	To improve connectivity, particularly by public transport, between Inverness city centre and the growth area to the east including Inverness Airport.
	Reduce CO_2 emissions in line with expectations from the emerging climate change bill.				
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows a strategic performance issue on this corridor that has an identified objective, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	Section 7.4.4	To reduce the accident rate and severity rate to current national average.

Corridor 4 – Aberdeen to Inverness					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Promote seamless travel	The nature of settlements on the corridor means that physical integration is usually achieved, but the low frequency of rail services acts against this. Bus based Park-&-Ride opportunities are provided at Aberdeen.	Low rail service frequency has a disproportionate impact on seamless travel due to the lack of opportunities to fully integrate trips. This is a significant issue.	Section 7.4.4	To improve journey times and increase opportunities to travel, particularly by public transport, between Aberdeen and Inverness.
	Improve the competitiveness of public transport relative to the car	The general level of public transport mode share in the corridor as a whole is around 8 per cent. Between the corridor and Inverness however, this rises to 15 per cent, which is significantly higher than the opposite end of the corridor linking into Aberdeen. It is of note that Aberdeenshire has a high level of household access to cars (82 per cent) compared with the national average (67 per cent). Moray is also higher than the national average (76 per cent) and this higher availability of cars together with more dispersed population will tend to reduce the competitiveness of public transport. The potential strategic growth area to the east of Inverness coupled with the Area of Economic Activity at Dyce emphasizes the importance of the corridor in providing access to these areas.	The potential for strategic development east of Inverness means that accessibility is likely to be of significance.	Table 7.4.1 Section 7.4.1	To improve connectivity, particularly by public transport, between Inverness city centre and the growth area to the east including Inverness Airport.
	Improve overall perceptions of public transport	No general rail overcrowding issues are identified; however there is high usage between Dyce and Aberdeen. Bus user surveys indicate a general level of satisfaction with most aspects of the service although 'value' only receives an average rating. Security concerns for travel on public transport are	Rail usage issue more properly addressed within Aberdeen urban network. No other significant issues.	Section 7.4.4	To improve connectivity, particularly by public transport, between Inverness city centre and the growth area to the east including Inverness Airport

Corridor 4 – Aberdeen to Inverness					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		significantly lower than the average for Scotland.			
	Safety	The accident rate and fatal accident rate are significantly above the national average.	Elevated levels are an issue of significance.	Section 7.4.4	To reduce the accident rate and severity rate to current national average.

3.6.6 Corridor 5 – Dundee to Aberdeen

Summary of Key Issues to be addressed by the Objectives

This corridor links Aberdeen and North East Scotland to the central belt and beyond. Traffic congestion on approach to the cities is not predicted to be significant in 2022. There are some localised accident issues associated with junctions. Journey times by rail are broadly competitive, including to Glasgow and Edinburgh although overall journey times limit the accessibility of Aberdeen from the central belt. The rail gauge enhancement between Mossend and Elgin provides opportunities for rail freight growth on this corridor. This corridor forms part of the linkage beyond Dundee for trips between Aberdeen and Glasgow/Edinburgh.

Performance compared to Expectations

Corridor 5 – Dundee to Aberdeen					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	Rail journey times are comparable with car, meaning that rail is competitive with road for centre-to-centre trips (Aberdeen to Dundee, 106km), with a frequency of 2 trains per hour, most continuing on to Glasgow or Edinburgh. Bus is less competitive when serving the same stops as rail, but express services using the A90 compare well with car and rail journey times. Analysis of demand shows patterns shows that 48 per cent of trips are between the corridor and Aberdeen. This reflects the strong position of Aberdeen within the northeast Scotland economy. A further 15 per cent of trips travel to Dundee, while 14 per cent travel between the two destinations. Only 2 per cent of all trips are within the corridor itself. These figures may suggest that the corridor still is not operating as efficiently as it could in offering competitive end to end journeys times and to those onwards trips to Glasgow and Edinburgh. The journey time between Aberdeen and Dundee (about 1h 30mins for both car and train) means that compound travel times to and from Glasgow and Edinburgh are significant and impact on the ability to do business within a day. It is unlikely, given that the	The fastest journey times by the three modes are of a similar level. The issue of a long public transport journey between Aberdeen and other major centre is significant.	Figure 7.5.6 and Table 7.5.1	No specific STPR objective
	Reduce inter-urban journey time on public transport				To improve the public transport competitiveness between Aberdeen and Dundee (and hence onwards to the central belt).

Corridor 5 – Dundee to Aberdeen					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		A90 between Dundee and Aberdeen is dual carriageway throughout, that significant journey time improvements can be achieved.[15]			
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	The present average speeds on the corridor are impacted by congestion at both Aberdeen and Dundee. The AWPR provides some relief to this, but by 2022 average speeds are forecast to be the same as today. The AWPR provides opportunity to consider some level of priority for certain vehicle types. The freight movements measured by HGV kms per route km in this corridor show a doubling by 2022 over a moderately large base in 2005 (around 800 to around 1750), giving it the 5th highest level of all the corridors. This is not surprising as this corridor is the main route between Aberdeen and the rest of Scotland and the UK. Minor level of variability in journey time, which is forecast to be reduced in 2022 compared with 2005.	No significant issues identified concerning journey time. Issues associated with HGV growth are addressed under the emissions national objective.	Section 7.5.4 Figures 4.33 and 7.5.5	No specific STPR objective
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	This corridor provides an important part of the linkage between Aberdeen and the central belt. The general journey time between Aberdeen and Dundee (about 1h 30mins for both car and train) means that compound travel times to and from Glasgow and Edinburgh are significant and impact on the ability to do business within a day.	The issue of a long public transport journey between Aberdeen and other major population centres is significant.	Figure 7.5.6	Promote journey time reductions, particularly by public transport, between the central belt and Aberdeen primarily to allow business to achieve an effective working day when travelling between these centres.
	Maximise labour catchment area in city regions where	Overall levels of population and employment are forecast to remain consistent between 2005 and	No significant issues identified.	Section 7.5.1	No specific STPR objective

[15] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 5 – Dundee to Aberdeen					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	2022, but with differences between Aberdeen and Dundee. The largest single trip movement is between the corridor and Aberdeen (48 per cent) with trips between the corridor and Dundee only accounting for 15 per cent. No significant changes in the labour catchment area are forecast.		Section 7.5.3	
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this corridor.	No significant issues identified.	N/A	No specific STPR objective
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 27 per cent between 2005 and 2022, which is well above the average across the corridors, networks and nodes. This is driven particularly by a forecast increase in freight volumes, which is expected to be carried largely by additional HGVs on the road network. By contrast, the rail network in this corridor carries a very low tonnage compared with other parts of the Scottish network.	High forecast percentage increase and high forecast absolute value increase. Note impact of freight growth on this corridor and impact of commuting into each city.	Section 7.5.5	To contribute to reducing both overall emissions and emissions per person kilometre through providing for alternatives to road freight movement on the corridor.
	Stabilise total CO_2 emissions	In terms of overall road based CO_2 emissions across	High forecast percentage	Section 7.5.2	

Corridor 5 – Dundee to Aberdeen					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	the corridors, networks and nodes, this corridor is predicted to contribute around 7 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 4 per cent of the overall road based emissions output. Emissions increases are driven particularly by a forecast increase in freight volumes, which is expected to be carried largely by additional HGVs on the road network. By contrast, the rail network in this corridor carries a very low tonnage compared with other parts of the Scottish network. Bus priority is in place on approaches to Aberdeen and Dundee, although there are no formal bus based Park-&-Ride facilities. There is a limited ability to Park-&-Ride from the rail stations along the corridor.	increase and high forecast absolute value increase. Note impact of freight growth on this corridor and impact of commuting into each city.	and 7.5.5	
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this corridor, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	N/A	To promote continuing reduction in accident rates and severity rates across the strategic transport network.
	Promote seamless travel	Bus and rail stations are well integrated in Aberdeen but not in Dundee. Within the corridor, physical integration of services is generally acceptable however frequency limits the way in which rail stations are able to serve their hinterlands.	No significant issues identified.	Section 7.5.4	No specific STPR objective
	Improve the competitiveness of public transport relative to the car	The level of public transport mode share in the corridor as a whole is about 4 per cent, while this rises to 10 per cent for end to end corridor journeys. Just under 50 per cent of all public transport trips are from the corridor into Aberdeen, which reflects the	No significant issues identified.	Tables 7.5.1 and 7.5.2	No specific STPR objective

Corridor 5 – Dundee to Aberdeen					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		employment with the city and the suburbs which are at the northern end of the corridor. Aberdeenshire and Angus have high levels of households with access to a car (82 per cent and 74 per cent) respectively, which in both cases is above the national average of (67 per cent). The higher availability of the car will in most cases tend to reduce the competitiveness of public transport. The Altens Area of Economic Activity is close to the northern end of the corridor on the southern outskirts of Aberdeen. While access to this is important, this matter is more properly addressed within the Aberdeen Urban Network.		Section 7.5.3	
	Improve overall perceptions of public transport	No rail overcrowding. Public transport accessibility is higher on the coastal area than it is for the inland area where the main road route (A90) is located. Bus passenger user surveys indicate that there is good level of satisfaction with most aspects of the service although "reliability, value and frequency" all receive average ratings. Security concerns for male and female passengers on both buses and trains are generally lower than there respective averages for Scotland.	No significant issues identified.	Section 7.5.4 Table 7.5.2	No specific STPR objective
	Safety	The accident rate and fatal accident rate are lower than the national average, largely as a result of safety camera initiatives and localised works. The severe accident rate is above the national average, but this may be the result of some clusters that still require to be addressed.	Localised accident cluster issues remain to be addressed.	Section 7.5.4	No specific STPR objective*

* no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

3.6.7 Corridor 6 – Inverness to Perth

Summary of Key Issues to be addressed by the Objectives

Accident data shows that while occurrence is below the national average, the fatal accident rate is high. The route has a high proportion of end-to-end trips and the route varies in standard, which has particular impacts due to freight movements and tourism. The high proportion of end-to-end trips is unsurprising, given the role of the corridor in linking Inverness and more peripheral areas to the central belt. The corridor is also important in supporting economic development in and around Inverness, however public transport journey times between Inverness and Perth are long and not conducive to doing a days business in the central belt or vice versa. The speed achieved on the route is close to the free flow speed. Seasonality is an issue both in terms of weather and tourism. There is a need to improve peak conditions into Perth and into Inverness as the A9 approaches to Perth and Inverness are forecast to suffer some localised congestion issues.

Performance compared to Expectations

Corridor 6 – Inverness to Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	Rail and car journey times are broadly comparable over the length of the corridor (approximately 170km), but low rail service frequency limits the attractiveness of rail. Bus performs less well as a result of stops requiring diversion off the A9 but some express coaches miss these intermediate stops giving greater competitiveness. The analysis of the travel demand indicates that 28 per cent of trips are end to end corridor journeys between Inverness and Perth. While 26 per cent of journeys are contained just within the corridor itself. Approximately a quarter (24 per cent) of trips are between the corridor and other destinations. This reflects the strategic nature of the corridor as the main route between northern Scotland and central and southern areas. The overall public transport journey time between Inverness and Perth are reasonably comparable with the car at 2h 40mins (train) compared with 2h 20mins (by car). However, the low frequency of train services	Rail is able to provide a comparable journey time but is unlikely to be competitive and significantly impact modal split at current frequency levels. Long journey times reinforce the isolation of Inverness. This is a significant issue.	Figure 7.6.6 Table 7.6.1	To reduce journey time and increase opportunities to travel between Inverness and Perth (and hence onwards to the central belt).
	Reduce inter-urban journey time on public transport				To reduce journey time and increase opportunities to travel between Inverness and Perth (and hence onwards to the central belt).

Corridor 6 – Inverness to Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		on the route reduces the competitiveness of this mode further. The corridor train journey time and the onwards travel to Glasgow and Edinburgh, is long and is an impediment to doing business between these areas. The bus journey times on the corridor are uncompetitive with the car due the number of stops on the route.[16]			
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	The consistency of the average speed across the day shows that there is little commuter impact on the route. The average speed levels are not forecast to change significantly by 2022. The route is affected by irregular carriageway provision with a changing mixture of dual, single and 2+1 carriageway throughout the route. Given that a high proportion of trips traverse the corridor end to end, this changing provision appears to contribute to driver frustration. This route is unique in having these characteristics. Freight movements are measured by HGV kms per route km which indicates a low 2005 base (<500) and only marginal growth to 2022 (final level of just over 500), giving it the 13th highest level of all the corridors. Little variability in journey time is evident.	While the average speed is not forecast to change significantly, the mixture of road provision continues to be a significant issue for the corridor.	Section 7.6.4 Figures 4.33 and 7.6.5	To improve the operational effectiveness of the A9 as it approaches Perth and Inverness. To address issues of driver frustration relating to inconsistent road standard, with attention to reducing accident severity.
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Journey times between Inverness and Perth are reasonably competitive between the car and the train taking 2h 20mins and 2h 40mins respectively. However, the low frequency of train services on the route reduces the competitiveness of this mode further. The corridor journey time by rail, and the onwards to Glasgow and Edinburgh, is long and is an impediment to business interaction between these	Significant issue.	Figure 7.6.6	To promote journey time reductions, particularly by public transport, between the central belt and Inverness primarily to allow business to achieve an effective working day when travelling between these

[16] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 6 – Inverness to Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		areas. The bus journey times on the corridor are uncompetitive with the car due the number of stops on the route. This corridor provides an important part of the linkage between Inverness and the central belt.			centres.
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	Population and employment in the corridor are projected to increase by 5 and 4 per cent respectively between 2005 and 2022. Of note is the projected increase in households of 12 per cent, indicating a more dispersed population, albeit that the absolute numbers involved are lower than in other areas. Aside from the immediate areas around Inverness and Perth, there is little commuter impact on the route and no significant change in the labour catchment is forecast.	No significant issues identified.	Section 7.6.1 Section 7.6.4	No specific STPR objective
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this corridor.	No significant issues identified.	N/A	No specific STPR objective
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 20 per cent between 2005 and 2022, which is well above the average across the corridors, networks and nodes. There is a bus Park-&–Ride serving Perth which also serves as an interchange for strategic long distance coach services between Perth and Inverness.	Forecast percentage increase and absolute value increase are above average, which is a significant issue.	Section 7.6.5 Section 7.6.2	To promote journey time reductions, particularly by public transport, between Inverness and the central belt, primarily to allow business to achieve an effective working day when travelling between these centres. To improve the operational effectiveness of the A9 as it approaches Perth and Inverness.

