



TRANSPORT  
**SCOTLAND**  
CÒMHDHAIL ALBA

# A96 Dualling Programme

Strategic Environmental Assessment  
Tier 1 Environmental Report  
September 2014



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# A96 Dualling Programme

## Strategic Environmental Assessment

Tier 1 Environmental Report

Document: TSEA96/ER/01

Transport Scotland

September 2014





## Document history

### A96 Dualling Programme

#### Strategic Environmental Assessment (SEA)

Tier 1 Environmental Report

#### Transport Scotland

This document has been issued and amended as follows:

Version	Date	Description	Created by	Verified by	Approved by
1.0	April 2014	Discussion Draft	Susan Rodger/ Gwenn Greenwood	Henry Collin	John Fox
1.1	May 2014	Draft for client comment	SR/ GG	HC	JF
1.2	June 2014	Revised following client feedback	JF	HC	JF
1.3	September 2014	Issue version	HC	GG	JF


## Limitations

Halcrow Group Ltd has been instructed to provide a Strategic Environmental Assessment of the A96 Dualling Programme on behalf of Transport Scotland.

The assessment is based on the information that has been made available at the time of publication and this Environmental Report is presented as a consultation document. Any subsequent additional information arising during the public consultation period may require revision or refinement of the conclusions.

It should be noted that:

- The findings within this report represent the professional opinion of experienced environmental scientists, sustainability consultants and other specialists. Halcrow does not provide legal advice and the advice of lawyers may also be required.
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- Every endeavour has been made to identify data sources, where appropriate.
- This report represents the independent views and recommendations of the consultants conducting the analysis, and may not necessarily reflect the opinions held by Transport Scotland.

<b>SEA ENVIRONMENTAL REPORT – COVER NOTE</b>	
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<b>PART 2</b>	
<b>An Environmental Report is attached for:</b>	
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## A96 Dualling Programme SEA – Key Facts

<b>Responsible Authority</b>	Transport Scotland – MTRIPS Directorate
<b>PPS Title</b>	A96 Dualling Programme
<b>What prompted the PPS</b>	Strategic review of the Inverness to Aberdeen transport corridor following a refocus of national policy and changes to planned development on and adjacent to the corridor in recent years
<b>PPS Subject</b>	Transport Infrastructure
<b>Period covered by PPS</b>	Delivery programme to target completion by 2030
<b>Frequency of updates</b>	Live programme – ongoing review
<b>Area covered by PPS</b>	The Inverness to Aberdeen transport corridor
<b>Purpose and/ or objectives of PPS</b>	<p>The Plan objectives for the Inverness to Aberdeen transport corridor are:</p> <ol style="list-style-type: none"> <li>1. To improve the operation of the corridor and inter-urban connectivity between the cities of Aberdeen and Inverness, and their city regions, through: <ul style="list-style-type: none"> <li>– Reduced journey times;</li> <li>– Improved journey time reliability; and</li> <li>– Reduced conflicts between local and strategic road based journeys.</li> </ul> </li> <li>2. To improve safety for motorised and non-motorised users through; <ul style="list-style-type: none"> <li>– Reduced accident rates and severity; and</li> <li>– Reduced driver stress.</li> </ul> </li> <li>3. To provide opportunities to grow the regional economies on the corridor through; <ul style="list-style-type: none"> <li>– Improved access to the wider strategic transport network; and</li> <li>– Enhanced access to jobs and services.</li> </ul> </li> </ol>
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## Glossary of Terms

Term	Description
A96 corridor	<p>The “corridor” terminology is used in the Inverness to Aberdeen Corridor STAG Appraisal to encompass the area around the current A96 trunk road route and the Aberdeen to Inverness rail line; no fixed distance boundary is defined for the corridor.</p> <p>This terminology was also used in the Strategic Transport Projects Review (STPR, 2008) which refers to the “Aberdeen to Inverness” transport corridor (STPR Corridor 4).</p>
SEA baseline study area or Study area boundary	<p>To set a boundary for SEA assessments, these terms are used to refer to a 15km wide zone around the A96 (i.e. 7.5km either side of the existing road); this also encompasses the Inverness to Aberdeen rail line.</p> <p>This zone defines the study area from which baseline constraints data has been identified and collated for use in the SEA appraisals of Strategic Intervention (STAG) Options.</p>
Indirect effect	<p>For the purposes of this SEA, an indirect effect is one which is related to an indirect consequence of a plan option.</p> <p>For example, where rail service improvements lead to improved attractiveness of an area for development, effects related to such development, such as soil sealing or biodiversity impacts, are considered as indirect effects.</p>
Secondary effect	<p>For the purposes of this SEA, a secondary effect is one which is related to a direct consequence of a plan option.</p> <p>For example, where rail service improvements increase the number of services on the route, this may lead to an increase in surface water runoff pollutants, which may have a secondary effect on local biodiversity.</p>
Strategic Intervention (STAG) Options	<p>These terms are used to refer to six strategic options previously described as ‘SBC options’ in the Tier 1 SEA Scoping Report. This includes full dualling of the A96 as one of the six options.</p> <p>Tier 1 SEA will provide input to the ‘Environment’ criterion requirements for the Inverness to Aberdeen STAG Appraisal, which will in turn inform the developing Strategic Business Case.</p>

## List of Acronyms

Acronym	Definition	Acronym	Definition
AADT	Annual Average Daily Traffic	OS	Ordnance Survey
AQMA	Air Quality Management Area	PES	Preliminary Engineering Services
AWPR	Aberdeen Western Peripheral Route	PM <sub>10</sub>	Particulate Matter under 10 microns in diameter
CA	Consultation Authority	Pop	Population
CNP	Cairngorms National Park	PPS	Policies, Plans and Strategies
CNPA	Cairngorms National Park Authority	RSI	Roadside Interview
CO <sub>2</sub>	Carbon Dioxide		Special Area of Conservation
DMRB	Design Manual for Roads and Bridges	SAC	- international biodiversity designation under the EU Habitats Directive
EA	Environmental Assessment	SBC	Strategic Business Case
EIA	Environmental Impact Assessment	SEA	Strategic Environmental Assessment
ER	Environmental Report	SEPA	Scottish Environment Protection Agency
FC	Forestry Commission	SFRA	Strategic Flood Risk Assessment
GCR	Geological Conservation Review	SNH	Scottish Natural Heritage
GDL	Gardens and Designed Landscapes		Special Protection Area- international biodiversity designation under the EU Birds Directive
GIS	Geographic Information System	SPA	
HGVs	Heavy Goods Vehicles	SPP	Scottish Planning Policy
HH	Human Health	SR	Scoping Report
HRA	Habitats Regulations Appraisal		Site of Special Scientific Interest
HS	Historic Scotland	SSSI	- UK designation for important biodiversity and geodiversity sites
IIP	Infrastructure Investment Plan	STAG	Scottish Transport Appraisal Guidance
KSO	Key Strategic Outcome	STPR	Strategic Transport Projects Review
LA	Local Authority	SuDS	Sustainable Drainage System
n/a	Not Applicable	TS	Transport Scotland
NBN	National Biodiversity Network	WFD	Water Framework Directive
NMU	Non-Motorised Users		Transportation industry shorthand for an overtaking scheme where a single carriageway is widened on one side only to provide 2 lanes on one side and a single lane on the other
NNR	National Nature Reserve	WS2+1	
NO <sub>2</sub>	Nitrogen Dioxide		
NO <sup>x</sup>	Oxides of Nitrogen		
NP	National Park		
NPF	National Planning Framework		
NSA	National Scenic Area		
NTS	National Transport Strategy		

# 1 Introduction

The Scottish Government's '*Strategic Transport Projects Review*' (STPR), published in 2008, set out a number of transport priorities for the Inverness to Aberdeen corridor, for the period to 2032. These included rail enhancements, strategic park and ride opportunities, upgrading the A96 to dual carriageway between Inverness and Nairn, a Nairn bypass, a new bridge at Inveramsay as well as targeted safety and infrastructure improvements.

The STPR was subject to Strategic Environmental Assessment (SEA), in accordance with the Environmental Assessment (Scotland) Act 2005 (the Act); the purpose of which is to consider the likely significant environmental effects of public sector plans, programmes and strategies.

The STPR included preliminary analysis of an option for full dualling of the A96 between Inverness and Aberdeen; however, it was sifted out at an early stage as alternative interventions were considered sufficient to address the corridor objectives at that time. The STPR SEA process did not therefore consider, or provide the opportunity to consult the public on a full dualling option.

'*Scotland's Cities: Delivering for Scotland*' (the Scottish Government's Agenda for Cities), published in 2011, sets out the vital contribution that Scotland's major population centres can make in delivering the Government's Economic Strategy. The Agenda identifies the aim to connect our cities with strong, reliable and resilient transport infrastructure as a key characteristic in supporting growth.

Also published in 2011, the Scottish Government's '*Infrastructure Investment Plan*' (IIP) outlined plans for infrastructure investment over the coming decades. The IIP complements the Agenda for Cities, with a commitment to complete the dual carriageway network between Scotland's cities by 2030, including full dualling of the A96 between Inverness and Aberdeen. As the IIP was a financial plan, it was exempt from SEA under Section 4(3)(b) of the Act.

The renewed focus on developing and promoting economic growth through Scotland's cities and their regions represents a key change in policy since STPR, and will have potential implications for, and impacts on, the performance of the Inverness to Aberdeen corridor's strategic transport networks, as well as on current and future aspirations for development along the corridor.

In response, Transport Scotland has undertaken an Inverness to Aberdeen strategic transport corridor study, focusing on the trunk road and rail networks, to inform a *Scottish Transport Appraisal Guidance* (STAG) appraisal of, and the Strategic Business Case for, alternative transport intervention options within the corridor, in the context of the refocus of national policy.

The implementation of a strategic transport intervention across the breadth of the Inverness to Aberdeen corridor (at either a plan or programme level) would fall within the definition of Section 5(3) of the Act, and that therefore SEA is required.

This SEA project is intended to assess the environmental risks and opportunities associated with a range of strategic transport intervention options now under consideration. The SEA will be delivered under a two-tier approach (explained in Section 2), following good practice including the Scottish Government's recently revised SEA Guidance<sup>1</sup>. The first Tier of SEA is integrated with the appraisal of six alternative 'Strategic Intervention Options' considered under the corridor study. This Tier 1 Environmental Report (ER) sets out the approach to integration of STAG and SEA and presents the findings of the environmental appraisal of each of the six options<sup>2</sup>.

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<sup>1</sup> Strategic Environmental Assessment Guidance, Scottish Government, August 2013  
Available online at <http://www.scotland.gov.uk/Publications/2013/08/3355>

<sup>2</sup> It should be noted that the Tier 1 SEA Scoping Report referred to 'SBC options', whereas this Environmental Report refers to 'Strategic Intervention Options' or 'STAG options', to ensure consistency with other related workstreams

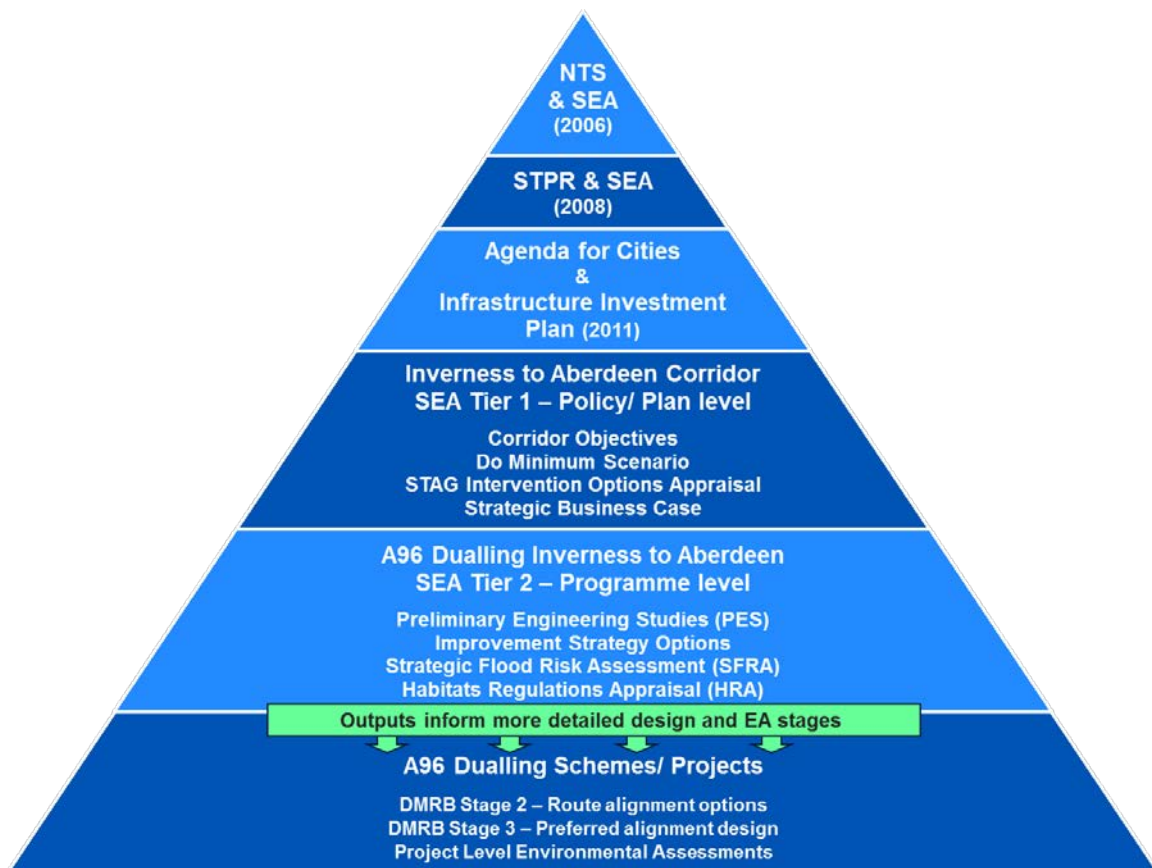
## 2 Tiered Approach to SEA

### 2.1 Overview

A two-tier approach to this SEA was agreed as appropriate with the SEA Consultation Authorities in October 2013. Tier 1 informs the STAG/ Strategic Business Case work associated with the Inverness to Aberdeen strategic corridor study.

Tier 2 SEA will consider a range of alternative ‘Improvement Strategy Options’, which will be developed under a separate Preliminary Engineering Services (PES) workstream, to consider alternative ways of providing dual carriageway connectivity between Inverness and Aberdeen.

Figure 2-1 provides an overview of the context for the approach, highlighting the policy progression from the National Transport Strategy (NTS, 2006), through the STPR (2008), the Agenda for Cities and Infrastructure Investment Plan (2011) and linking through to the development of an A96 Dualling Programme.



**Figure 2-1 Context for a Two-Tier Approach to SEA**

The two tiered approach separates a Policy/ Plan level assessment (effectively SEA of the STAG options to inform the Strategic Business Case at Tier 1) from a Programme level assessment (SEA of the PES alternative improvement strategies at Tier 2).

It is considered that the two tiered approach provides a transparent framework for stakeholder consultation, helping to identify the potential for significant environmental effects (risks and opportunities) at both the policy and programme levels respectively.

## 2.2 Tier 1 SEA – Work to date

Since inception of this SEA project (September 2013), the following activities have been undertaken:

**Table 2-1 Tier 1 SEA Work to Date**

<b>Oct 2013</b>	Consultation meetings with Historic Scotland, Scottish Environment Protection Agency (SEPA) and Scottish Natural Heritage (SNH) to discuss and agree the principles of the Tier 1 and Tier 2 SEA approaches to A96 corridor/ strategic intervention/ dualling proposals
	Review of relevant Policies, Plans and Strategies (PPS) for Tier 1 SEA to inform understanding of the policy framework
	Review of background information including the STPR Environmental Report baseline and assessments, and information prepared as part of the STAG and PES studies to date
	Workshop with the consultants undertaking the STAG Appraisal, PES and the (already committed) Inverness to Nairn (including Nairn Bypass) DMRB Stage 2 design work to ensure integration of programmes of work to ensure the SEA informs the development of the business case and strategic alternatives/ options
	Collation of GIS mapping datasets and review of 'Do Minimum' scheme reports to inform baseline data and current issues
<b>Nov 2013</b>	Development of a constraints based environmental baseline to support Tier 1 SEA assessments including preparation of GIS constraints plans and summary tables for 10 study sections
	Workshops with the STAG and PES teams on the approaches to, and integration of, SEA assessment for each workstream
<b>Dec 2013</b>	Scoping workshop with SEA Consultation Authorities to present and agree the outline approach to SEA for Tier 1 and preliminary discussion on Tier 2
	Tier 1 SEA Scoping Report issued for consultation
<b>Feb 2014</b>	Scoping feedback comments received – further detail on assessment method requested
	Assessment of STAG options
<b>Mar 2014</b>	Interim papers on the adopted SEA methodological approaches to STAG and PES assessment issued to CAs
<b>April to July 2014</b>	Continuing assessment and Tier 1 Environmental Report drafting Agreement with SEA Consultation Authorities that Tier 1 SEA will be aligned with the Inverness to Aberdeen Corridor STAG Appraisal and Tier 2 SEA with the PES options assessment

### 2.2.1 Tier 1 Scoping

The Tier 1 Strategic Environmental Assessment Scoping Report (SR) was provided to the SEA Consultation Authorities (SNH, SEPA and Historic Scotland), as well as the Local Authorities within the Inverness to Aberdeen corridor, in December 2013. The SR detailed the proposed two-tier approach to SEA, which was supported by the Consultation Authorities (CA). A full set of responses to the CA comments on the Scoping Report are provided as Appendix A to this Report.

The SR included a review of an initial list of Policies, Plans and Strategies (PPS) identified as relevant to this SEA. The CAs suggested a number of additional PPS which have been reviewed and included in Appendix B to this Report. A summary discussion on the National Transport Policy context is provided in Section 3.

The SR outlined the intention to use a 15km-wide baseline study area for the SEA; i.e. extending out to 7.5km either side of the existing A96, as this was considered sufficient to capture any baseline constraint data that might be affected by potential corridor interventions. Based on the PPS review and collation of a wide range of environmental constraint data, the SR also recommended the removal (scoping out) of a number of topics from the Tier 1 SEA.

Table 2-2 provides a summary with commentary on the topics which are 'scoped out' of the assessment. It also highlights the range of environmental constraint criteria used to inform the assessment of 'scoped in' topics. GIS was used to map the constraints identified for each SEA topic, as discussed further in Section 4.