Corridor 6 – Inverness to Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Stabilise total CO_2 emissions Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute around 2 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 3 per cent of the overall road based emissions output. There is a bus Park-&–Ride serving Perth which also serves as an interchange for strategic long distance coach services between Perth and Inverness.	The opportunity to impact on such small increases is limited, therefore no significant issue is identified.	Section 7.6.5 Section 7.6.2	No specific STPR objective
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows a strategic performance issue on this corridor that has an identified objective, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	N/A	To address issues of driver frustration relating to inconsistent road standard, with attention to reducing accident severity.
	Promote seamless travel	The small nature of settlements on the corridor means that physical integration is usually achieved, but the low frequency of public transport services acts against this. The Park-&-Ride site at Broxden (Perth) also acts as strategic interchange point for long distance coaches and local bus services.	No significant issues identified.	Section 7.6.4	No specific STPR objective
	Improve the competitiveness of public transport relative to the car	Nearly 76 per cent of households have access to a car in the corridor, which is above the national average of 67 per cent. The higher availability of cars together with dispersed nature of the population will tend to reduce the competitiveness of public transport. The general level of public transport mode share in the corridor is around 5 per cent. Between the	Level of mode share is a significant issue which is difficult to address across the corridor because of the dispersed population. However, end to end movements, which form a significant proportion of journeys can be	Section 7.6.1 Table 7.6.1	To promote journey time reductions, particularly by public transport, between the central belt and Inverness primarily to allow business to achieve an effective working day when travelling between these centres.

Corridor 6 – Inverness to Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		corridor and Perth the figure rises to 14 per cent while only 1 per cent of end to end journeys are by made by public transport.	addressed.		
	Improve overall perceptions of public transport	No general rail overcrowding although some seasonality issues associated with tourism. Bus passenger user surveys indicate that there is good level of satisfaction with most aspects of the service although "value and frequency" only receive average ratings by users. Security concerns for male and female passengers on buses using services at the southern end of the corridor are well below the national averages. No data is available for users in Inverness and the Highlands.	No significant issues identified.	Section 7.6.4 Table 7.6.2	No specific STPR objective
	Safety	The accident rate on the A9 is below the national average, however the proportion of fatal and serious accidents is significantly higher than the national average.	The issue of severity is of significance. The impact of accidents in terms of delay due to lack of alternatives is noted.	Section 7.6.4	To address issues of driver frustration relating to inconsistent road standard, with attention to reducing accident severity.

3.6.8 Corridor 7 – Glasgow to Oban / Fort William

Summary of Key Issues to be addressed by the Objectives

This corridor performs a number of functions. The Glasgow end of corridor is related to urban network issues while the northern end is rural in nature, providing key support to peripheral communities on both the mainland and islands. Public transport issues mirror this, although the level of service provided for the commuter area into Glasgow is good. There are no general congestion problems on the route, but there are major issues of road safety with a very high level of fatal accidents compared with the national average. This corridor provides an important lifeline to the communities it serves, and is also an attractor for tourism.

Performance compared to Expectations

Corridor 7 – Glasgow to Oban / Fort William					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	Between Glasgow and Oban (154km), bus and rail journey times are similar but are significantly slower than the journey by car. Bus performs better than rail for journeys to Fort William, but both are significantly slower than by car. Rail has frequent intermediate stops, a circuitous route and route geometry restricts overall speed, however it serves its functions as an additional transport link and an attractor for tourism. Analysis of travel demand shows that the majority of trips (38 per cent) are between the corridor and Glasgow. While slightly less (36 per cent) are trips between the corridor and elsewhere. The majority of these trips are from the built-up area of West Dunbartonshire to and through Glasgow. Trips in the northern half of the corridor are largely local and include tourist trips. Currently travel time between Glasgow and Oban is 2h 30min by road and 3h 15min / 3h 30min by bus and rail respectively. Travel time to Fort William from	The lack of competitive journey times and infrequent services, particularly on rail is a constraint to use, but the dispersed nature of population is an overall limiting factor. Therefore this is not considered to be an issue of significant magnitude.	Figure 7.7.6a	No specific STPR objective
	Reduce inter-urban journey time on public transport			Table 7.7.1 Figure 7.7.6a and 7.7.6b	No specific STPR objective

Corridor 7 – Glasgow to Oban / Fort William					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		Glasgow by comparison is 2h 30min by car and 3h 20min / 4h by bus and train respectively.[17] Public transport in this corridor is providing important accessibility linkages for rural communities and providing enhanced journey time must be seen in this context.			
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	The southern part of the corridor is affected by peak congestion as a result of commuter demand. The route generally operates with an average speed that is below the free flow speed. The single carriageway routes are affected by high levels of HGV traffic, tourist traffic during the summer and poor road geometry that restricts overtaking opportunities. Freight movements are measured by HGV kms per route km which indicates a low 2005 base (<500) and only marginal growth to 2022 (final level <500) in this corridor, giving it the 15th highest level of all the corridors. Minor level of variability in journey time, which is forecast to be reduced in 2022 compared with 2005.	The geometric constraints particularly on the A82 are of note and are a significant issue.	Section 7.7.4 Figure 4.33 and 7.7.5	To provide improved road standards and overtaking opportunities.
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Not part of the corridors delivering this objective.	No significant issues identified.	N/A	No specific STPR objective

[17] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 7 – Glasgow to Oban / Fort William					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	The northern part of the corridor (Highland and Argyll and Bute) is forecast to have a population increase of around 4 per cent between 2005 and 2022 and an employment increase of around 9 per cent. In the southern part (W Dunbartonshire) the population is forecast to fall by 9 per cent and employment to remain broadly stable. Trip demands in the corridor are significantly biased towards commuter demands into and out of Glasgow. The high level of trips within the corridor compared with those between the end points is of note.	No significant issues identified.	Section 7.7.1 Section 7.7.3	No specific STPR objective
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this corridor.	No significant issues identified.	N/A	No specific STPR objective
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 12 per cent between 2005 and 2022, which is around the average across the corridors, networks and nodes. .	Forecast percentage increase and absolute value increase are around average levels, however activity is focussed on access to Glasgow, which is addressed within Glasgow network objectives. This is not considered a significant issue in the corridor.	Section 7.7.5	No specific STPR objective

Corridor 7 – Glasgow to Oban / Fort William					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Stabilise total CO_2 emissions Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute around 1 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 2 per cent of the overall road based emissions output. Demand management measures in the form of bus priority is in place on the major routes connecting the southern half of the corridor into Glasgow city centre. Glasgow City Council has a policy of discouraging commuter parking in the city centre, while many of the rail station car parks on approach to Glasgow are at capacity.	The opportunity to impact on such small increases is limited therefore this is not considered a significant issue.	Section 7.7.5 Section 7.7.2	No specific STPR objective
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows a strategic performance issue on this corridor that has an identified objective, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	Section 7.7.4	To reduce accident severity to the national average.

Corridor 7 – Glasgow to Oban / Fort William					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Promote seamless travel	The small nature of settlements in the north of the corridor means that physical integration is usually achieved, particularly at Fort William and at Oban for ferry travel, but the low frequency of public transport services acts against this. In the southern part of the corridor, the need to interchange is impacted more significantly by commuter operations. Major rail service interchanges such as Dalmuir are important and give a wide access to destinations through feeder services. The SPT Zonecard is available to public transport users in the southeast portion of the corridor within the SPT area and allows unlimited travel on public transport within the designated SPT zones.	No significant issues identified.	Section 7.7.4 Section 7.7.2	No specific STPR objective
	Improve the competitiveness of public transport relative to the car	Within the Highland and Argyll and Bute areas, the proportion of households with access to a car is between 72 and 75 per cent, West Dunbartonshire has a significantly lower than average proportion at 57 per cent. In the south of the corridor, public transport has a relatively high modal share (21 per cent), which reflects the heavy usage of suburban rail services and bus services along the northern bank of the Clyde. The general level of public transport mode share for the whole corridor is around half that figure at 10 per cent. This reflects the changing characteristics of the corridor the further you get from Glasgow.	No significant issues identified.	Section 7.7.1 Section 7.7.4 and Table 7.7.1	No specific STPR objective
	Improve overall perceptions of public transport	No general rail overcrowding but some seasonal issues from tourism. Operating constraints on lines in Glasgow are noted. Bus user surveys indicate a general “average” level of satisfaction with most aspects of the service	No significant issues identified.	Section 7.7.4 Table 7.7.5	No specific STPR objective

Corridor 7 – Glasgow to Oban / Fort William					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		although 'coverage' receives a good rating and frequency receives a "poor" rating. Security concerns for male and female passengers on buses using services at the southern end of the corridor are higher than those using services further north and west in the corridor.			
	Safety	The accident rate and fatal accident rate are higher than the national average.	Elevated levels are a matter of significance.	Section 7.7.4	To reduce accident severity to the national average.

3.6.9 Corridor 8 – Aberdeen to North East Scotland and Northern Isles

Summary of Key Issues to be addressed by the Objectives

This area has a widely dispersed population and high levels of car ownership. The corridor provides support for peripheral communities to the north of Aberdeen. The majority of trips are between the corridor and Aberdeen. Accident rates are slightly above national average, but by small margins.

Performance compared to Expectations

Corridor 8 – Aberdeen to North East Scotland and Northern Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	There is no rail infrastructure in this corridor. Bus is significantly slower than car for journeys between Aberdeen and Fraserburgh (79km) with journey times of 2 hrs compared with 1hr 20mins.[18] Travel demand from the corridor is heavily balanced towards trips to Aberdeen (76 per cent). Only 3 per cent of all trips are within the corridor itself. While the remaining trips are from the corridor to destinations other than Aberdeen. These figures stress the importance that Aberdeen plays in terms of population and employment within northeast Scotland. With no train services in the corridor the only alternative to the car is the bus. Bus journey times are generally about a third longer that those by car. This is as a consequence of the buses' stopping patterns, which is consistent with the major function of the corridor in linking communities with Aberdeen.	No significant issues identified.	Figure 7.8.6	No specific STPR objective
	Reduce inter-urban journey time on public transport			Table 7.8.1 Figure 7.8.6	No specific STPR objective
	Promote journey time	Construction of the AWPR is forecast to increase	No significant issues	Section 7.8.4	No specific STPR objective

[18] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 8 – Aberdeen to North East Scotland and Northern Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	average speeds and reduces peak congestion. The overall average speeds remain below the free flow speed, resulting from the traffic demand and lack of overtaking opportunities. Freight movements are measured by HGV kms per route km which indicates a low 2005 base (<500) and only marginal growth to 2022 (final level <500) in this corridor, giving it the 16th highest level of all the corridors. Minor level of variability in journey time, which is forecast to be reduced in 2022 compared with 2005.	identified.	Figure 4.3.3 and 7.8.5	
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Not part of the corridors delivering this objective.	No significant issues identified.	N/A	No specific STPR objective
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	Between 2005 and 2022 overall population in the corridor is forecast to reduce by around 2 per cent. Employment is forecast to increase by around 4 per cent and the number of households is forecast to increase by around 10 per cent. Around 76 per cent of trips are between the corridor and Aberdeen, highlighting the importance of the commuting on this corridor.	No significant issues identified.	Section 7.8.1 Section 7.8.3	No specific STPR objective
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this corridor.	No significant issues identified.	N/A	No specific STPR objective
Red	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 3 per cent between 2005 and 2022, which is	Forecast percentage increase and absolute	Section 7.8.5	No specific STPR objective