**Table 2-2 Scoping Topics for Tier 1 SEA**

SEA Topic	Scoped in/ out	Comment/ Constraint Criteria Considered
<b>Air</b>	<b>Out</b>	One Air Quality Management Area (AQMA) has been identified in Aberdeen city, and one area in Inverurie is identified as being close to quality limits; however, air quality across the remainder of the SEA study area is generally good. As such, this topic has been scoped out of the Tier 1 SEA.
<b>Climatic Factors</b>	<b>Out</b>	Tier 1 SEA considers flood risk as the key climate related factor for STAG Options, with SEPA flood risk constraint mapping included under the 'Water' topic. Tier 2 SEA will include a route-wide Strategic Flood Risk Assessment, also under the 'Water' topic. As such, this topic has been scoped out of the Tier 1 SEA.
<b>Material Assets</b>	<b>Out</b>	Tier 1 SEA assessment of STAG Options will not be usefully informed by an assessment of effects on material assets at this level. As such, this topic has been scoped out of the Tier 1 SEA.
<b>Population and Human Health</b>	<b>In</b>	Constraint criteria considered: <ul style="list-style-type: none"> <li>– Towns and principal centres of population</li> </ul> 'Population' to act as a proxy for consideration of effects on noise, local air quality, etc.
<b>Biodiversity, Flora, Fauna</b>	<b>In</b>	Constraint criteria considered: <ul style="list-style-type: none"> <li>– Ramsar Sites, Special Protection Areas (SPAs) and Special Areas of Conservation (SACs)</li> <li>– Sites of Special Scientific Interest (SSSI) – biological/ mixed</li> <li>– National Nature Reserves (NNR)</li> <li>– Ancient Woodland Inventory (AWI) sites</li> <li>– Native Woodland Survey of Scotland (NWSS) sites</li> </ul>
<b>Soil and Geodiversity</b>	<b>In</b>	Constraint criteria considered: <ul style="list-style-type: none"> <li>– Sites of Special Scientific Interest (SSSI) – geological/ mixed</li> <li>– Geological Conservation Review (GCR) sites</li> <li>– Agricultural land classes 1 to 3.1 (Prime agricultural land)</li> <li>– Peat and peaty soils (James Hutton Institute soil data)</li> </ul>
<b>Water</b>	<b>In</b>	Constraint criteria considered: <ul style="list-style-type: none"> <li>– Key flood risk areas (coastal, fluvial and surface water 1:200 year/ medium flood risk extents)</li> </ul>
<b>Historic Environment</b>	<b>In</b>	Constraint criteria considered: <ul style="list-style-type: none"> <li>– Scheduled Monuments</li> <li>– Listed Buildings</li> <li>– Gardens &amp; Designed Landscapes</li> <li>– Conservation Areas</li> <li>– Battlefield sites</li> </ul>
<b>Landscape</b>	<b>In</b>	There are no designated National Scenic Areas, nor National Parks, within the 15km-wide SEA baseline study area. SEA Scoping proposed that this topic was scoped out of the Tier 1 assessments; however, CA feedback recommended its inclusion. Constraint criteria considered: <ul style="list-style-type: none"> <li>– SNH Landscape Character Assessment Type (Level 3)</li> <li>– National Scenic Areas (NSAs)</li> <li>– National Parks</li> </ul> Tier 1 SEA identifies the SNH Landscape Character Assessment (LCA) types across the 15km-wide study area. No further landscape assessment is included at Tier 1 as it would not support further options sifting. Tier 2 SEA will consider the LCA types crossed by the PES alternative improvement strategy options, as well as National Park and National Scenic Area constraints. The Tier 2 approach to landscape sensitivity will be agreed with SNH through the Tier 2 Scoping phase.



## 2.3 Environmental Report Structure

This Environmental Report details the process and findings of the Tier 1 SEA, structured as follows:

### *Section 3*

A review of policies, plans and strategies (PPS) that could influence/ be influenced by STAG options and which were considered relevant at the Tier 1 level.

### *Section 4*

Overview of the key environmental constraints, designations and baseline issues within the SEA study area boundary.

### *Section 5*

Briefly describes the STAG process and development of six Strategic Intervention Options, the development and assessment of a 'Do Minimum' scenario to predict a future baseline for comparison, and the assessment of the six alternative STAG Options against the future baseline. Also signposts the relevant Appendices which provide the detailed record of assessment and explains how the SEA outputs feed into the STAG appraisal to inform the developing Strategic Business Case for A96 corridor intervention(s).

### *Section 6*

Details the next steps in the Tier 1 SEA process and signposts the deferment of the SEA monitoring framework until the completion of the Tier 2 SEA.

### *Section 7*

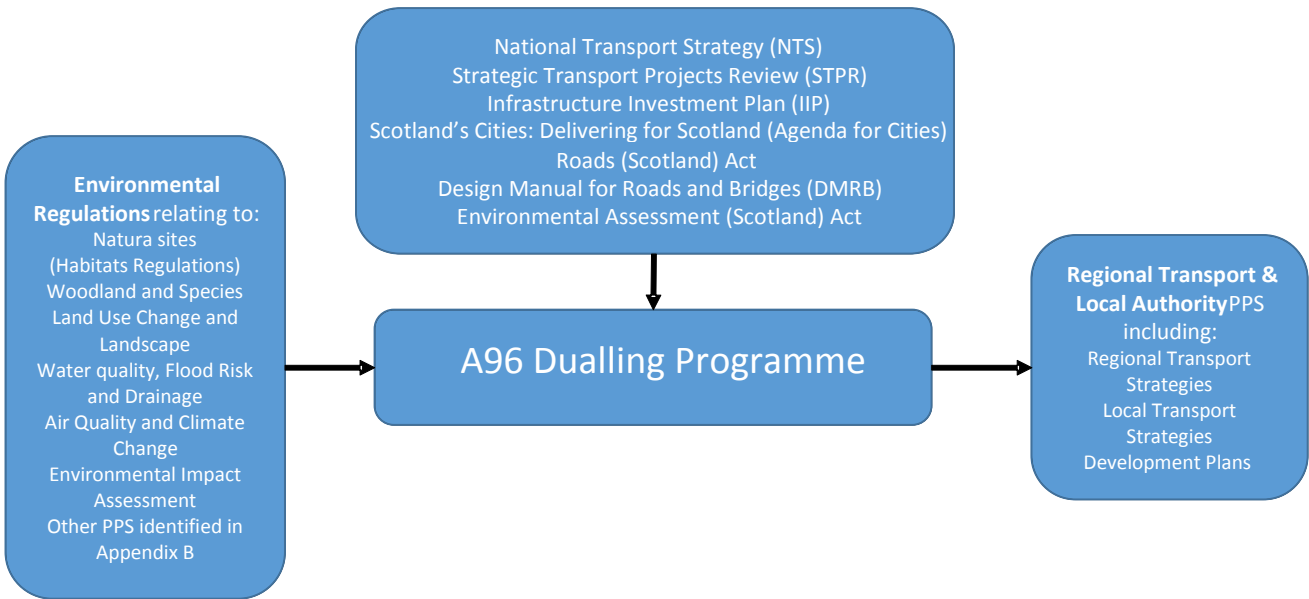
Introduces the Tier 2 SEA constraints-based assessment of a range of improvement strategy options, developed to consider, at a high level, alternative ways of providing dual carriageway connectivity between Inverness and Aberdeen.

The report is supported by the following appendices:

Appendix A	Response to Consultation Authority Comments on Tier 1 Scoping Report
Appendix B	Policies, Plans and Strategies (PPS) Review
Appendix C	GIS Constraints Mapping
Appendix D	Baseline Constraints Summary Tables
Appendix E	STAG Appraisal Do Minimum Scheme Descriptions and Assessment Tables
Appendix F	STAG Appraisal Options Schematic and Assessment Tables
Appendix G	Key References

### 3 Policies, Plans, Strategies (PPS) Review

A wide range of policies, plans and strategies (PPS) have been reviewed with respect to how they may affect or be affected by A96 corridor interventions, including dualling. Figure 3-1 outlines the key types of PPS reviewed (see Appendix B); however, for Tier 1 SEA this section focuses on the changing national policy context since completion of the Strategic Transport Projects Review (STPR) in 2008. This approach is consistent with the policy review work undertaken for the Inverness to Aberdeen STAG/ Strategic Business Case studies.



**Figure 3-1 Key PPS Types Reviewed**

#### 3.1 National Policy Context

The Scottish Government’s National Performance Framework states that the overall Scottish Government’s purpose is, “to focus government and public services on creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth.” This is underlain by five strategic objectives, 16 national outcomes, and 50 national indicators including ones that relate to reducing traffic congestion, deaths on the road network, and the country’s carbon footprint.

The Government Economic Strategy (GES) sets out the measures required to accelerate Scotland’s recovery and support jobs following the recent financial downturn. The six Strategic Priorities set out in the GES are: maintaining and developing a supportive business environment; driving the transition to a low carbon economy; learning, skills and well-being; infrastructure development and place; effective government; and equity.

The GES states that an efficient transport system is one of the key enablers for enhancing productivity and delivering faster, more sustainable growth and is regarded as a key element of the Scottish Government’s overall strategy for infrastructure investment.

The National Transport Strategy (NTS), published in 2006, sets the long term vision for our transport policies. The NTS introduced three Key Strategic Outcomes (KSOs) of “improve journey times and connections, reduce emissions, and improve quality, accessibility and affordability.”

The NTS provided the policy framework for the Strategic Transport Projects Review (STPR), and the KSOs were used as the basis for identifying 13 national objectives. The STPR examined 20 strategic corridors, including Aberdeen to Inverness, and identified evidence based options and priorities for intervention. As mentioned in Section 1, the option for full dualling of the A96 between Inverness and Aberdeen was sifted out at an early stage, however the STPR recommended a number of road and rail based interventions to take forward on the Aberdeen to Inverness corridor, many of which are currently being progressed by Scottish Government.