Corridor 8 – Aberdeen to North East Scotland and Northern Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		low in comparison to the average across the corridors, networks and nodes.	value increase are very low. This is not considered to be a significant issue.		
	Stabilise total CO_2 emissions Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute less than 1 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 1 per cent of the overall road based emissions output. Demand management measures are in place along the corridor offering Park-and –Ride facilities at two locations. The two sites at Ellon and Bridge-of-Don are both north of the city centre. Bus priority measures are in place for buses travelling towards the city centre and controlled parking measures are in operation with the central area.	The opportunity to impact on such small increases is limited. Forecast percentage increase and absolute value increase are low. This is not considered to be a significant issue.	Section 7.8.5 Section 7.8.2	No specific STPR objective
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this corridor, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	N/A	To promote continuing reduction in accident rates and severity rates across the strategic transport network.
	Promote seamless travel	The dispersed population makes it difficult to serve at the trip origin, but major Park-&-Ride facilities at Ellon and Bridge of Don have been put in place to intercept trips at key points on the network. The nature of settlements in the north of the corridor means that physical integration is usually achieved, particularly at Fraserburgh and at Peterhead but the low frequency of public transport services acts against this.	No significant issues identified.	Section 7.8.4	No specific STPR objective

Corridor 8 – Aberdeen to North East Scotland and Northern Isles					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Improve the competitiveness of public transport relative to the car	82 per cent, of Aberdeenshire households have access to a car compared with just 66 per cent in Aberdeen city. Bus remains the only alternative to the car with only 4 per cent of trips from the corridor to Aberdeen and just 1 per cent of trips to elsewhere outside the corridor being made by public transport. Direct accessibility to these services is low due to the dispersed nature of the population within the corridor.	No significant issues identified.	Section 7.8.1 Section 7.8.4	No specific STPR objective
	Improve overall perceptions of public transport	No rail network on this corridor.	No significant issues identified.	Section 7.8.4	No specific STPR objective
	Safety	The accident rate and fatal accident rate are slightly above the national average. Some clusters of severe accidents are identified.	Localised issues of accident severity.	Section 7.8.4	No specific STPR objective*

* no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

3.6.10 Corridor 9 – Glasgow to Perth

Summary of Key Issues to be addressed by the Objectives

This corridor has a significant function as part of the linkage between Glasgow and Inverness/Aberdeen. The A9 has a notable accident cluster issue that has been the subject of recent investigations. Overcrowding predictions for train services show that there is significant crowding on the line between Stirling / Dunblane and Glasgow. The road network on approach to Glasgow and at key junctions is forecast to suffer from congestion in the peak periods by 2022. Both of these rail and road issues have an impact on the ability of the corridor to effectively support economic activity.

Performance compared to Expectations

Corridor 9 – Glasgow to Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	Rail and car journey times between Glasgow and Perth (around 90km) are broadly comparable, but the frequency of rail services limits its competitiveness. Bus times are less competitive due to intermediate stop issues. The analysis of the travel demand indicates that 45 per cent of trips are between the corridor and elsewhere. While 40 per cent of journeys are contained just within the corridor itself. Of the remaining trips 10 per cent are from the corridor to Glasgow and 5 per cent are to Perth. This reflects the strategic nature of the corridor as the main route between northern Scotland and Glasgow, west central and southern areas of the country. Public transport (train) journey times between Glasgow and Perth are very competitive with the car for centre to centre journeys (both are 1h 30mins). The relatively low frequency of rail services (hourly) on the route reduces the competitiveness of this mode for end to end journeys, although frequency is greater south of Dunblane. The bus journey times on	Crowding on rail services between the corridor and Glasgow is an issue of significance.	Figure 7.9.6	No specific STPR objective
	Reduce inter-urban journey time on public transport			Table 7.9.1	To address the current and forecast rail overcrowding into Glasgow.

Corridor 9 – Glasgow to Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		the corridor are less competitive with the car due the number of stops on the route.[19] Overall trip concentration in southern part of the corridor gives an important localised focus for journey time issues.			
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	While the improvements to the M80 increase the free flow speed that could be expected on the route, the forecast average speeds attained by 2022 are similar to that experienced today. There is major congestion in the peak but even the inter peak period is forecast to operate significantly below the free flow level. There is a 19 per cent increase in demand between 2005 and 2022. There are no current plans to provide priority systems as part of the upgrading. The freight movements measured by HGV kms per route km in this corridor show an almost doubling by 2022 over a large base in 2005 (around 1200 to around 2300). This corridor is third busiest in terms of HGV movements and reflects the nature of the corridor as one of the key corridors for commercial traffic in the country. Current variability in journey time is forecast to be replicated by 2022.	Forecast congestion issues are of significance, particularly in the context of the importance of the corridor to freight movements.	Section 7.9.4 Figures 4.33 and 7.9.5	To improve the efficiency and reliability of the operation of the southern sections of the M80 on approach to Glasgow, particularly for priority vehicles.
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	This corridor forms part of the link between Glasgow and Aberdeen/Inverness. Journey time between Glasgow and Perth are very competitive between modes with the car and train journeys both around 1h 30mins. However, the onwards journeys to Aberdeen and Inverness by train	Significant issue.	Figure 7.9.6	To promote journey time reductions, particularly by public transport, between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working

[19] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 9 – Glasgow to Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		suffers as a result of low service frequency which in turn reduces the competitiveness of this mode. The bus journey times on the corridor are less competitive with the car due the number of stops on the route. This is also true for the onward journeys to the two northern destinations.			day when travelling between these centres.
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	The overall population in the corridor is forecast to decrease by 2 per cent between 2005 and 2022, though this encompasses a more marked decrease in the south and an increase in the north. At the same time, employment is forecast to increase by around 9 per cent. Around 40 per cent of trips are within the corridor, indicating a significant internal market. A very small proportion of trips are between the corridor and Perth and only 10 per cent of trips are between the corridor and Glasgow. With 45 per cent of trips between the corridor and other destinations, the importance of interchange and through travel opportunities on public transport is noted.	The focus of trip activity in the southern part of the corridor is noted.	Section 7.9.1 Section 7.9.3	To improve the efficiency and reliability of the operation of the southern sections of the M80 on approach to Glasgow, particularly for priority vehicles.
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this corridor.	No significant issues identified.	N/A	No specific STPR objective
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 7 per cent between 2005 and 2022, which is below the average across the corridors, networks and nodes.	Forecast percentage increase and absolute value increase are relatively low. This is not a significant issue in the corridor.	Section 7.9.5	No specific STPR objective

Corridor 9 – Glasgow to Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Stabilise total CO_2 emissions Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute around 11 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 9 per cent of the overall road based emissions output. Emissions growth is driven by additional freight volumes which are expected to be carried largely by HGV. The rail network in this corridor carries a high tonnage compared with other parts of the Scottish network, though this is concentrated on the route via Cumbernauld. In terms of demand management car parking is provided at all stations on the corridor, with a large number of spaces provided at Croy station. There are Park-&-Ride facilities at Stirling (Springkerse) and Perth (Broxden), which also acts as an interchange for long distance coach services. Car parking charges are used as a demand management measures in Perth, Stirling and in particular Glasgow.	Forecast percentage increase is above average and absolute value increase is high. This is a significant issue.	Section 7.9.5 Section 7.9.2	To address the current and forecast rail overcrowding into Glasgow. To improve the efficiency and reliability of the operation of the southern sections of the M80 on approach to Glasgow, particularly for priority vehicles.
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows a strategic performance issue on this corridor that has an identified objective, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	Section 7.9.4	To reduce the severity of accidents to the national average.
	Promote seamless travel	Bus and rail facilities in Perth are closely located and there are plans to further integrate these. Within the corridor, the bus and rail stations in Stirling are closely located. In Glasgow, integration is less close both between different rail services and between rail and bus. The SPT Zonecard is available to public transport	Glasgow issues considered within urban network analysis. These are not significant corridor issues.	Section 7.9.4	No specific STPR objective

Corridor 9 – Glasgow to Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		users in the south west portion of the corridor within the SPT area and allows unlimited travel on public transport within the designated SPT zones.			
	Improve the competitiveness of public transport relative to the car	There is considerable variation in car availability across the corridor ranging from 64 per cent (North Lanarkshire) to 79 per cent (East Dunbartonshire). . In those areas which are above the national average of (67 per cent). The higher availability of the car will in most cases tend to reduce the competitiveness of public transport. The overall level of mode share in the corridor is around 9 per cent of all trips, however for trips to/from the corridor to Glasgow the mode share for public transport is 17 per cent. Between Glasgow and Perth 12 per cent of all trips are by public transport. These figures demonstrate a competitive mode share in the corridor.	No significant issues identified.	Section 7.9.1 Section 7.8.4 Table 7.9.1	No specific STPR objective
	Improve overall perceptions of public transport	There is significant overcrowding on diesel services between Stirling and Glasgow and these are forecast to worsen. The main line between Edinburgh and Glasgow via Falkirk also serves part of this corridor and operates with some overcrowding at present that is forecast to worsen These problems are tied in with the capacity constraint on both services and passenger throughput at Queen Street Station in Glasgow. Bus passenger user surveys indicate that there is generally good level of satisfaction with most aspects of the service although “reliability and value” both only receive average ratings by users. While “vehicle	The issues of rail overcrowding are of major significance given increasing demands to travel and the ability of the rail network to attract trips.	Section 7.9.4 Table 7.9.3	To address the current and forecast rail overcrowding into Glasgow.

Corridor 9 – Glasgow to Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		quality" was deemed to be below average Security is a concern for male and female passengers using buses; in particular females in North Lanarkshire feel particularly vulnerable travelling at night.		Section 7.9.	
	Safety	Issue of number of severe accidents resulting from manoeuvres through the central reserve on the A9 section. This is the subject of current network management studies.	Elevated level of severe accidents is of significance.	Section 7.9.4	To reduce the severity of accidents to the national average.

3.6.11 Corridor 10 – Edinburgh to Stirling

Summary of Key Issues to be addressed by the Objectives

The current high level of usage of the Park-&-Ride facilities shows that there is a high level of demand for public transport from journey origins that are not directly accessible to the rail network. No safety issues have been identified. The importance of Grangemouth in terms of the container traffic and associated freight operations is noted, particularly in light of the proposed National Planning Framework 2.

Performance compared to Expectations

Corridor 10 – Edinburgh to Stirling					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	Rail journey times are comparable with car in this corridor and are competitive for centre-to-centre journeys. Bus is less competitive, but the differential between the modes is not as significant as in other locations. When interchange time is taken into account, the public transport modes are relatively competitive. The analysis of the travel demand indicates that 43 per cent of trips are between the corridor and elsewhere. A further 22 per cent of trips are contained just within the corridor itself. A similar proportion of trips (14 per cent) travel between the corridors two destinations of Edinburgh and Stirling. The overall public transport journey time between Edinburgh and Stirling (distance 61km) is comparable with the car at 1h 20mins (train).[20] Overall public transport journey times are attractive on this corridor within the labour catchment area.	Public transport performs well against car on this corridor. This is not a significant issue for the corridor.	Figure 7.10.6	No specific STPR objective
	Reduce inter-urban journey time on public transport				No specific STPR objective
	Promote journey time	The average speed on the trunk road is already well	Congestion and journey	Section 7.10.4	To improve access to

[20] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 10 – Edinburgh to Stirling					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	below the free flow speed and this situation is forecast to significantly worsen by 2022 in all time periods. However, this delay is largely focussed at the eastern end of the corridor at Edinburgh. As there are no current facilities to prioritise vehicles, these delays impact on all traffic. Most of the increase in delay is expected to result from deteriorating junction performance The impact of localised and corridor congestion on freight movements associated with Grangemouth is noted. The freight movements measured by HGV kms per route km in this corridor show a 50 per cent increase by 2022 over a moderately large base in 2005 (around 1000 to around 1500), giving it the 8th highest level of all the corridors. This is not surprising as this key corridor for the movement of freight and goods, particularly from the port and refineries at Grangemouth. Variability in journey time is forecast to increase by 2022.	time issues focussed on Edinburgh urban network. This is not a significant issue for the corridor.	Figure 7.10.5	Grangemouth port and freight hub. To address shortfalls in the provision of public transport to and from Edinburgh and increase public transport modal share.
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Not part of the corridors delivering this objective.	No significant issues identified.	N/A	No specific STPR objective
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other	Population in the corridor is forecast to increase by around 4 per cent with an 11 per cent increase in households between 2005 and 2022. Employment is forecast to increase by around 7 per cent over the same period.	The forecast reduction in the Edinburgh labour catchment area is a highly significant issue.	Section 7.10.1	To address shortfalls in the provision of public transport to and from Edinburgh and increase public transport modal share.

Corridor 10 – Edinburgh to Stirling					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	policy measures that promote reduction in need to travel i.e. planning policy).	Grangemouth is identified as an Area of Economic Activity and is a location of significant employment. The results of the analysis of Edinburgh show a significant reduction in the labour catchment area.		Section 7.10.2	
	Support the development and implementation of proposed national development identified in the NPF2.	The national development schemes at Grangemouth and Edinburgh Airport should be recognised.	Issues relating to access to Grangemouth is of significance from a corridor perspective.	N/A	To promote efficient and effective transport links to support the development and implementation of the proposed national developments at Grangemouth and Edinburgh Airport identified in the NPF2.
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 6 per cent between 2005 and 2022, which is around half the average across the corridors, networks and nodes.	Forecast percentage increase and absolute value increase are low. This is not a significant issue.	Section 7.10.5	No specific STPR objective
	Stabilise total CO_2 emissions Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute around 5 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 4 per cent of the overall road based emissions output. There are bus Park-and-Ride sites on the outskirts of both Stirling and Falkirk, while there is limited parking available at all railway stations in the corridor. There are currently no dedicated bus priority measures in place on the route.	Forecast percentage increase is of significance and absolute value increase is above average.	Section 7.10.5 Section 7.10.2	To address shortfalls in the provision of public transport to and from Edinburgh and increase public transport modal share.

Corridor 10 – Edinburgh to Stirling					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this corridor, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	Section 7.10.4	To promote continuing reduction in accident rates and severity rates across the strategic transport network.
	Promote seamless travel	The provision of Edinburgh tram to the airport will improve seamless access for this gateway. The high use of rail station car parks leads to a lack of ability to access the network. Bus and rail have generally good interchange within Edinburgh city centre, with the exception of the bus station location. At Stirling, bus and rail stations are located within easy walking distance of each other. Along the rest of the corridor there is reasonably good integration between local bus and rail services.	Effective access to public transport opportunities, especially the rail network, is a significant issue.	Section 7.10.4	To address shortfalls in the provision of public transport to and from Edinburgh and increase public transport modal share.
	Improve the competitiveness of public transport relative to the car	The general level of public transport mode share in the corridor as a whole is around 7 per cent. Between the corridor and Edinburgh however, this rises to 27 per cent. Between Edinburgh and Stirling 14 per cent of trips are by public transport which reflects the competitiveness of the mode in centre to centre journeys. Households' access to car ranges from 69 per cent (Clackmannanshire) to 75 per cent (West Lothian), which in both cases is above the national average of (67 per cent). The higher availability of the car will in most cases tend to reduce the competitiveness of public transport.	Public transport journey times are competitive but access is a significant issue.	Section 7.10.1 Table 7.10.1	To address shortfalls in the provision of public transport to and from Edinburgh and increase public transport modal share.
	Improve overall perceptions of	Data indicates that rail services are becoming	This is an issue which	Section 7.10.4	To address shortfalls in the

Corridor 10 – Edinburgh to Stirling					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	public transport	overcrowded on this route, with this forecast to worsen in future years. There are significant constraints affecting available train paths on the western approaches to Edinburgh. Bus user surveys indicate a general "average" level of satisfaction with most aspects of the service although 'coverage and frequency" receive an above average rating. There are no serious security concerns for bus and train users using public transport in the corridor.	significantly restricts the ability of the rail network to provide an alternative to car travel.	Table 7.10.3 Section 7.10.4	provision of public transport to and from Edinburgh and increase public transport modal share.
	Safety	The accident rate and fatal accident rate are below national average.	No significant issues identified.	Section 7.10.4	No specific STPR objective*

* no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

3.6.12 Corridor 11 – Perth to Dundee

Summary of Key Issues to be addressed by the Objectives

This corridor provides part of the linkage between Aberdeen and the central belt. No safety issues identified on this route, largely as a result of recent investments in providing near-motorway-standard route. There is a good public transport service.

Performance compared to Expectations

Corridor 11 – Perth to Dundee					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	Rail and car are comparable for the 35km centre-to-centre journeys (typically 45min and 40 min respectively), but the hourly rail frequency will impact on the ability of this mode to capture a higher proportion of trips. Bus is less competitive in terms of journey time (typically 55min), but has higher frequency than rail. The combination of bus and rail offers a good level of service as an alternative to the car.[21] Analysis of the travel demand for the corridor identifies the two-thirds (66 per cent) of all trips are end to end journeys. While a further 23 per cent of all trips are from the corridor to elsewhere, predominately to destinations south of Perth. This reflects the linking nature of this corridor between Aberdeen/Dundee and Perth and southern Scotland.	No significant issues identified.	Figure 7.11.5	No specific STPR objective
	Reduce inter-urban journey time on public transport			Table 7.11.1	No specific STPR objective
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be	The average speed on the trunk road is not forecast to change significantly by 2022. The average speed is slightly below the free flow speed, mainly as a result of operational problems west of Dundee. There are no current opportunities for vehicle prioritisation.	Issues relating to Swallow roundabout operation are addressed in the Dundee Urban Network.	Section 7.11.4 Figure 4.33	No specific STPR objective

[21] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 11 – Perth to Dundee					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	The freight movements are measured by HGV kms per route km. In this corridor there is expected to be approximately one third (33 per cent) increase by 2022 over a moderately large base in 2005 (around 700 to around 1000), giving it the 10th highest level of all the corridors. This is not surprising as this is a key corridor for the movement of freight and goods, particularly between Dundee/Aberdeen and the rest of southern Scotland. Little variability in journey time is evident.		and 7.11.4	
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	This is part of the link between Aberdeen and Glasgow and Aberdeen to Edinburgh. Currently travel time between Aberdeen and Edinburgh (around 200km) is around 3h 30min by car and rail and 4h 45 by bus. Between Aberdeen and Glasgow (235km) it is around 3h 30min by car, just over 5h by bus and just under 4h by rail. A round trip could therefore take between 7h and 10h depending on mode and destination, which does not permit those travelling to achieve an effective working day.	Significant issue.	N/A	To promote journey time reductions, particularly by public transport, between the central belt and Aberdeen primarily to allow business to achieve an effective working day when travelling between these centres.
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	Population in the corridor is forecast to reduce by around 13 per cent between 2005 and 2022, with employment increasing by 15 per cent. It is likely however that the local Development Plan would address the issue of population reduction. The majority of trips (66 per cent) on the corridor are between Perth and Dundee, which includes through trips from the central belt to the north-east of Scotland. The proportion of trips wholly within the corridor is very low. This highlights the role of the corridor in providing for strategic movements.	No significant issues identified.	Section 7.11.1 Section 7.11.3	No specific STPR objective
	Support the development and implementation of proposed	No national development schemes within this corridor.	No significant issues identified.	N/A	No specific STPR objective

Corridor 11 – Perth to Dundee					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	national development identified in the NPF2.				
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 14 per cent between 2005 and 2022, which is slightly above the average across the corridors, networks and nodes.	Forecast percentage increase and absolute value increase around average. This is not a significant issue on this corridor.	Section 7.11.5	No specific STPR objective
	Stabilise total CO_2 emissions Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute around 2 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 1 per cent of the overall road based emissions output. There are no specific demand management measures in place within the corridor, however there are bus priority measures in place in both Dundee and Perth.	While the percentage of the overall increase that is predicted to be experienced in this corridor is low, the situation within the corridor itself shows a high level of predicted increase. This is a significant issue.	Section 7.11.5 Section 7.11.2	To promote journey time reductions, particularly by public transport, between the central belt and Aberdeen primarily to allow business to achieve an effective working day when travelling between these centres.
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this corridor, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	Section 7.11.4	To promote continuing reduction in accident rates and severity rates across the strategic transport network.

Corridor 11 – Perth to Dundee					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Promote seamless travel	Perth bus and rail stations are closely located and there are plans to further improve integration. In Dundee bus and rail services are less well integrated. Within the corridor, the only point of bus/rail interchange is Invergowrie where the size of the settlement means that physical integration is catered for, but stopping service frequency limits the interchange potential.	No significant issues identified.	Section 7.11.3 and 7.11.4	No specific STPR objective
	Improve the competitiveness of public transport relative to the car	Perth & Kinross and Angus have proportions of households with access to a car of 76 and 74 per cent respectively. Dundee City is below the national average at 55 per cent. Around 7 per cent of all trips are made by public transport; this varies widely with 40 per cent of trips between the corridor and Perth being made by public transport. While 9 per cent of centre to centre journeys are also made by public transport. Access to Area of Economic Activity at West Dundee is considered in Dundee urban network.	No significant issues identified.	Section 7.11.1 Table 7.1.1	No specific STPR objective
	Improve overall perceptions of public transport	No rail overcrowding is forecast. Bus passenger user surveys indicate that there is a level of satisfaction with most aspects of the service although “simplicity and value” only receive average ratings. Security concerns for male and female passengers on both buses and trains are generally lower than the respective averages for Scotland.	No significant issues identified.	Table 7.11.2 Section 7.11.4	No specific STPR objective
	Safety	Accident rates and fatal accident rates are below the national average.	No significant issues identified.	Section 7.11.4	No specific STPR objective

3.6.13 Corridor 12 – Edinburgh to Perth

Summary of Key Issues to be addressed by the Objectives

The corridor is an important commuter corridor for Edinburgh but it is also an important link in joining Inverness with the capital. Congestion mapping shows that the problems are concentrated at the southern end of the corridor relating to the Forth crossing. This confirms that Forth crossing study is a principal focus for this corridor. This corridor, along with Corridor 14, serves Edinburgh Airport and the port facilities at Rosyth. Rail journey time is a problem particularly for journeys onward to Inverness.

Performance compared to Expectations

Corridor 12 – Edinburgh to Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	Rail journey time is comparable with car for centre-to-centre journeys (distance 67km), although the competitiveness is significantly affected by the low rail frequency over the full route length. Bus is less competitive than car and rail resulting from stops to serve major destinations on route, such as Dunfermline. Only a small proportion of trips (3 per cent) are between the corridor and Perth, with 11 per cent being between the corridor and Edinburgh. 28 per cent of trips are within the corridor itself and representative of the internal Fife market. 7 per cent of trips are end-to-end between Edinburgh and Perth. The majority of trips (51 per cent) are between the corridor and other destinations. These figures emphasize the function of the corridor in providing for through trips. While rail journey times are competitive, Perth is not within realistic commuting distance of Edinburgh. The journey time between Perth and Edinburgh is similar for car and rail (1h 40min) but about 2h for bus	Overall journey times are a significant issue due to their impact on longer distance trips such as Edinburgh to Inverness and Aberdeen.	Figure 7.12.6	To reduce Edinburgh to Perth public transport journey times and increase opportunities to travel by public transport.
	Reduce inter-urban journey time on public transport				To reduce Edinburgh to Perth public transport journey times and increase opportunities to travel by public transport.

Corridor 12 – Edinburgh to Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		due to stops to serve intermediate destinations such as Dunfermline.[22]			
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	The average speed on the trunk route is significantly below the free flow speed in all time periods, shows a high degree of impact by peak demand and is forecast to worsen in future years. There are some facilities to allow prioritisation for buses associated with the Ferrytoll Park-&-Ride facility. The freight movements measured by HGV kms per route km shows around a 50 per cent increase by 2022 (around 800 to around 1300), giving it the 9th highest level of all the corridors. The variability in journey time that is currently experienced is around 20 per cent and this is forecast to remain broadly consistent in the future, although the journey time will have increased significantly over this period. These issues are of importance in the context of traffic using the current ferry service to the continent.	Increased journey times are a significant issue.	Section 7.12.4 Figure 7.12.5	To improve the efficiency of the M90/A90 during periods of peak demand with a focus on reducing the conflict between longer distance and local traffic.
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	This is part of the link between Inverness and Edinburgh. Currently travel time between Inverness and Edinburgh (around 250km) is around 4h by car and rail and 5h by bus. Between Inverness and Glasgow (around 275km) it is around 3h 45min by car, 4h by rail and 5h by bus. A round trip could therefore take between 7h 30min and 10h, which does not permit those travelling to achieve an effective working day.	Significant issue.	N/A	To promote journey time reductions, particularly by public transport, between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.

[22] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 12 – Edinburgh to Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	Between 2005 and 2022, population is forecast to decrease by around 5 per cent. Over the same period, employment is forecast to increase by 14 per cent showing a growth in the internal economy within the corridor. With 51 per cent of trips being made between the corridor and other destinations and 28 per cent within the corridor itself, this indicates the strength of the internal market within Fife and the importance of the corridor in supporting travel to and from places of work. This corridor is important in supporting the Edinburgh labour market, however issues relating to this are addressed within Corridor 14 and the Edinburgh urban network.	No significant issues identified.	Section 7.12.1 Section 7.12.3	No specific STPR objective
	Support the development and implementation of proposed national development identified in the NPF2.	National development schemes at Rosyth, Forth Crossing and Edinburgh Airport should be recognised.	Significant issues.	N/A	To promote efficient and effective transport links to support the development and implementation of the proposed national developments at Rosyth, Forth Crossing and Edinburgh Airport identified in the NPF2.
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 9 per cent between 2005 and 2022, which is slightly below the average across the corridors, networks and nodes.	Forecast percentage increase and absolute value increase are below average, and are not considered a significant issue.	Section 7.12.5	No specific STPR objective
	Stabilise total CO_2 emissions	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is	Forecast percentage increase and absolute	Section 7.12.5	To reduce Edinburgh to Perth public transport

Corridor 12 – Edinburgh to Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	predicted to contribute around 5 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 4 per cent of the overall road based emissions output.	value increase are above average, and is therefore a significant issue, which may be addressed by increasing public transport modal share.		journey times and increase opportunities to travel by public transport. To improve the efficiency of the M90/A90 during periods of peak demand with a focus on reducing the conflict between longer distance and local traffic.
Improve Quality, Accessibility and Affordability	Promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this corridor, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	Section 7.12.4	To promote continuing reduction in accident rates and severity rates across the strategic transport network.
	Promote seamless travel	Park-&-Ride facilities are located at Ferrytoll and Kinross, with an additional facility closer to Edinburgh at Ingliston. Bus and rail integration relating to the Fife Circle is addressed within Corridor 14 (Edinburgh to Dundee).	No significant issues identified.	Section 7.12.1 and 7.12.4	No specific STPR objective
	Improve the competitiveness of public transport relative to the car	Both Perth & Kinross and Fife have levels of household access to a car of 76 and 70 per cent respectively.	No significant issues identified*	Section 7.12.1	No specific STPR objective
	Improve overall perceptions of public transport	Rail overcrowding levels on the Fife Circle line are already shown to be an issue and these are forecast to worsen in future years. This is addressed within Corridor 14 (Edinburgh to Dundee).	No significant issues identified*	Section 7.12.4	No specific STPR objective
	Safety	The accident rate and fatal accident rate are below	Local issues of clusters.	Section 7.12.4	No specific STPR

Corridor 12 – Edinburgh to Perth					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		the national average. Some localised accident cluster issues.			objective**

* issues addressed in Corridor 14 (Edinburgh to Dundee)

** no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

3.6.14 Corridor 13 – Glasgow to Edinburgh

Summary of Key Issues to be addressed by the Objectives

The Edinburgh Glasgow corridor is key to the delivery of economic growth within the central belt and the access to employment in a densely populated part of the network. The current transport networks – both road and rail – suffer from problems of congestion, which may inhibit future economic growth. Projected trends in population change do not help. Although the rail network is generally dense there are areas of significant population, notably Livingston, with poor levels of provision. South-east electrics rail services serving Glasgow have lowest of the reported overcrowding level. Peak capacity problems mean that demand management needs to be considered on M8 corridor.