Recognising the KSOs and the Government's investment hierarchy, the Infrastructure Investment Plan (IIP) published in 2011 provides an overview of the contribution that infrastructure investment, including road and rail schemes, can make to the Government Economic Strategy. The IIP sets out the Government's plans for infrastructure investment over the coming decades, explaining that infrastructure is seen by the Scottish Government as being a key driver of short and long-term economic growth. The IIP also commits to completing the dualling of the road network between Scotland's cities by 2030, including between Inverness and Aberdeen.

Scotland's Cities: Delivering for Scotland (Agenda for Cities), published in 2011, outlines the contribution that Scotland's major population centres can make to the aims and aspirations of the Government Economic Strategy. It sets out that successful cities are linked by key characteristics supporting growth including being "connected cities, with strong digital and transport infrastructure". Connectivity, both within and between cities is of particular relevance in this case, as is reduced journey times between the cities.

The National Planning Framework 3 (NPF3), published in 2014, provides guidance for Scotland's development to 2030, setting out strategic development priorities to support the Scottish Government's central purpose of sustainable economic growth. Investments in infrastructure are seen as key in ensuring the competitiveness of places and are needed to "strengthen international links, tackle congestion, reduce journey times between our cities and support our rural communities". The economic and connectivity benefits brought about by improvements to the Inverness to Aberdeen railway and the A96 trunk road are specifically referenced within the NPF3.

Scottish Enterprise, with support from Highlands and Islands Enterprise, developed the National Renewables Infrastructure Plan (N-RIP) which was published in 2010. The purpose of this document is to "support the development of a globally competitive offshore renewables industry based in Scotland." Aberdeen at the eastern end of the corridor and Ardersier, near the western end of the corridor, are identified in the report as first phase sites to meet the needs of the offshore wind industry. Aberdeen is identified as a site of Distributed Manufacturing and Operation / Maintenance activities while Ardersier as a site of Integrated Manufacturing.

In the light of changes in policy set out above, Transport Scotland is now reviewing the business case for strategic transport intervention along the A96 corridor between Inverness and Aberdeen, taking into account the outputs of the STPR, the Agenda for Cities objectives, IIP commitments and the wider policy support for improving strategic transport connectivity within the region.

These policy developments represent a change to the context for strategic road connections between Scotland's cities, requiring a change to the assumptions and objectives previously used to inform the STPR. The current national policy context therefore set the framework for revising A96 corridor assessments, including confirmation of the strategic business case for intervention and this Strategic Environmental Assessment.

### 3.2 Summary of other PPS Implications for this SEA

A number of recurrent issues were identified through the PPS review. In terms of 'Biodiversity, Flora and Fauna', EU legislation including the Habitats Directive (92/43/EC) and the Birds Directive (79/409/EEC) place restrictions on developments which may affect Natura 2000 designated sites. In addition, effects on national and local designations such as Sites of Special Scientific Interest (SSSI) must also be taken into consideration. As such, designated conservation areas have been mapped, using GIS, as part of the environmental constraints baseline.

The Water Framework Directive (WFD) and the Water Environment and Water Services (Scotland) Act (WEWS) require the protection of the water environment in accordance with WFD targets. Whilst interventions on the Inverness to Aberdeen corridor may present risks *to* the water environment, they may also be affected *by* the water environment; therefore, a route-wide Strategic Flood Risk Assessment (SFRA) is proposed to be carried out in parallel with SEA Tier 2, to advise the assessment of alternative options, to avoid flood risk areas as far as possible.

The Scottish Soil Framework and Land Use Strategy advocate the principles of sustainable soil management in order to protect soil quality, biodiversity, carbon stores and sensitive habitats. Tier 1 SEA has included GIS mapping of productive agricultural land and peat soils within the environmental constraints baseline.

Appendix B provides evidence of the full PPS review undertaken for this Tier 1 SEA and, following the consideration of key themes from the PPS review, Table 3-1 provides a summary of key constraints for consideration through the Tier 1 SEA process.

**Table 3-1 PPS Review – Summary of Key Constraints for Tier 1 SEA Consideration**

SEA Topic	Key Aspects for Tier 1 SEA consideration
<b>Biodiversity, Flora &amp; Fauna</b>	<ul style="list-style-type: none"> <li>– Identify and map Natura sites, Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR) and Ancient Woodland Inventory sites as key constraints</li> <li>– Native Woodland Survey of Scotland (NWSS) data also added since Scoping</li> </ul>
<b>Water</b>	<ul style="list-style-type: none"> <li>– Identify and map fluvial and coastal flood risk areas (1:200 year return period)</li> <li>– Identify and map surface watercourses and waterbodies</li> <li>– Updated SEPA flood risk maps, including surface water flooding also added since Scoping</li> </ul>
<b>Soil</b>	<ul style="list-style-type: none"> <li>– Identify and map designated geological/ geodiversity sites, including SSSI and Geological Conservation Review (GCR) sites</li> <li>– Identify and map productive agricultural land and peat soils</li> </ul>
<b>Population and Human Health</b>	<ul style="list-style-type: none"> <li>– Identify and map the communities within the corridor baseline study area, including OS 'Communities' dataset</li> <li>– Identify and map non-motorised user routes, including Core Paths and National Cycle Network routes</li> </ul>
<b>Landscape</b>	<ul style="list-style-type: none"> <li>– Identify and map nationally designated landscape areas, including National Parks and National Scenic Areas</li> <li>– SNH Broad Landscape Character Area (LCA) types also added since Scoping</li> </ul>
<b>Historic Environment</b>	<ul style="list-style-type: none"> <li>– Identify and map historic environment constraint features, including: Scheduled Monuments, Battlefields, Listed Buildings, Conservation Areas, Gardens and Designed Landscapes</li> </ul>
<b>Material Assets</b>	<ul style="list-style-type: none"> <li>– This topic has been 'scoped out' from the assessment for Tier 1 SEA; however, GIS includes OS base mapping tiles at a range of resolutions including the current A96 route, the surrounding road network and the Aberdeen to Inverness rail line</li> </ul>
<b>Air/ Climate</b>	<ul style="list-style-type: none"> <li>– These topics have been 'scoped out' from the assessment for Tier 1 SEA; related key constraint aspects are noted under 'Population and Human Health' and 'Water'</li> </ul>

## 4 Environmental Constraints Baseline

This section describes the SEA baseline study area, presenting information on the constraints-led approach adopted for the Tier 1 SEA.

Section 4.1 details the data sources used to inform the SEA constraints baseline.

Section 4.2 provides a high level summary of key constraints within 15-km wide baseline study area along the Inverness to Aberdeen corridor.

Section 4.3 provides an overview of the transport related conditions and issues along the corridor.

Section 4.4 outlines how the 15km-wide baseline study area was divided into 10 study sections for constraints mapping and presentation.

Section 4.5 highlights key issues within the study area for each 'scoped in' SEA topic.

### 4.1 Tier 1 SEA GIS and Baseline Data Sources

The A96 trunk road and the Inverness to Aberdeen rail line provide strategic transport links between the cities of Inverness and Aberdeen, as well as connecting the towns and communities between. The trunk road route is approximately 160km long from the Raigmore Interchange at Inverness to Haudagain Roundabout at Aberdeen, passing through the local authority areas of Highland, Moray, Aberdeenshire and Aberdeen City. The railway is approximately 175km long.

Approximately 21km of the A96 trunk road is dual carriageway (approx. 1km at Inverness and approx. 20km between Inverurie and Aberdeen), and there are a number of overtaking/ climbing lanes in other areas. The Inverness to Aberdeen railway is predominantly single track with some passing loops.

The assessment of alternative strategic intervention options (STAG options) for the Inverness to Aberdeen corridor is underpinned by a clear baseline of environmental designations and constraints, which have been managed via GIS (Geographic Information System).

Baseline constraints data have been collated and overlaid via the GIS to inform the environmental assessment of the alternative intervention options being considered.

Data have been gathered from previous relevant studies, including the STPR SEA, from work being undertaken as part of the STAG assessment, and new/ refreshed data have been obtained from the Consultation Authorities and other environmental stakeholders in light of Consultation Authority comments on the Tier 1 Scoping Report.

The GIS approach allowed the assessment to consider alternative strategic intervention (STAG) options in relation to individual constraint types, or in relation to spatial clusters of constraints. Indicative GIS constraints maps, used to support the SEA, are presented in Appendix C.

For Tier 1 SEA, a 15km-wide baseline study area has been adopted, i.e. 7.5km either side of the existing A96 route; this area also encompasses the Inverness to Aberdeen rail line. Table 4-1 lists the data sources used to define the constraints baseline.