Performance compared to Expectations

Corridor 13 – Glasgow to Edinburgh					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	Rail is competitive with car for centre-to-centre trips (distance 73km) and has a high frequency of service. Bus is slightly less competitive than rail but still offers high frequency services. These results are reflected in the high public transport modal share for trips between the two cities (25 per cent). Although this public transport mode share is relatively high, this only applies to 9 per cent of trips within the corridor. A further 23 per cent of trips are wholly within the corridor, with 35 per cent of trips being between the corridor and other destinations. Around 20 per cent of trips are between the corridor and Edinburgh with the remaining 13 per cent being between the corridor and Glasgow. The differential importance in trips balance between serving Edinburgh and Glasgow is of note. While public transport journey time for centre-to-centre journeys is considered acceptable, the need to interchange for many journeys impacts on the viability of the overall journey time. From a strategic perspective, achieving a faster journey time between the centres would have a dual benefit in reducing	In considering a national objective to reduce journey times on public transport, links between Scotland's two major cities are of key importance.	Figure 7.13.6 and Section 7.13.3	No specific STPR objective
	Reduce inter-urban journey time on public transport				To increase public transport capacity and reduce journey time between Edinburgh and Glasgow.

Corridor 13 – Glasgow to Edinburgh					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		time spent travelling for centre-to-centre trips, many of which are for reasons of business, and secondly in making trips requiring interchange more competitive. In terms of journey time competitiveness, rail and car have a similar journey time of 1h 15min with bus taking longer. Of key importance is the high level of use of rail for centre-to-centre journeys.[23]			
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	The average speed on the trunk route is significantly below the free flow speed in all time periods, and is forecast to worsen in future years. With the exception of the upgraded section between Baillieston and Newhouse, all other parts of the M8 are forecast to experience congestion. The freight movements measured by HGV kms per route km shows the largest growth of all the corridors and the largest final level by 2022 (around 1950 to around 3350). The importance of this corridor in supporting business and industry across central Scotland and beyond is clearly a significant issue. Some variation in journey time is currently experienced with peak and inter-peak differing by around 20 per cent. Although the variation is forecast to be slightly lower by 2022, this has to be seen in the context of the future inter-peak having a longer journey time than the current peak.	Forecast deterioration in the operation of the M8 is an issue of major significance, particularly in the context of the importance of the corridor to freight movements.	Section 7.13.4 Figure 7.13.5	To make best use of the available road space and better manage peak demand
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working	This corridor links Glasgow and Edinburgh and although it does not directly link to Aberdeen or Inverness, it provides a valuable function in linking the central belt to the various routes serving the north.	Significant issue.	N/A	To promote journey time reductions, particularly by public transport, between the central belt and Aberdeen/Inverness

[23] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 13 – Glasgow to Edinburgh					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	day when travelling between these centres.				primarily to allow business to achieve an effective working day when travelling between these centres.
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	Between 2005 and 2022, the population in the corridor is forecast to increase by around 5 per cent, with the number of households increasing by 13 per cent. Employment is forecast to increase by 31 per cent. This is a significant rise compared with other areas and reflects the accessibility of this corridor to major centres and the Livingston/Bathgate Area of Economic Activity. Of major importance is the forecast reduction in the Edinburgh labour market due to the impacts of congestion. This is particularly important in the context of the West Edinburgh area of economic activity, which this corridor has a major role in serving. Only 9 per cent of trips are between the two cities. 23 per cent of trips are within the corridor, 13 per cent are between the corridor and Glasgow, 20 per cent between the corridor and Edinburgh and 35 per cent between the corridor and other destinations. This emphasizes the multiple roles that the corridor fulfils.	The increase in employment within the corridor and the forecast reduction in the Edinburgh labour catchment area are likely to result in changing travel patterns that will have a key interaction in the area of the corridor between Livingston and Edinburgh. This is a significant issue.	Section 7.13.1 Section 7.13.3	To increase public transport capacity and frequency between Livingston and Edinburgh.
	Support the development and implementation of proposed national development identified in the NPF2.	National development schemes at Grangemouth and Edinburgh Airport may require to be considered in the context of this corridor.	Significant issues.	N/A	To promote efficient and effective transport links to support the development and implementation of the proposed national developments at Grangemouth and Edinburgh Airport identified in the NPF2.

Corridor 13 – Glasgow to Edinburgh					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 13 per cent between 2005 and 2022, which is slightly above the average across the corridors, networks and nodes.. Much of this growth is driven by forecast additional HGV journeys due to increased freight demand. In terms of demand management, the approaches to Edinburgh have two major bus Park-&-Ride facilities at Ingliston and Hermiston. In the western end of the corridor, the emphasis has been to provide parking at rail stations and make best use of the Glasgow suburban rail network.	Forecast percentage increase and absolute value increase are around average, however absolute value of emissions per person km at 2022 is high. This is a significant issue.	Section 7.13.5	To contribute to both a reduction in emissions per person kilometre and a reduction in overall emissions.
	Stabilise total CO_2 emissions	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute around 16 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 9 per cent of the overall road based emissions output. Much of this growth is driven by forecast additional HGV journeys due to increased freight demand. The rail network in this corridor carries a relatively high tonnage compared with other parts of the Scottish network across the various lines. In terms of demand management, the approaches to Edinburgh have two major bus Park-&-Ride facilities at Ingliston and Hermiston. In the western end of the corridor, the emphasis has been to provide parking at rail stations and make best use of the Glasgow suburban rail network. These measures are not sufficient on their own to meet the issue of tackling emissions.	This corridor is predicted to make a large contribution to the increase in emissions. Forecast percentage increase and absolute value increase are very high. Absolute value of emissions at 2022 is high. This is a significant issue.	Section 7.13.5	
	Reduce CO_2 emissions in line with expectations from the emerging climate change bill.				

Corridor 13 – Glasgow to Edinburgh					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this corridor, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	Section 7.13.4	To promote continuing reduction in accident rates and severity rates across the strategic transport network.
	Promote seamless travel	In both Edinburgh and Glasgow, bus and rail services do not have good integration due to the relative location of the stations. In Glasgow there is also an issue with rail-rail integration due to the dislocation of Central and Queen Street stations. There are major Park-&-Ride facilities on the western approach to Edinburgh at Ingliston and Hermiston. The SPT Zonecard is available to public transport users in the western portion of the corridor within the SPT area and allows unlimited travel on public transport within the designated SPT zones.	Integration of services in Glasgow is an issue addressed in the Glasgow urban network.	Section 7.13.1	To increase public transport capacity and reduce journey time between Edinburgh and Glasgow.
	Improve the competitiveness of public transport relative to the car	For trips between Glasgow and Edinburgh, public transport has a high level of mode share at 25 per cent. Future forecasts show an overall increase in public transport trips of around 15 per cent. This figure however masks two significant increases of around a 50 per cent increase in the number of public transport trips between Glasgow and Edinburgh and a 43 per cent increase in public transport trips between the corridor and Edinburgh. Lower levels of car ownership compared with the national average should give a natural advantage to public transport, provided that service provision is adequate.	The forecast increase in public transport use, particularly in relation to Edinburgh, is of significance when considered in the context of current levels of crowding on services.	Section 7.13.1	To increase public transport capacity and reduce journey time between Edinburgh and Glasgow. To increase public transport capacity and frequency between Livingston and Edinburgh.
	Improve overall perceptions of	Rail overcrowding on the main line between Glasgow	Rail overcrowding on the	Section 7.13.4	To increase public transport

Corridor 13 – Glasgow to Edinburgh					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	public transport	and Edinburgh via Falkirk is forecast to worsen in future years. Surveys of those using bus services within the corridor suggest that people are generally content with all aspects of the service.	main Edinburgh to Glasgow service is of major significance.		capacity and reduce journey time between Edinburgh and Glasgow;
	Safety	Accident rate and fatal accident rate are both lower than national average.	No significant issues identified.	Section 7.13.4	No specific STPR objective*

* no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

3.6.15 Corridor 14 – Edinburgh to Dundee

Summary of Key Issues to be addressed by the Objectives

The corridor is a significant element in the Edinburgh commuter catchment area and suffers significant overcrowding. It is also a significant element in the network linking major urban centres including Dundee and Aberdeen with the economic and employment opportunities in Edinburgh. The corridor, along with Corridor 12, serves Edinburgh Airport and the port facilities at Rosyth. These are competing requirements on the rail network. The level of current peak rail demand for journeys across the Forth is high, resulting in overcrowding. The forecast level of increase in demand for this trip is also high. The high level of public transport modal split for this journey indicates that public transport can and is a viable option for many of these journeys. It is therefore necessary to particularly target this issue within the objectives. The poor public transport journey times between Edinburgh and Dundee contribute to the isolation of Aberdeen in terms of public transport. They also result in Dundee not having access to a wider range and number of employment opportunities. Upgrades to the road network is likely to only partially address this issue, and objectives leading to other potential intervention options might be appropriate.

Performance compared to Expectations

Corridor 14 – Edinburgh to Dundee					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	Currently travel time between Dundee and Edinburgh (around 84km) is around 2h by car and rail and around 2h 35min by bus. A round trip could therefore take between 4h and 5h. Although this would in general support business travel to achieve an effective working day, it does mean that Dundee and much of Fife is not able to effectively support the Edinburgh labour market area.[24] Analysis of demand shows that just over half of the trips are within the corridor itself, supporting the internal Fife market. 6 per cent and 7 per cent respectively are between the corridor and Dundee/Edinburgh. 31 per cent of trips are between the corridor and other destinations, leaving only 2 per cent between Edinburgh and Dundee.	Major barrier to linking Aberdeen to central Scotland and providing a wider labour catchment for Edinburgh. This is a significant issue.	Figure 7.14.6	To reduce public transport journey time between Edinburgh and Dundee.
	Reduce inter-urban journey time on public transport				To reduce public transport journey time between Edinburgh and Dundee.

[24] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 14 – Edinburgh to Dundee					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	Bus priority measures are already provided between the Forth and Edinburgh to aid bus progress during times of peak demand. Some variability in journey time but forecast 2022 performance is similar to that of 2005. However, journey times are forecast to increase by between 10 per cent and 17.5 per cent depending on time of day. This will impact on prioritised vehicles as part of the general traffic. Increases in variability are of importance in the context of traffic using the current ferry service to the continent. The freight movements measured by HGV kms per route km are forecast to rise by around 50 per cent (around 1100 to around 1600),.giving it the 7th highest level of all the corridors.	The impact of increased congestion on prioritised vehicles is of significance.	Sections 7.14.4 and 7.14.5	To improve the efficiency of the M90/A90 during periods of peak demand with a focus on reducing the conflict between longer distance and local traffic.
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	This is part of the link between Aberdeen and Edinburgh. Currently travel time between Dundee and Edinburgh (around 84km) is around 2h by car and rail and around 2h 35min by bus. A round trip could therefore take between 4h and 5h. Although this would in general support business travel to achieve an effective working day, it does mean that Dundee and much of Fife is not able to effectively support the Edinburgh labour market area.	Significant issue.	N/A	To promote journey time reductions, particularly by public transport, between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e.	This corridor passes through Fife and includes major settlements such as Kirkcaldy and Glenrothes, but is largely rural in nature. While population in the corridor is forecast to fall by around seven per cent, employment is forecast to rise by around four per cent. The population / employment figures suggest an increasing employment situation requiring appropriate support from the transport network.	The corridor will remain important in supporting the labour requirements of Edinburgh. The provision of effective transport links is therefore a significant issue.	Section 7.14.1 and Figure 7.14.2 Section 7.14.2,	To increase public transport capacity and frequency between Fife and Edinburgh.

Corridor 14 – Edinburgh to Dundee					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	planning policy).	The corridor provides for the strategic accesses to the airports at Edinburgh and Dundee and to the port at Rosyth. At the southern end of the corridor there is a concentration of trips onto the two Forth crossings resulting in high levels of demand for both road capacity and train paths.		7.14.3 and Figure 7.14.4	
	Support the development and implementation of proposed national development identified in the NPF2.	National developments at Forth Crossing, Rosyth and Edinburgh Airport should be recognised.	No significant issues identified.	N/A	To promote efficient and effective transport links to support the development and implementation of the proposed national developments at Rosyth, Forth Crossing and Edinburgh Airport identified in the NPF2.
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 5 per cent between 2005 and 2022, which is less than half the average across the corridors, networks and nodes.	Forecast percentage increase and absolute value increase are low. This is not considered a significant issue.	Section 7.14.5	No specific STPR objective
	Stabilise total CO_2 emissions	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is	Forecast percentage increase and absolute	Section 7.14.5	To reduce public transport journey time between

Corridor 14 – Edinburgh to Dundee					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	predicted to contribute around 3 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 4 per cent of the overall road based emissions output. Some demand management measures are in place including a major Park-&-Ride facility at Ferrytoll on the north side of the Forth. This is augmented by bus priority measures between the Forth and Edinburgh to aid bus progress during times of peak demand.	value increase are below average, but still of significance. Impacts of commuting trips serving Edinburgh are of note.		Edinburgh and Dundee. To increase public transport capacity and frequency between Fife and Edinburgh. To improve the efficiency of the M90/A90 during periods of peak demand with a focus on reducing the conflict between longer distance and local traffic.
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this corridor, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	Section 7.14.4	To promote continuing reduction in accident rates and severity rates across the strategic transport network.
	Promote seamless travel	There is a lack of effective interchange between bus and rail in Glenrothes and Kirkcaldy. In general, car parks at railway stations are close to or at capacity.	Parking capacity at rail stations is of significance in terms of overall public transport accessibility.	Sections 7.14.2 and 7.14.4	To increase public transport capacity and frequency between Fife and Edinburgh.
	Improve the competitiveness of public transport relative to the car	A majority of trips are within the corridor, with small but significant proportions accessing the two cities. In the case of Edinburgh, nearly one-third of trips are made by public transport. However, current rail services on the Fife Circle are overcrowded during the peak period and there is a forecast growth of 25 per cent in rail usage. In the case of Dundee public transport trips are three times lower than Edinburgh, however of the trips between Dundee and Edinburgh, around 22 per cent use public transport. The number of households in the corridor with access	Overcrowding on the Fife circle is significant and is a barrier to modal shift and serving emerging areas of economic activity.	Section 7.14.1 Section 7.14.3 and Figure 7.14.4 Section 7.14.3, 7.14.4 and Table 7.14.2	To increase public transport capacity and frequency between Fife and Edinburgh.

Corridor 14 – Edinburgh to Dundee					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		to a car is slightly above the national average as might be expected with a significant rural area within the corridor.			
	Improve overall perceptions of public transport	All of the Park-&-Ride facilities at rail stations on the Fife Circle are operating at capacity. The forecast increases in demand to travel will place increased demands on the infrastructure and services, particularly around the Forth, with a major conflict in terms of rail overcrowding and the forecast increase in demand for use.	Access to rail is an intrinsic part of the consideration of network carrying capacity and is a significant problem.	Sections 7.14.4 and 7.14.3	To increase public transport capacity and frequency between Fife and Edinburgh.
	Safety	Accident rate and fatal accident rate are similar to national average.	No significant issues identified.	Section 7.14.4	No specific STPR objective*

* no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

3.6.16 Corridor 15 – Glasgow to Stranraer and South West

Summary of Key Issues to be addressed by the Objectives

The corridor serves an important and growing market for commuting into Glasgow from the South West and also serves the development of tourism in the area. The corridor also provides connections to the ports at Troon, Cairnryan and Stranraer and to the international airport at Prestwick. There is currently significant crowding on rail services within the Glasgow commuter belt area and the rail network has a relatively high level of freight demand.

Performance compared to Expectations

Corridor 15 – Glasgow to Stranraer and South West					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	Bus and rail compare well with car for journeys to some parts of Ayrshire, particularly with the combined service frequency level. There are some notable exceptions to this. Over the length of the corridor (136km), bus and rail are slower than car and service frequency is low. Around 39 per cent of trips are wholly within the corridor with 31 per cent between the corridor and Glasgow and 27 per cent between the corridor and other destinations. Only 2 per cent of trips are between the Stranraer and the corridor/Glasgow. The key movements are concentrated around the Ayrshire group of major settlements comprising Irvine, Kilmarnock and Ayr. In terms of journeys to and from Glasgow, for the southernmost (Ayr) car, rail and bus are broadly competitive with journey times between 1h 10min and 1h 35min. For Kilmarnock trips by car (45min) are significantly more competitive than by rail (1h 10min) or bus (1h 5min). For Irvine, the accessibility of the electric coastal	The impact of urban network issues in Glasgow on some movements between this corridor and other destinations is noted, however this matter is addressed within the Glasgow urban network. Other than this, no significant issues identified.	Figure 7.15.6	No specific STPR objective
	Reduce inter-urban journey time on public transport			Table 7.15.1	No specific STPR objective

Corridor 15 – Glasgow to Stranraer and South West					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		services makes rail and car equal at around 1h with bus being less competitive.[25] Public transport journey time for most of Ayrshire places it within viable commuter distance of the Glasgow labour catchment area and the level of demand for use of the rail services suggests that it is an attractive alternative to car use, particularly for those working within Glasgow city centre.			
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	The average speed on the trunk route is forecast to decrease slightly by 2022, largely as a result of increasing congestion on the M77 on approach to Glasgow and in settlements within Ayrshire. The average speed compares well with the free flow speed for the route. There are currently no facilities to permit prioritisation for certain vehicle types. Interaction of longer distance traffic and local traffic within settlements is recognised as a constraint and is of particular importance, particularly as HGV platooning readily occurs, when considered in the context of the linkage that the route provides to the Loch Ryan ports linking to Northern Ireland and on to the Republic of Ireland. The freight movements measured by HGV kms per route km are forecast to rise by over 50 per cent by 2022 compared with 2005 (around 600 to around 900, giving it the 11th highest level of all the corridors. Minor level of variability in journey time, which is forecast to be reduced in 2022 compared with 2005.	The conflict between local and longer distance traffic within some settlements in Ayrshire is of significance, particularly in terms of its impact on people.	Section 7.15.4 Figure 4.33 Figure 7.15.5	To reduce the conflict between longer distance and local traffic with a focus on identified key constraint points. To ensure efficient and effective freight access to the port facilities at Loch Ryan.
	Promote journey time	Not part of the corridors delivering this objective.	No significant issues	N/A	No specific STPR objective

[25] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 15 – Glasgow to Stranraer and South West					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.		identified.		
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	Between 2005 and 2022, the population in the corridor is forecast to decrease marginally by around 2 per cent. Over the same period, household numbers and employment are forecast to increase by 6 and 5 per cent respectively. Around 39 per cent of trips are wholly within the corridor, emphasizing the internal market within Ayrshire. Around 33 per cent of trips are between the corridor and Glasgow, demonstrating the important commuter links between the city and this corridor. A further 27 per cent of trips are between the corridor and other destinations. A very low proportion of trips are between either Glasgow or the corridor and Stranraer.	No significant issues identified.	Section 7.15.1 Section 7.15.3	No specific STPR objective
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this corridor.	No significant issues identified.	N/A	No specific STPR objective
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 8 per cent between 2005 and 2022, which is below the average across the corridors, networks and nodes. There is little evidence of demand management initiatives within the corridor, with only some isolated bus priority measures within the urban areas contributing. This suggests that there may be scope to consider such measures in addressing emissions issues.	Forecast percentage increase and absolute value increase are low. This is not a significant issue for the corridor.	Section 7.15.5	No specific STPR objective

Corridor 15 – Glasgow to Stranraer and South West					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Stabilise total CO_2 emissions	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute around 7 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 7 per cent of the overall road based emissions output. There is little evidence of demand management initiatives within the corridor, with only some isolated bus priority measures within the urban areas contributing. This suggests that there may be scope to consider such measures in addressing emissions issues.	Forecast percentage increase is average but absolute value increase is high. The corridor does make a sizeable contribution to the overall level of emissions. This is a significant issue.	Section 7.15.5	To increase rail capacity between Ayrshire and Glasgow including the Kilmarnock line.
	Reduce CO_2 emissions in line with expectations from the emerging climate change bill.				
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this corridor, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	Section 7.15.4	To promote continuing reduction in accident rates and severity rates across the strategic transport network.
	Promote seamless travel	Rail stations in Ayr and Kilmarnock are not well integrated with the bus stations, although major bus stops are located close by. The rail services at Ardrossan and Stranraer are well integrated with ferry facilities. This is not the case however for Troon and Cairnryan. Prestwick Airport has a dedicated rail station. A Park-&-Ride facility is located close to the junction of the M8 and the M77 at Shields Road in Glasgow that serves trips from this corridor. The SPT Zonecard is available to public transport users in the northern portion of the corridor within the SPT area and allows unlimited travel on public transport within the designated SPT zones.	Localised issues of integration. This is significant at corridor level.	Section 7.15.2	No specific STPR objective
	Improve the competitiveness	Trips between the corridor and Glasgow have the	While in strict journey time	Section 7.15.1	To increase rail capacity

Corridor 15 – Glasgow to Stranraer and South West					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	of public transport relative to the car	highest public transport modal share at around 19 per cent. This is to be expected given the rail and bus links that are available. Within the corridor, around 7 per cent of trips are undertaken by public transport. For Glasgow to Stranraer, the corridor to Stranraer and the corridor to other locations, the proportion using public transport is very low. Car ownership levels are around the national average, though this masks some disparity between areas such as the urban and rural parts of the corridor. Taking the rail system, including Park-&-Ride, as a whole, the level of current and predicted demand exceeds the system's current capacity.	comparison public transport appears to be highly competitive in some areas, the capacity constraints are a significant issue.		between Ayrshire and Glasgow including the Kilmarnock line.
	Improve overall perceptions of public transport	There is rail overcrowding on Ayrshire electric services and this is forecast to get worse. Overcrowding is less acute on the diesel services although it is still a matter of concern. Surveys of bus users indicate a general level of satisfaction with most aspects of the service, although 'value' only received an average rating.	Overcrowding is a significant issue.	Section 7.15.4	To increase rail capacity between Ayrshire and Glasgow including the Kilmarnock line.
	Safety	Accident rates are at or below the national average. Note positive impact of SPECS safety cameras. Some accident clusters identified.	Localised accident cluster issues.	Section 7.15.4	No specific STPR objective*

* no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

3.6.17 Corridor 16 – Stranraer to North West England

Summary of Key Issues to be addressed by the Objectives

The corridor is particularly important for the movement of ferry traffic using Stranraer and Cairnryan, although the majority of trips are internal within the corridor emphasizing the importance of the A75(T) in providing a spine link for Dumfries and Galloway. Evidence suggests that the corridor performs this function well and there is no material deterioration forecast.

Performance compared to Expectations

Corridor 16 – Stranraer to North West England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	There is no rail network along the length of the corridor. Bus journey time is between Stranraer and Carlisle (around 160km) is around 2h 55min compared with 2h 30min by car.[26] The majority of trips (59 per cent) are internal to the corridor, with a further 33 per cent between the corridor and other destinations, such as Ayrshire. A very small proportion (1 per cent) is between Stranraer and England with 4 per cent between Stranraer and the corridor. The corridor therefore serves a key function in supporting the internal market within Dumfries and Galloway, but only supports a small proportion of major inter-urban trips. Public transport in this corridor provides a significant role in linking communities and as such speeding up journey times is likely to be difficult.	No significant issues identified.	Figure 7.16.6	No specific STPR objective
	Reduce inter-urban journey time on public transport			Table 7.16.1	No specific STPR objective
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight,	The average speed on the trunk road shows that there are no significant impacts from peak demand. There is no significant deterioration in the forecast average speed. The average speed is also close to	While there is little variability in journey time, the route has perceived issues relating to	Section 7.16.4	To ensure efficient and effective freight access to the port facilities at Loch Ryan.