**Table 4-1 Tier 1 SEA Baseline Corridor GIS Mapping – Data Sources**

<b>Data Type</b>	<b>Source</b>
<b>Base Mapping</b>	
1:250,000 OS Maps	Ordnance Survey via Transport Scotland
1:50,000 OS Maps	Ordnance Survey via Transport Scotland
1:25,000 OS Maps	Ordnance Survey via Transport Scotland
<b>A96 Route Data</b>	
A96 Sections	Transport Scotland
Accident Data	Transport Scotland
<b>Biodiversity Data</b>	
Ramsar Sites	Scottish Natural Heritage
Special Protection Area Sites	Scottish Natural Heritage
Special Areas of Conservation Sites	Scottish Natural Heritage
Sites of Special Scientific Interest	Scottish Natural Heritage
National Nature Reserves	Scottish Natural Heritage
Scottish Ancient Woodland Inventory	Scottish Natural Heritage
Native Woodland Survey of Scotland	Forestry Commission Scotland
<b>Landscape Data</b>	
National Scenic Areas	Scottish Natural Heritage
Landscape Character Areas	Scottish Natural Heritage
National Parks	Scottish Natural Heritage
<b>Historic Environment Data</b>	
Listed Buildings	Historic Scotland
Battlefield Sites	Historic Scotland
Scheduled Monuments	Historic Scotland
Conservation Areas	Historic Scotland
Gardens & Designed Landscapes	Historic Scotland
<b>Soils/ Geodiversity Data</b>	
Geological Conservation Review Sites	Scottish Natural Heritage
Sites of Special Scientific Interest	Scottish Natural Heritage
Land Capability for Agriculture	James Hutton Institute
Peat and Peaty Soils	James Hutton Institute
<b>Water Environment Data</b>	
Surface Water Courses	SEPA
1:200 year fluvial, surface water and coastal flood risk extents	SEPA
<b>Human Environment</b>	
National Cycle Network Routes	Sustrans via Transport Scotland
Highland Council – Core Paths	Highland Council via Transport Scotland
Moray Council – Core Paths	Moray Council via Transport
Aberdeenshire Council – Core Paths	Aberdeenshire Council via Transport Scotland

Note: due to new datasets being made available (e.g. SEPA flood mapping and Native Woodland Survey data), a review of publicly available datasets was undertaken through March and April 2014. The table above includes relevant data updates for Tier 1 SEA.

## 4.2 15km-wide Baseline Study Area Summary

Table 4-2 presents a high-level summary of the baseline constraints and conditions within the 15km-wide SEA baseline study area.

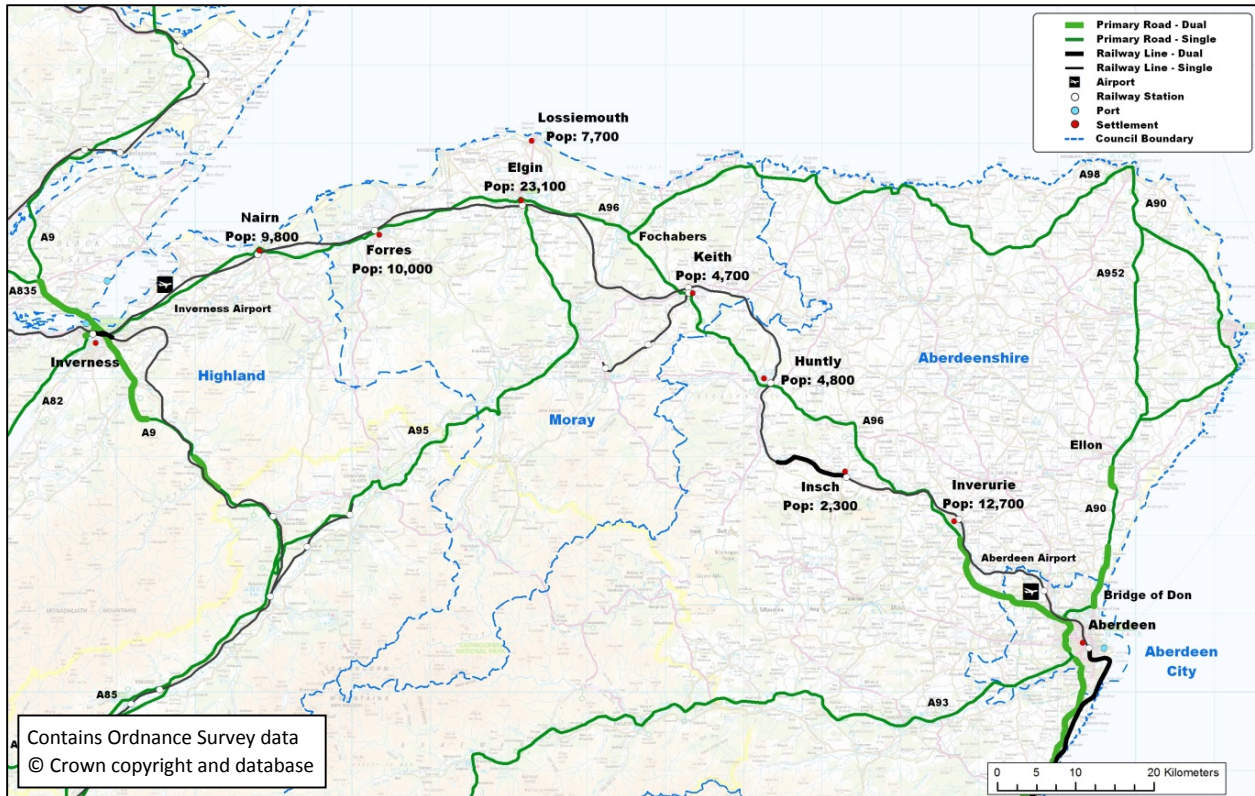
**Table 4-2 15km-wide Tier 1 SEA Baseline Study Area Summary**

<p><b>Population</b></p> <p>Main population centres at Aberdeen and Inverness, with smaller population centres at various points along the route including Nairn, Forres, Elgin, Keith, Huntly and Inverurie.</p> <p>2011 Census (<a href="http://www.scotlandscensus.gov.uk/en/">http://www.scotlandscensus.gov.uk/en/</a> accessed 26/11/13) indicates corridor populations larger than 5000 as:</p> <table> <tr> <td>Aberdeen: 195,021</td> <td>Forres: 9,951</td> </tr> <tr> <td>Inverness: 48,201</td> <td>Nairn: 9,773</td> </tr> <tr> <td>Elgin: 23,128</td> <td>Lossiemouth: 7,705</td> </tr> <tr> <td>Inverurie: 12,654</td> <td>Dyce: 5,712</td> </tr> <tr> <td>Westhill (Aberdeenshire): 10,984</td> <td>Westhill (Highland): 5,265</td> </tr> </table>		Aberdeen: 195,021	Forres: 9,951	Inverness: 48,201	Nairn: 9,773	Elgin: 23,128	Lossiemouth: 7,705	Inverurie: 12,654	Dyce: 5,712	Westhill (Aberdeenshire): 10,984	Westhill (Highland): 5,265	<p><b>Noise</b></p> <p>Traffic using the A96 is one of the main contributors to noise pollution within the study area.</p> <p>The 2008 STPR noted that maximum noise levels emitted from traffic on roads within the corridor are between 70 and 80 dB(A) at source. These are not anticipated to have changed significantly since this time.</p> <p>STPR estimated 28,400 properties as 'noise sensitive receptors' within the study area.</p>
Aberdeen: 195,021	Forres: 9,951											
Inverness: 48,201	Nairn: 9,773											
Elgin: 23,128	Lossiemouth: 7,705											
Inverurie: 12,654	Dyce: 5,712											
Westhill (Aberdeenshire): 10,984	Westhill (Highland): 5,265											
<p><b>Material Assets</b></p> <p>This topic has been 'scoped out' from Tier 1 SEA assessment; however, the main transport infrastructure within the study area includes:</p> <ul style="list-style-type: none"> <li>the A96 Trunk Road (between Aberdeen and Inverness),</li> <li>other A-class roads;</li> <li>the rail network between Inverness and Aberdeen,</li> <li>Inverness Airport and Aberdeen Airport.</li> </ul>	<p><b>Biodiversity</b></p> <p>International designations include:</p> <ul style="list-style-type: none"> <li>4 Ramsar sites, 6 SPAs and 7 SACs</li> </ul> <p>National designations include:</p> <ul style="list-style-type: none"> <li>32 biological SSSIs</li> </ul> <p>Scottish Ancient Woodland Inventory and Native Woodland Survey of Scotland sites are found throughout the study area, with significant concentrations (primarily of plantation woodland) around Forres and the River Spey.</p>	<p><b>Soils and Geodiversity</b></p> <p>There are 62 geological and 14 mixed (i.e. biological and geological) SSSIs scattered throughout the area.</p> <p>A wide range of soils, from Class 2 and 3 lands capable of producing a wide or moderate range of crops, to poorer quality Class 6 and 7 land of little use for cultivation.</p> <p>Some peat deposits are found within the study area, with concentrations around Keith and the River Spey.</p>										
<p><b>Landscape</b></p> <p>There are no National Parks and no National Scenic Areas within the study area.</p> <p>There are twelve distinct SNH Landscape Character Types (Landscape Character Assessment Level 3) within the SEA study area.</p> <p><b>Cultural Heritage/ Historic Environment</b></p> <p>Numerous cultural heritage designated sites, including:</p> <ul style="list-style-type: none"> <li>288 Scheduled Monuments</li> <li>3096 listed buildings</li> <li>22 Historic Gardens and Designed Landscapes</li> <li>27 Conservation Areas</li> </ul>	<p><b>Water</b></p> <p>Main rivers include the Nairn, Spey, Findhorn, Lossie, and the Don, which cross the corridor at various sections.</p> <p>The Moray Firth estuary is located to the far west of the study area.</p> <p>SEPA information (<a href="http://gis.sepa.org.uk/rbmp/">http://gis.sepa.org.uk/rbmp/</a> accessed 27/11/13) notes that:</p> <p>Moray Firth water quality is classified as "High";</p> <p>River Nairn within the corridor is classified as "Good";</p> <p>River Spey "Moderate";</p> <p>Findhorn "Moderate";</p> <p>Lossie "Bad/Poor";</p> <p>Don "Good/Moderate".</p> <p>There are numerous areas identified as prone to flooding on SEPA's 200 year coastal, surface water, and fluvial flood extent maps, particularly around areas such as Forres and Elgin.</p>											
<p><b>Air</b></p> <p>This topic has been 'scoped out' from Tier 1 SEA assessment; however, information from Scottish Air Quality (<a href="http://www.scottishairquality.co.uk/laqm.php">http://www.scottishairquality.co.uk/laqm.php</a> accessed 26/11/13) indicates one Air Quality Management Area (AQMA) located along Anderson Drive in Aberdeen which has been declared for Nitrogen Dioxide (NO<sub>2</sub>) and particulate matter &lt;10µm (PM<sub>10</sub>)</p> <p>No AQMAs have been declared in Aberdeenshire, Moray or Highland Council regions; however, the Aberdeenshire Council Air Quality Progress Report 2013 (<a href="http://www.aberdeenshire.gov.uk/environmental/AirQualityProgressReport2013Final.pdf">http://www.aberdeenshire.gov.uk/environmental/AirQualityProgressReport2013Final.pdf</a> accessed 26/11/13) notes NO<sub>2</sub> levels of 34.9µg/m<sup>3</sup> at one monitoring point in Inverurie.</p> <p>Should this value increase to 40µg/m<sup>3</sup>, an AQMA would be declared.</p>	<p><b>Climatic Factors</b></p> <p>This topic has been 'scoped out' from Tier 1 SEA assessment; however, local flood events and flood history will be investigated further at Tier 2 SEA via a Strategic Flood Risk Assessment (SFRA).</p> <p>Flood risk has been addressed in Tier 1 under the 'Water' topic.</p> <p>Carbon dioxide emissions are scoped out of the SEA but are considered via STAG and traffic modelling.</p>											