[26] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 16 – Stranraer to North West England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	the free flow speed for the route, as might be expected given the addressing of various constraint issues through bypass and improvement schemes. The freight movement measured by HGV kms per route km shows the corridor to have a marginal increase between 2005 and 2022 from a low base (both <500), giving it the 17th highest level of all the corridors.	progressing. This may result from drivers encountering platoons of HGV traffic from the ports. The importance of the route as part of the Trans European Network should be recognised and its significance in supporting linkages with both Northern Ireland and the Republic of Ireland.	Figure 7.16.5 Figure 4.33	
	To promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Not part of the corridors delivering this objective.	No significant issues identified.	N/A	No specific STPR objective
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	Between 2005 and 2022, the population of the corridor is forecast to remain largely unchanged, but household numbers are forecast to rise by around 8 per cent. Over the same period, employment is forecast to rise by around 12 per cent. This indicates an improving situation for the local market. The corridor is remote from the main city labour catchments and there are no identified issues.	No significant issues identified.	Section 7.16.1 Section 7.16.3	No specific STPR objective
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this corridor.	No significant issues identified.	N/A	No specific STPR objective

Corridor 16 – Stranraer to North West England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 7 per cent between 2005 and 2022, which is below the average across the corridors, networks and nodes. There is currently no bus priority or other demand management measures in use in the corridor.	Forecast percentage increase and absolute value increase are low. This is not a significant issue.	Section 7.16.5	No specific STPR objective
	Stabilise total CO_2 emissions Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute around 1 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 2 per cent of the overall road based emissions output.	The opportunity to impact on such small increases is limited. Forecast percentage increase and absolute value increase are low. This is not a significant issue.	Section 7.16.5	No specific STPR objective
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this corridor, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	Section 7.16.4	To promote continuing reduction in accident rates and severity rates across the strategic transport network.
	Promote seamless travel	Strategic bus and rail services in Dumfries are well integrated and rail and ferry are well integrated at Stranraer. At other locations, particularly Annan and Gretna, the integration between bus and rail poorer, however these are localised.	Some localised integration issues but no strategic impacts of significance.	Section 7.16.2	No specific STPR objective
	Improve the competitiveness of public transport relative to the car	Public transport mode share for most of the movements on the corridor is very low or negligible apart from between the corridor and England, which is 14 per cent and is likely to be largely rail and bus movements from Dumfries to Carlisle. The low level of public transport mode share is to be expected given the highly rural nature of much of the corridor and the dispersed population.	No significant issues identified.	Section 7.16.1	No specific STPR objective

Corridor 16 – Stranraer to North West England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Improve overall perceptions of public transport	The rail network section that is in the corridor has no identified overcrowding. Surveys of bus users indicates that those travelling consider various issues of service performance to be better than average, although issues relating to 'reliability', and 'value' score slightly lower.	No significant issues identified.		No specific STPR objective
	Safety	Accident rate and fatal accident rate are similar to national average.	No significant issues identified.	Section 7.16.4	No specific STPR objective*

* no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

3.6.18 Corridor 17 – Glasgow to Inverclyde and Islands

Summary of Key Issues to be addressed by the Objectives

The corridor serves commuting into Glasgow and also links the port of Greenock with the rest of the transport network. It also includes the routes between Glasgow city centre and Glasgow International Airport. It is a tightly constrained corridor for both road and rail through Port Glasgow and Greenock and congestion in the corridor means that freight movement is difficult. Rail and bus offer poor levels of service for commuting into Glasgow. There are safety problems with motorway accident rates well above normal. Inverclyde is designated as an economic regeneration area.

Performance compared to Expectations

Corridor 17 – Glasgow to Inverclyde and Islands					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	Bus and rail offer a similar level of journey time performance along the corridor with journey times of just over 1h between Glasgow and Greenock and around 1h 20min between Glasgow and Gourock. These however are significantly poorer than the equivalent journey times by car which are, respectively, around 40 min and around 45 min.[27] With around 58 per cent of trips between the corridor and Glasgow, the corridor has a key function in relation to the city, and the long public transport journey times impact the ability of the Inverclyde area to support the Glasgow labour catchment area. For a corridor of around 40km length, the public transport journey times are considered to be excessively long.	The lack of competitive journey times is a significant barrier to achieving higher public transport mode share. Long public transport journey times are a significant issue.	Figure 7.17.6 Table 7.17.1	To increase capacity and reduce journey times by public transport between Glasgow and Inverclyde
	Reduce inter-urban journey time on public transport				To increase capacity and reduce journey times by public transport between Glasgow and Inverclyde
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal	The average speed on the trunk route is forecast to reduce slightly by 2022 but is already significantly below the free flow speed. This is likely to result from congestion on the M8 approaching Glasgow and the impact of at-grade junctions on the A8 section in	This performance issue is significant given the high proportion of trips between the corridor and Glasgow.	Section 7.17.4	To facilitate freight access to Greenock port To improve the efficiency of the A8/M8 during periods of

[27] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 17 – Glasgow to Inverclyde and Islands					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	Inverclyde. The freight movements measured by HGV kms per route km show around a 50 per cent growth between 2005 and 2022 (around 1200 to around 1950) giving this corridor the 4th highest level out of the 20 corridors. Minor level of variability in journey time, which is forecast to be reduced in 2022 compared with 2005, however overall performance will be reduced in terms of reduced speeds and increased journey times.		Figure 7.17.5 Figure 4.33	peak demand with a focus on reducing the conflict between longer distance and local traffic.
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Not part of the corridors delivering this objective.	No significant issues identified.	N/A	No specific STPR objective
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	Between 2005 and 2022, population in the corridor is forecast to increase by 3 per cent with a corresponding rise in household numbers of 14 per cent. Over the same period, employment is forecast to increase by 6 per cent. The importance of regeneration priorities in Inverclyde and the major expansion area at Bishopton are noted. This indicates an increase in local employment relative to commuting trips, however the impact will not significantly reduce the importance of the corridor in supporting the Glasgow labour market, which currently accounts for 58 per cent of trips on the corridor. The performance of the A8/M8 is forecast to worsen and passenger capacity and journey time are highlighted as issues on the rail network.	The poor performance of road in terms of congestion and public transport in terms of capacity means that ability of this area to continue to support the Glasgow labour market will be negatively affected. This is a significant issue.	Section 7.17.1 Section 7.17.3	To increase capacity and reduce journey times by public transport between Glasgow and Inverclyde;
	Support the development and	National development at Glasgow Airport should be	Significant issue.	N/A	To promote efficient and

Corridor 17 – Glasgow to Inverclyde and Islands					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	implementation of proposed national development identified in the NPF2.	recognised.			effective transport links to support the development and implementation of the proposed national development at Glasgow Airport identified in the NPF2.
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 4 per cent between 2005 and 2022, which is well below the average across the corridors, networks and nodes.	Forecast percentage increase and absolute value increase are low. This is not a significant issue.	Section 7.17.5	No specific STPR objective
	Stabilise total CO_2 emissions Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute around 3 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 2 per cent of the overall road based emissions output. Much of this growth is driven by forecast additional HGV journeys due to increased freight demand.	Forecast percentage increase is above average but absolute value increase is below average, however overall value is still of significance.	Section 7.17.5	To increase capacity and reduce journey times by public transport between Glasgow and Inverclyde To facilitate freight access to Greenock port
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows a strategic performance issue on this corridor that has an identified objective, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	Section 7.17.4	To reduce the accident rate to the national road type average on the M8 and A8.

Corridor 17 – Glasgow to Inverclyde and Islands					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Promote seamless travel	There are a number of rail/ferry interchanges within this corridor and the importance of Paisley Gilmour Street is noted in providing interchange between Inverclyde rail services and Ayrshire rail services. A Park-&-Ride facility is provided at Shields Road that can be readily accessed by trips on this corridor. The SPT Zonecard is available to public transport users in the corridor within the SPT area and allows unlimited travel on public transport within the designated SPT zones.	No significant issues identified.	Section 7.17.2	No specific STPR objective
	Improve the competitiveness of public transport relative to the car	Trips within the corridor have more than double the proportion of public transport trips than those between the corridor and Glasgow. This is markedly different from many of the corridors and is indicative of the overcrowding and journey time issues relating to public transport links to Glasgow. The corridor has low levels of household access to a car with Inverclyde and Renfrewshire having levels of 57 and 63 per cent respectively. The low level of car ownership means that public transport should have a natural advantage in competing against car.	Public transport is distinctly less competitive than travel by car, which is a significant issue.	Section 7.17.1 Table 7.17.1	To increase capacity and reduce journey times by public transport between Glasgow and Inverclyde
	Improve overall perceptions of public transport	There is rail overcrowding already on this corridor and this is forecast to worsen in the future. Surveys of bus users indicate that those travelling consider various issues of service performance to be average, although issues relating to 'reliability' and 'coverage' score slightly better.	This is a significant issue that reduces the ability of public transport to compete with car.	Section 7.17.4	To increase capacity and reduce journey times by public transport between Glasgow and Inverclyde
	Safety	Accident rate is significantly higher than national average for the road type. Fatal accident rate is similar to national average.	Elevated accident rate is an issue.	Section 7.17.4	To reduce the accident rate to the national road type average on the M8 and A8.

3.6.19 Corridor 18 – Glasgow to North West England

Summary of Key Issues to be addressed by the Objectives

The corridor serves two major purposes: the northern part is a key route for commuting into Glasgow whilst it is also the key cross-border route carrying passengers and freight to NW England. There are significant congestion problems on the road network on the approaches to Glasgow which reduce the effectiveness of the network. The corridor also contains Scotland's major rail freight hubs at Mossend and Coatbridge.

Performance compared to Expectations

Corridor 18 – Glasgow to North West England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	Rail is competitive with car over shorter distances at the north of the corridor where road congestion is an issue and rail services are provided at high levels of frequency, or over longer distances along the length of the corridor where intercity service rail speed is high.[28] Analysis of demand shows that the largest proportion of trips (33 per cent) is between the corridor and other destinations. This emphasizes the importance of linkages between this corridor and Ayrshire, the Glasgow-Edinburgh corridor and the borders. The corridor also supports a significant commuter zone for Glasgow, evidenced by the 31 per cent of trips between the corridor and the city. The corridor also has a significant level of internal trips (28 per cent). Only 7 per cent of trips are between Glasgow and England and only 1 per cent of trips are between the corridor and England. Between Glasgow and Carlisle, the west coast mainline provides high speed rail services that are	No significant issues identified.	Figure 7.18.6 Table 7.18.1	No specific STPR objective
	Reduce inter-urban journey time on public transport				No specific STPR objective

[28] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 18 – Glasgow to North West England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		highly competitive with car.			
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	The average speed on the trunk route is forecast to remain relatively consistent up to 2022 and is lower than the free flow speed. This should be seen in the context of significant improvements of the M74 completion, Raith Interchange on the M74 and the M8 Associated Network Improvements having taken place. Performance issues are and will be largely a result of congestion at the northern end of the corridor on the approaches to Glasgow. There are currently no facilities to allow priority for particular vehicle types. The freight movements measured by HGV kms per route km show an increase of almost two-thirds between 2005 and 2022 (around 1700 to around 2750), giving the corridor the second highest level overall across all the corridors. Little variability in journey times is evident.	Issue of peak traffic impact on trunk route approaching Glasgow is of significance, particularly in the context of the importance of the corridor to freight movements.	Section 7.18.4 Figure 7.18.5 Figure 4.33	To make best use of the available road space and better manage peak demand taking into account the need to contribute to emissions reduction. To contribute to emissions reduction by facilitating an increase in the proportion of freight passing through the corridor that is carried by rail.
	To promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Not part of the corridors delivering this objective.	No significant issues identified.	N/A	No specific STPR objective
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	Between 2005 and 2022, population in the corridor is forecast to decrease by around 4 per cent while household numbers are forecast to increase by around 4 per cent. Over the same period, employment is forecast to increase by around 2 per cent. The significant redevelopment of the Ravenscraig site is noted. The overall growth figures are marginal increases and decreases.	No significant issues identified.	Section 7.18.1 Section 7.18.3	No specific STPR objective

Corridor 18 – Glasgow to North West England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		With the programmed improvements in place on the road network at the northern end of the corridor, there is no significant impact on the labour market compared with the current situation.			
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this corridor.	No significant issues identified.	N/A	No specific STPR objective
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 15 per cent between 2005 and 2022, which is above the average across the corridors, networks and nodes. This is driven by additional freight volumes which are expected to be carried largely by HGV. The rail network in this corridor carries a high tonnage compared with other parts of the Scottish network.	Forecast percentage increase and absolute value increase are above average and absolute value at 2022 is high, and is a significant issue. The longer distance nature of freight movements on this corridor gives greater potential to achieve modal shift to rail.	Section 7.18.5	To make best use of the available road space and better manage peak demand taking into account the need to contribute to emissions reduction. To contribute to emissions reduction by facilitating an increase in the proportion of freight passing through the corridor that is carried by rail.
	Stabilise total CO_2 emissions	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute around 14 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 12 per cent of the overall road based emissions output. This is driven by additional freight volumes which are expected to be carried largely by HGV. The rail network in this corridor carries a high tonnage	This corridor makes a major contribution to the predicted level of road based emissions in 2022. Forecast percentage increase is above average and absolute value of increase and absolute value at 2022 are both high, and is a significant issue. The longer	Section 7.18.5	

Corridor 18 – Glasgow to North West England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	Reduce CO_2 emissions in line with expectations from the emerging climate change bill.	compared with other parts of the Scottish network.	distance nature of freight movements on this corridor should make rail a viable alternative.		
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this corridor, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	Section 7.18.4	To promote continuing reduction in accident rates and severity rates across the strategic transport network.
	Promote seamless travel	Some locations such as Hamilton have co-located bus and rail stations whereas others such as East Kilbride have facilities that are more remote from one another; however these are more localised issues. The SPT Zonecard is available to public transport users in the northern portion of the corridor within the SPT area and allows unlimited travel on public transport within the designated SPT zones.	No significant issues identified.	Section 7.18.2	No specific STPR objective
	Improve the competitiveness of public transport relative to the car	A very high proportion of trips between Glasgow and England are by public transport (32 per cent). Public transport mode share for trips within the corridor is also relatively high at 16 per cent, but this is consistent with the level of density of public transport services that are provided particularly in the East Kilbride – Hamilton – Motherwell areas.	No significant issues identified.	Section 7.18.1 Table 7.18.1	No specific STPR objective
	Improve overall perceptions of	There is limited rail overcrowding on this corridor at	No significant issue	Section 7.18.4	No specific STPR objective

Corridor 18 – Glasgow to North West England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	public transport	present, particularly due to the increase in services resulting from the re-opening of the Larkhall branch line. However overcrowding is forecast to increase over the STPR period.	identified.		
	Safety	Accident rate similar to national average. Fatal accident rate slightly elevated.	Local issue of increased fatal accident rate.	Section 7.18.4	No specific STPR objective*

* no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

3.6.20 Corridor 19 – Edinburgh to North West England

Summary of Key Issues to be addressed by the Objectives

The corridor has an important role in linking Edinburgh and the surrounding regions to NW England and at its northern end it serves the Edinburgh commuter market. There is forecast to be increasing congestion at the Edinburgh end of the corridor, but elsewhere the road system performs well.