### 4.3 Inverness to Aberdeen Corridor Overview

#### Population and Development

The Inverness to Aberdeen strategic transport corridor passes through the local authority areas of Highland, Moray, Aberdeenshire and Aberdeen City (see Figure 4-1). As well as the two cities at each extent, the corridor includes a number of other settlements including Nairn, Forres, Elgin, Fochabers, Keith, Huntly and Inverurie. These population centres are linked by road and rail, with the A96 trunk road providing a key strategic connection between urban and more rural areas.



**Figure 4-1 Inverness to Aberdeen Corridor Context**  
(Source: Inverness to Aberdeen Corridor Appraisal Report, 2014)

Between 2008 and 2011, the majority of areas within the Inverness to Aberdeen corridor experienced a growth in population which was greater than the national average. As shown in Table 4-3 this trend is expected to continue, and populations within the corridor predicted to grow strongly in the next 20 years.

The increase in population within the corridor is mirrored by relatively high levels of new build housing in recent years, with key development areas in the vicinity of Aberdeen and Inverness Airports and also at Inverurie, Nairn and Elgin. The combined contribution to housing development in Scotland of between 20-24 per cent annually, over the 2010-2012 period, highlights the importance of this area to Scotland’s economic growth.



**Table 4-3 Summary Population Statistics and Forecasts 2010 and 2035**  
(Source: Inverness to Aberdeen Corridor Appraisal Report, 2014)

Area Description	Population Statistics/ Forecasts			
	2010 (000s)	2035 (000s)	% Change (2010 –2035)	% Change per Annum (2010 –2035)
Highland	221.6	255.3	15.2	0.6
Moray	87.7	96.4	9.9	0.4
Aberdeenshire	245.8	299.4	21.8	0.8
Aberdeen	217.1	271.7	25.1	0.9
<b>Scotland</b>	<b>5,222.1</b>	<b>5,755.5</b>	<b>10.2</b>	<b>0.4</b>
Source: Scottish Neighbourhood Statistics, Mid-year Estimates, Scottish Government.				

### Road and Rail Traffic and Travel Patterns

The A96 trunk road is an important strategic route in northern Scotland; however, it is also a key route for local trips between settlements. The western and eastern extents of the trunk road have previously been upgraded to dual carriageway standard to improve the efficiency of the trunk road network connections to the cities.

The remainder of the route is mostly rural single carriageway (with urban single carriageway through the settlements), incorporating bypasses and climbing lanes at a few selected locations. The majority of existing accesses and junctions are at-grade, with the exception of two grade separated junctions at Kintore.

Transport Scotland is currently progressing route option design work of a dual carriageway for the A96 section between east of the A96 roundabout at Inverness Retail and Business Park and Nairn, including a southern bypass of Nairn. This scheme was recommended as a priority intervention for the corridor via the STPR and its SEA in 2008, and there is a Ministerial commitment to announce a preferred route option for the dual carriageway (including Nairn bypass) during 2014.

Transport Scotland's Scottish Road Traffic Database indicated that in 2012, daily traffic levels on the A96 peaked at approximately 33,000 vehicles in the dual carriageway section near Aberdeen, dropping to approximately 6,400 vehicles in the most lightly trafficked single carriageway sections in the vicinity of Keith (see Figure 4-2).

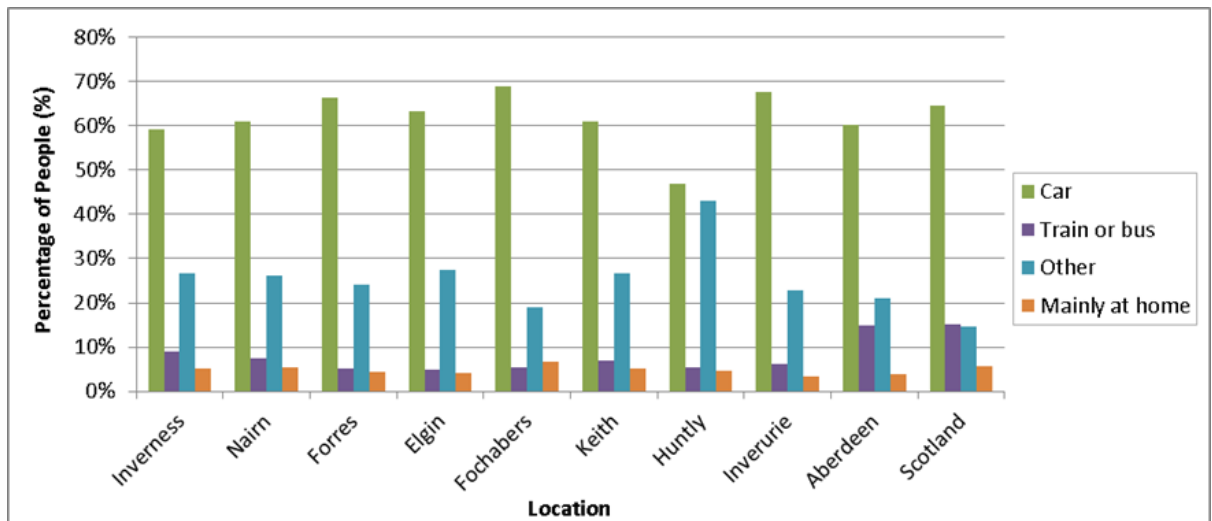
Travel demand on the trunk road is highest on the approaches to the cities at either end of the corridor and on the approaches to Elgin and Inverurie.



**Figure 4-2 Annual Average Daily Traffic by Section in 2012 (\*2011) (\*\*2010) from Scottish Road Traffic Database, Transport Scotland**  
 (Source: Inverness to Aberdeen Corridor Appraisal Report, 2014)

Mode share data show that fewer than ten percent of those in employment along the corridor use public transport to commute to work, with the exception of the Aberdeen area which was found to have a similar proportion of people travelling to work by public transport as the Scottish average.

As Figure 4-3 indicates, there is some variation in mode share between different towns within the corridor, with relatively high levels of journeys to work being made by foot, cycle and motorcycle (the ‘Other’ category in the graph) around Huntly.

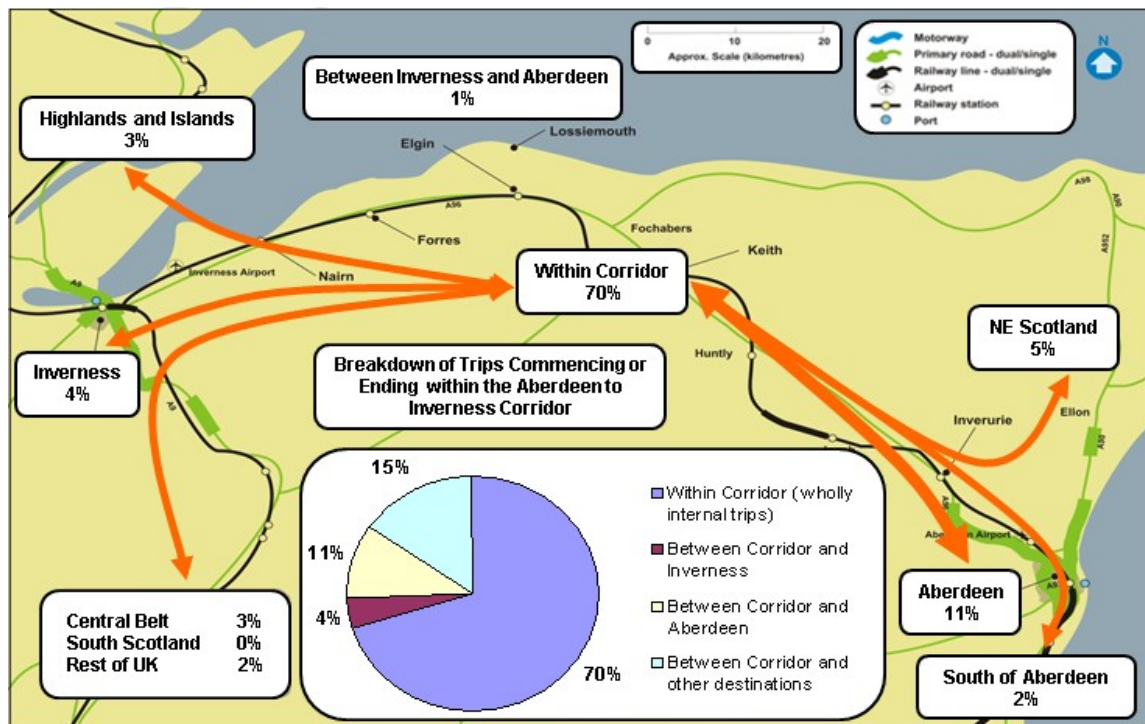


**Figure 4-3 Percentage of People Travelling to Work by Mode in Towns along the A96**  
 (Source: Inverness to Aberdeen Corridor Appraisal Report, 2014)

Levels of car ownership are generally higher in the towns along the corridor than for Scotland as a whole, reflecting the importance of car usage across the more rural areas. Within Aberdeenshire and Moray a significantly higher percentage of households than the Scottish average travel 40km or more to work, indicating that the need to travel a relatively long distance to work in the corridor is common.

Information on traffic composition using the A96 trunk road from Roadside Interview (RSI) data from 2013 identified that between approximately 6% and 12% of A96 traffic is heavy goods vehicles (HGVs). Agriculture, timber and whisky are key industries in the Inverness to Aberdeen corridor and are some of the main generators of HGV traffic on the A96.

Analysis of travel patterns using RSI survey information indicates that the majority of road based trips travel between settlements within the corridor with as little as 12% of those surveyed starting or finishing their journeys outwith the corridor. Figure 4-4 shows the distribution of trips of the remaining 88% that have at least an origin or destination in the corridor or the cities at either end.



**Figure 4-4** Origins and Destinations of Trips on the A96 (RSIs, 2013)  
 (Source: Inverness to Aberdeen Corridor Appraisal Report, 2014)

Analysis of the data also shows that a high proportion of all trips in the RSI survey were travelling a distance of less than 25 miles, which highlights the importance of the A96 in providing connections between the towns as well as the cities at each end of the corridor.

Table 4-4 summarises the anticipated change in traffic flows on the A96. Growth in A96 traffic demand is particularly associated with forecast growth in population and employment on the approaches to Inverness and Aberdeen, including expected developments close to Aberdeen and Inverness Airports.

**Table 4-4** *Modelled Traffic Growth at Base Year 2012 and Forecast Percentage Change*  
(Source: Inverness to Aberdeen Corridor Appraisal Report, 2014)

Location	Modelled Flows at Base Year	Modelled Flows at Future Year	Forecast % Change (Base-2032)	Source
East of Inverness	23,800	35,100	47%	Transport Model for Scotland:2012 (Base Year 2012 and Future Year 2032)
East of Nairn	9,700	15,000	55%	
East of Elgin	17,200	20,300	18%	
North of Huntly	7,400	9,300	26%	
North of Inverurie	9,600	10,700	11%	
South of Inverurie	30,200	38,100	25%	Aberdeen Sub-Area Model (Base Year 2010 and Future Year 2033)

Rail use travel patterns are broadly similar to the road based demand, with the stations nearest Inverness and Aberdeen having the highest volumes of passengers boarding and alighting within the corridor. Outwith these stations Elgin has the highest usage of all towns along the corridor. Train services are irregular, taking approximately two hours and 15 minutes to travel the full length of the corridor. There are more frequent commuter services during the peak periods. Outwith peak periods, services are less frequent and at irregular times.

Analysis of rail seating capacity levels indicated that a number of services during peak periods, between Huntly and Aberdeen, are either at, or approaching the available seating capacity. This suggests that the network would benefit from an increase in the number of rail services or additional seating capacity on existing services, particularly during peak periods.

The Scottish Government is currently taking forward the Aberdeen to Inverness Rail Improvements project which will deliver journey time improvements and greater connectivity for both passenger and freight services operating on the Aberdeen to Inverness rail corridor.

The project will be delivered in phases and aims to provide incremental benefits throughout the life of the scheme, with the whole project being delivered by 2030. The aspirations of the project propose to deliver two hour journey time and an hourly service between Aberdeen and Inverness; enhanced commuter services into each city; and new stations at Kintore in Aberdeenshire and Dalcross, near Inverness airport.

### **Journey Times, Reliability and Safety**

Information on travel demand collated to inform the STAG appraisal indicates relatively low levels of city centre to city centre trips on the A96 trunk road, however, almost 15% of rail passenger trips in the corridor were between Inverness and Aberdeen. Improved transport provision within the corridor should provide more opportunities to link the two cities.

Travel times along the corridor vary considerably depending on the mode of travel. The shortest journey time between the cities is by rail at around two hours and 15 minutes. This compares with

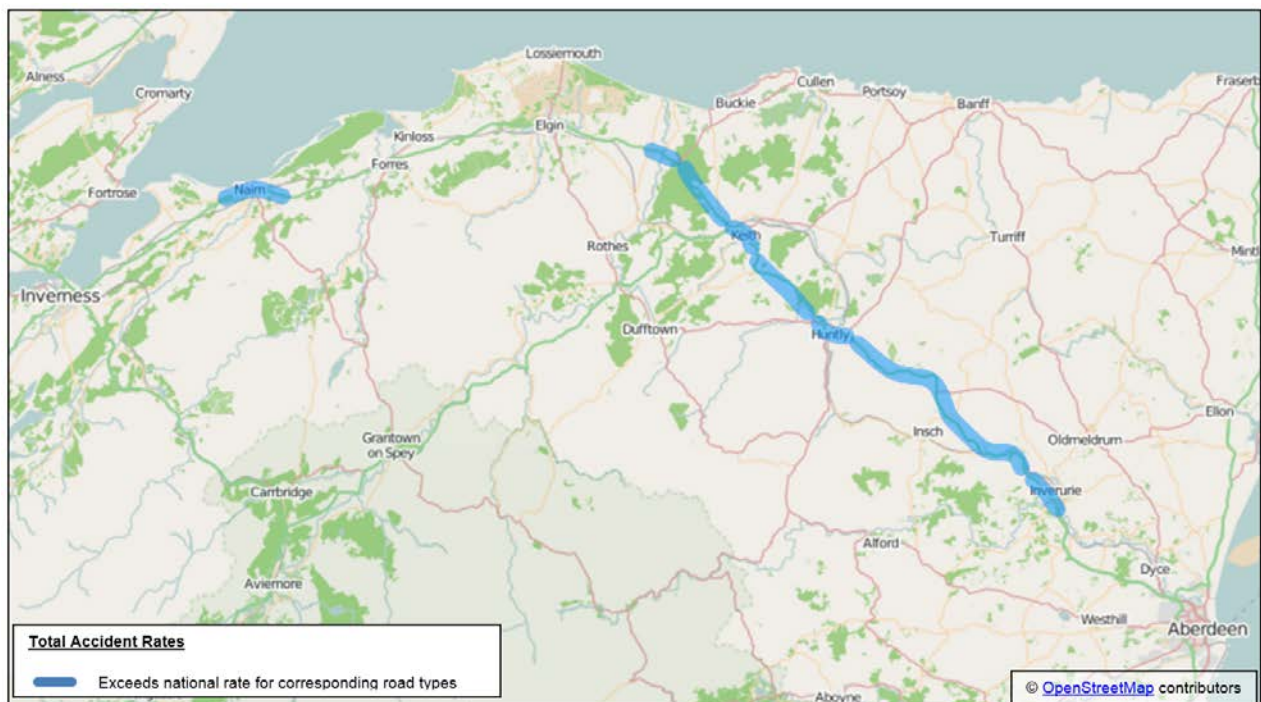
typical journey times by car of around two hours 40 minutes and by bus of three hours and 50 minutes. Road based travel does not currently provide a competitive alternative to rail travel for trips between Inverness and Aberdeen.

Delays to bus and car journeys on the trunk road are generally attributed to a combination of cumulative junction delays through the towns, the impact of slower moving vehicles and any constraints caused by the road alignment (e.g. design standards). Analysis indicates that trips through Elgin and Nairn in particular are most likely to experience delays.

Analysis of accident data shows that although the number of accidents on the A96 has reduced in recent years; accident rates and fatal accident rates are above the corresponding national rates for the road types at several sections.

For the period 2008 to 2012, the sections through Nairn, Keith and Huntly all had accident rates higher than the corresponding rate for built-up trunk A-class roads in Scotland. The rural single carriageway sections of the A96 between Fochabers Bypass and Keith, Keith and Huntly and Huntly and Inverurie also had accident rates higher than the corresponding national rate (see Figure 4-5).

A number of sections along the A96 experience accident severity rates higher than corresponding national rates. For their road type, the sections between Nairn and Forres, Keith and Huntly and between Huntly and Inverurie have fatal accident rates higher than the national average. A number of sections also have serious accident rates higher than the corresponding rate for their road type. These include the towns of Nairn, Forres, Keith and Huntly and sections of the road between Fochabers and Keith, Keith and Huntly, Huntly and Kintore and between Bucksburn and Aberdeen.



**Figure 4-5** Sections of A96 where Total Accident Rates exceed the National Average for the Road Type  
(Source: Inverness to Aberdeen Corridor Appraisal Report, 2014)

The A96 has a high number of junctions along its length (in excess of 600) and approximately half of all personal injury accidents between 2008 and 2012 occurred at or near a junction. Of the 51 accidents involving pedestrians in this period, 76% occurred within urban areas.