Performance compared to Expectations

Corridor 19 – Edinburgh to North West England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	Rail does not directly serve much of the corridor as the line passes along the western edge between from Edinburgh to Carstairs, where it joins with the west coast mainline. For journeys along the full length of the corridor (around 148km), rail and car have similar journey times of just over 2h, meaning that the inter-urban movements such as Edinburgh to Carlisle does have a competitive public transport alternative to the car. Bus is significantly less competitive with a journey time over this distance of just over 4h due to the need to serve intermediate communities.[29] Almost half of the trips are between the corridor and Edinburgh, emphasizing the importance of settlements in the corridor, particularly at the northern end, in providing part of the Edinburgh labour market. Only 7 per cent of trips are between Edinburgh and England and only 14 per cent of trips are internal within the corridor. A significant proportion of trips are between the corridor and other destinations, likely to be focussed on trips along the east-west axis to Corridors 18 and 20. Public transport on this corridor provides a linkage for	No significant issues identified.	Figure 7.19.6 Table 7.19.1	No specific STPR objective
	Reduce inter-urban journey time on public transport				No specific STPR objective

[29] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 19 – Edinburgh to North West England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		rural communities, so providing speeded up services without negatively impacting on these would be difficult.			
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time reliability.	The average speed on the trunk route is forecast to deteriorate between 2005 and 2022, largely as a result of increased congestion on the approaches to Edinburgh. This is also the major cause of the relatively small gap between average speed and free flow speed. The freight movements measured by HGV kms per route km are forecast to increase by around 50 per cent between 2005 and 2022 (around 1100 to around 1750), giving it the 6th highest level of all the corridors. Minor level of variability in journey time, which is forecast to remain relatively unchanged in 2022 compared with 2005. Current journey time reliability is impacted by some congestion issues and by vehicle interaction on single carriageway sections of route.	Issues relating to Edinburgh urban network, but not significant at corridor level.	Section 7.19.4 Figure 7.19.5 Figure 4.33	No specific STPR objective
	Promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Not part of the corridors delivering this objective.	No significant issues identified.	N/A	No specific STPR objective
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote	Between 2005 and 2022, the population in the corridor is forecast to rise by 7 per cent, with a rise in household numbers of 16 per cent. Over the same period, employment is forecast to rise by 8 per cent. This suggests a broad mirroring of employment and population changes that should maintain commuting proportions at current levels.	Labour catchment issue addressed within urban network, but not significant at corridor level.	Section 7.19.1	No specific STPR objective

Corridor 19 – Edinburgh to North West England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	reduction in need to travel i.e. planning policy).	Around 46 per cent of trips are between the corridor and Edinburgh, with only around 14 per cent wholly within the corridor and around 7 per cent between the corridor and England. This emphasizes the significant commuting relationship of the northern part of the corridor into Edinburgh.		Section 7.19.3	
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this corridor.	No significant issues identified.	N/A	No specific STPR objective
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 11 per cent between 2005 and 2022, which is around average across the corridors, networks and nodes.	Forecast percentage increase and absolute value increase are average, and not considered a significant issue.	Section 7.19.5	No specific STPR objective
	Stabilise total CO_2 emissions	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute around 2 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 3 per cent of the overall road based emissions output.	The opportunity to impact on such small increases is limited. Forecast percentage increase and absolute value increase are below average, and not considered a significant issue.	Section 7.19.5	No specific STPR objective
	Reduce CO_2 emissions in line with expectations from the emerging climate change bill.				
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this corridor, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	Section 7.19.4	To promote continuing reduction in accident rates and severity rates across the strategic transport network.
	Promote seamless travel	Bus based Park-&-Ride is provided at Straiton and	No significant issues	Section 7.19.2	No specific STPR objective

Corridor 19 – Edinburgh to North West England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		Sheriffhall.	identified.		
	Improve the competitiveness of public transport relative to the car	There is a significant split in the public transport mode share for the movements in this corridor. Trips between Edinburgh and England have a high public transport mode share at 23 per cent. Journeys between the corridor and Edinburgh have a relatively high public transport mode share at 15 per cent. All other movements have very low levels of public transport mode share. This is largely a reflection of the highly dispersed nature of settlement within this corridor, also evidenced by the high proportion of households with access to a car compared with the national level. Despite this, it is important to note that the long distance movement along the length of the corridor and the high volume movement between the corridor and Edinburgh both have high public transport mode share.	No significant issues identified.	Section 7.19.1 Table 7.19.1	No specific STPR objective
	Improve overall perceptions of public transport	There are no identified issues relating to rail overcrowding on the route within this corridor. Surveys of bus users indicates that those travelling consider various issues of service performance to be average, although issues relating to 'frequency', 'coverage' and 'vehicle quality' score slightly better.	No significant issues identified.	Section 7.19.2	No specific STPR objective
	Safety	Accident rate and fatal accident rate are slightly above national average.	No significant issues identified.	Section 7.19.4	No specific STPR objective*

* no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

3.6.21 Corridor 20 – Edinburgh to North East England

Summary of Key Issues to be addressed by the Objectives

The corridor plays a key role in supporting the economy of Edinburgh and the surrounding area with strong growth in both population and dispersal. As noted elsewhere increasing congestion is forecast to lead to a shrinkage of the Edinburgh catchment area. Economic growth offers an opportunity for public transport to grow but there is crowding on existing services. Planned economic development on the eastern side of Edinburgh is not well served by existing services. There are no significant problems for interurban journeys within this corridor.

Performance compared to Expectations

Corridor 20 – Edinburgh to North East England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Improved Journey Times and Connections	Promote 'competitive' inter-urban journey times	Rail is highly competitive with car for areas where it is readily accessible. For cross border journeys, rail is significantly faster, for example the rail journey time from Edinburgh to Berwick (around 90km) is 1h 10min but by car is over 1h 30min. Trips between Edinburgh and England and between the corridor and England account for only 24 per cent of trips on the corridor. Bus is not competitive with either rail or car on this corridor.[30]	No significant issues identified.	Figure 7.20.6	No specific STPR objective
	Reduce inter-urban journey time on public transport			Table 7.20.1	No specific STPR objective
	Promote journey time reduction on trunk road network for prioritised vehicles and users (e.g. HOV, freight, bus) where STAG appraisal demonstrates that strong economic case can be balanced with environmental objectives. Elsewhere on trunk road network provide improvements to journey time	There is a forecast decline in average speed on the trunk route between 2005 and 2022, largely as a result of increased congestion on the approaches to Edinburgh. This is also the principal cause of the gap between average speed and free flow speed. The freight movements measured by HGV kms per route km shows a modest increase between 2005 and 2022 on a low level compared with other corridors, (around 600 to around 750),	The impact of commuter flows between the corridor and Edinburgh on strategic trips is an issue of significance.	Section 7.20.4 Figure 7.20.5	To increase the attractiveness and capacity of public transport into Edinburgh to reduce crowding and forecast road congestion.

[30] Journey times on public transport are affected by connections and the proximity of the interchange facilities to the ultimate origin and destination. These issues are taken into consideration in calculating a comparative journey time for public transport against the car. The public transport journey time consists of the timetabled journey time to which is added time taken to account for walking, waiting and interchanging.

Corridor 20 – Edinburgh to North East England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
	reliability.	giving it the 12th highest level of all the corridors. There is forecast to be a minor increase in journey time variability as a result of increased congestion on the approaches to Edinburgh. Current journey time reliability is impacted by some congestion issues and by vehicle interaction on single carriageway sections of route.		Figure 4.33	
	To promote journey time reductions between the central belt and Aberdeen/Inverness primarily to allow business to achieve an effective working day when travelling between these centres.	Not part of the corridors delivering this objective.	No significant issues identified.	N/A	No specific STPR objective
	Maximise labour catchment area in city regions where economic evidence demonstrates that this is required (favouring PT and HOVs and balancing with other policy measures that promote reduction in need to travel i.e. planning policy).	Between 2005 and 2022, population in the corridor is forecast to increase by around 5 per cent, with household numbers increasing by around 14 per cent. Overall, employment levels are expected to remain relatively constant. Around 47 per cent of trips are between the corridor and Edinburgh, emphasizing the major impact on this corridor of commuter journeys into Edinburgh. These issues suggest that the corridor will continue to expand its level of commuter travel to Edinburgh.	This corridor is important in supporting the economic development of Edinburgh and the forecast reduction in Edinburgh's labour catchment area is highly significant.	Section 7.20.1 Section 7.20.3	To increase the attractiveness and capacity of public transport into Edinburgh to reduce crowding and forecast road congestion.
	Support the development and implementation of proposed national development identified in the NPF2.	No national development schemes within this corridor.	No significant issues identified.	N/A	No specific STPR objective

Corridor 20 – Edinburgh to North East England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
Reduced Emissions	Reduce CO_2 emissions per person km	Emissions per person km are forecast to rise by around 7 per cent between 2005 and 2022, which is below average across the corridors, networks and nodes.	Forecast percentage increase and absolute value increase are low, and are not a significant issue.	Section 7.20.5	No specific STPR objective*
	Stabilise total CO_2 emissions	In terms of overall road based CO_2 emissions across the corridors, networks and nodes, this corridor is predicted to contribute less than 1 per cent of the predicted increase between 2005 and 2022. By 2022, the corridor is predicted to be contributing around 2 per cent of the overall road based emissions output.	The opportunity to impact on such small increases is limited. Forecast percentage increase and absolute value increase are low, and are not a significant issue.	Section 7.20.5	No specific STPR objective*
	Reduce CO_2 emissions in line with expectations from the emerging climate change bill.				
Improve Quality, Accessibility and Affordability	To promote continuing reduction in accident rates and severity rates across the strategic transport network, recognising the need to continue the work of the Strategic Road Safety Plan through the STPR period.	While the analysis shows no strategic performance issue on this corridor, the need to generally drive down accident rates and severity rates should be recognised.	Significant issue.	Section 7.20.4	To promote continuing reduction in accident rates and severity rates across the strategic transport network.
	Promote seamless travel	A rail based Park-&-Ride facility is provided at Newcraighall that can readily be accessed by trips approaching Edinburgh.	No significant issues identified.	Section 7.20.2	No specific STPR objective
	Improve the competitiveness of public transport relative to the car	The competitiveness of rail for cross-border journeys is reflected in the high level of public transport mode share for Edinburgh to England journeys (23 per cent). Between the corridor and England there is a poor level of public transport mode share (1 per cent), which is reflective of the longer bus journey times, however these trips only account for 10 per cent of the overall demand. The largest proportion of trips is between the corridor and Edinburgh (47 per cent) and these have a 16 per cent public transport mode share. Forecast road traffic congestion around Edinburgh gives a major potential market	This is a significant issue for trips accessing Edinburgh from the corridor.	Section 7.20.1 Table 7.20.1	To increase the attractiveness and capacity of public transport into Edinburgh to reduce crowding and forecast road congestion.

Corridor 20 – Edinburgh to North East England					
KSO	**National Objective**	**Performance**	**Significance**	**Report 1 Reference**	**STPR Objective**
		for further public transport use, although carrying capacity would require to be improved. It is also notable that the proportion of households with access to a car is high for the whole corridor with values of 72 per cent for Midlothian, 73 per cent for East Lothian and 76 per cent for Scottish Borders.			
	Improve overall perceptions of public transport	Some overcrowding reported for local rail services on this corridor. Surveys of bus users indicate that those travelling consider various issues of service performance to be average.	Issue is of significance.	Section 7.20.4	To increase the attractiveness and capacity of public transport into Edinburgh to reduce crowding and forecast road congestion.
	Safety	Accident rate and fatal accident rate lower than national average. Some localised accident clusters.	Localised accident cluster issues.	Section 7.20.4	No specific STPR objective**

* public transport attractiveness objective will contribute to emissions reduction
** no strategic safety issues are identified, so safety matters addressed through the Network Safety Performance Objective

4 Next Steps

This report sets expectations and objectives for each urban network, strategic node and corridor, which are consistent with national policy, and supported by the evidence set out in Report 1.

The next stage in the review is to generate, sift and appraise options using the STAG framework for interventions which meet these expectations and objectives. The results of this will be presented in Report 3.

The Strategic Environmental Assessment will assess the environmental impacts of the interventions from a strategic perspective.

The outputs from the Strategic Transport Projects Review will allow the Scottish Government to determine its future priorities for investment in the transport network, to ensure that sustainable economic growth can be delivered to allow all of Scotland to share in increased prosperity.