#### 4.4 SEA Study Areas Summary

As outlined earlier, the Tier 1 SEA has considered the environmental implications of a range of strategic intervention options, to inform the wider STAG appraisal. In order to support presentation of the location of relevant baseline constraints, the 15km-wide baseline study area was divided into ten sections, as listed in Table 4-5 and outlined in Figure 4-6. Settlements or place names along the existing A96 have been used to qualitatively describe the route sections, and the respective length of the A96 is included to provide a quantitative comparison of section sizes.

**Table 4-5 Overview of the ten SEA Baseline Study Sections**

Section Number	From	To	Length of Existing A96 within Section (km)	Total 15km study section area (Ha)	% of Total Baseline Study Area
1	Inverness	Gollanfield	14.9	31,044.9	12.9%
2	Gollanfield	Hardmuir	15.8	23,297.5	9.7%
3	Hardmuir	Alves Wood	17.1	25,478.0	10.6%
4	Alves Wood	Threapland	19.3	28,231.7	11.7%
5	Threapland	Bogbain	14.4	21,308.7	8.8%
6	Bogbain	The Bin	15.4	20,832.9	8.7%
7	The Bin	West Adamston	10.7	15,801.4	6.6%
8	West Adamston	Pitmachie	15.8	22,156.6	9.2%
9	Pitmachie	Boghead	22.6	31,975.6	13.3%
10	Boghead	Aberdeen	7.9	20,541.3	8.5%

Each of the 10 study sections and key constraints are presented in more detail in the individual baseline summary tables in Appendix D. These tables should be read in conjunction with the GIS constraint maps provided as Appendix C.

Sections 1-5, at the western end of the study area, contain Ramsar sites, Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) (European designated sites), the majority of which are clustered around the Moray Firth. SSSI designations are found in each study area section. There are large areas of peat and peaty soils in Sections 5 and 6, while Ancient Woodlands are concentrated particularly in Sections 3 and 5. Arable agricultural land is most prevalent in Sections 4 and 9, while mixed agricultural land is primarily concentrated in Sections 6-8. Scheduled Monuments and Listed Buildings are spread throughout the study area.

The study area crosses twelve distinct SNH landscape character types (Landscape Character Assessment Level 3)<sup>3</sup>. For example, large expanses of sections 8-10 are classed as *Agricultural Lowlands of the North East*, while sections 2-4 are predominantly classed as *Lowland Coastal Landscapes of the North East*. Sections 5-7 contain *Highland Straths* and *High, Massive, Rolling, Rounded Mountains and Moorland Transitional Landscapes of the Highlands and Islands*.

While there is potential to improve long term road surface discharge water quality via improved drainage systems, fluvial flooding is likely to be a major constraint in some areas, and some areas of Sections 1, 3 and 4 are noted as being at risk of coastal flooding.

A key issue for improvement proposals will be the provision of environmental relief for communities; for example, by bypassing a number of settlements along the A96 route, there is the potential to reduce congestion and emissions through population centres, leading to improvements in air quality, road safety and a reduction in traffic noise.

<sup>3</sup> The SNH Landscape Character Assessment defines different areas according to the landforms, land cover and any settlements present. SNH, Landscape Character Assessment (LCA) - How it's done. [Online]. Available at: <http://www.snh.gov.uk/protecting-scotlands-nature/looking-after-landscapes/lca/lca-how-done/> (Accessed 17/04/14).

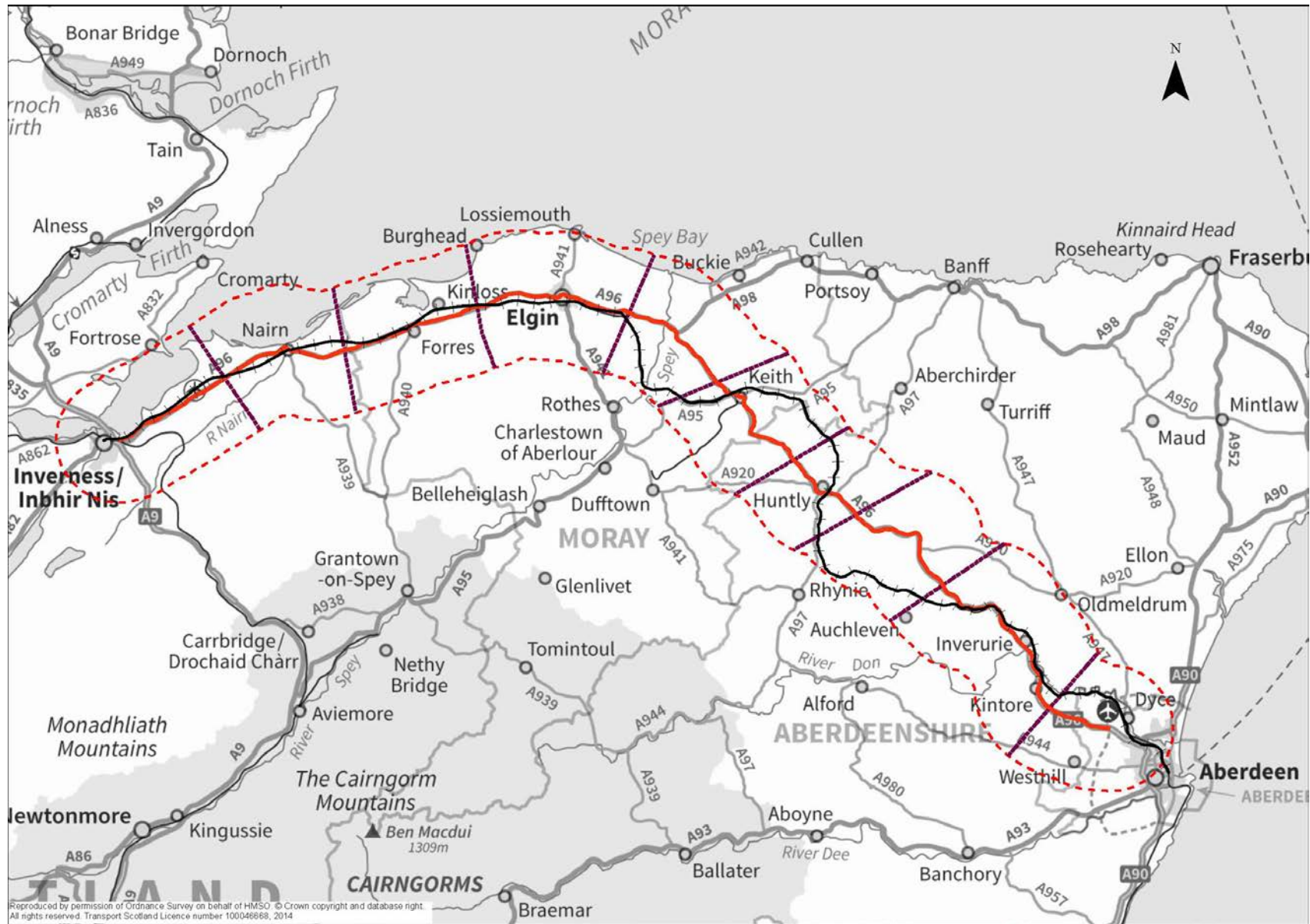


Figure 4-6 SEA Baseline Study Area – Sections 1 to 10

## 4.5 Key Issues within the SEA Baseline Study Area

The following SEA topics have been ‘scoped in’ to the Tier 1 SEA (see Section 2.2.1):

- Population and Human Health
- Biodiversity, Flora and Fauna
- Water
- Soils and Geodiversity
- Historic Environment
- Landscape

Current baseline issues, and the approach to the assessment of STAG options against each SEA topic are summarised in Sections 4.5.1 to 4.5.6 below. Numbered references noted in the following sub-sections can be found in Appendix G.

### 4.5.1 Population and Human Health

The detailed corridor overview in Section 4.3 provided many points relating to ‘Population and Human Health’ and contributed to the following summary of current issues within the SEA baseline study area:

- Population is forecast to increase along the corridor as well as in the cities of Inverness and Aberdeen at either end. The overall corridor growth will consequently result in an increased demand for travel. (11)
- Very few road trips are made from city to city and rail travel presents the fastest means of making journeys between Inverness and Aberdeen. (11)
- A96 road traffic is a key contributor to noise within the study area. The Inverness to Aberdeen rail route and the two city airports contribute to noise in some locations. (9)
- One AQMA in Aberdeen (Anderson Drive) is designated for NO<sub>2</sub> and PM<sub>10</sub> lies at the southern end of the study area. (9)  
*(SEA comment – this AQMA is not expected to be significantly affected by corridor interventions)*
- A high proportion of all journeys cover a distance of less than 25 miles, indicating the importance of the A96 as a connector between towns and cities throughout the corridor. (11)
- Journey times for longer trips on the A96 including those between the cities are delayed by a combination of factors including junctions through towns and the impact of slower moving (HGV) vehicles.(11) & (27)
- Several sections of the A96 trunk road have accident rates higher than the national average for their road type. Between 2008 and 2012, approximately half of all personal injury accidents on the A96 occurred at or near junctions. (11)

#### **SEA Approach to ‘Population and Human Health’ for STAG Options Assessment**

A prediction of the ‘Future Baseline’ has been developed by combining a reflection of current trends with an assessment of the impacts of a number of “Do Minimum” schemes (transport interventions which are currently proposed for the study area – see Section 5.2.1).

Each Strategic Intervention Option (STAG Option) has been assessed against the Future Baseline to assess the potential effects related to Population and Human Health, for example, the potential effects associated with increasing modal shift from road to rail.



#### 4.5.2 Biodiversity, Flora and Fauna

Current issues related to ‘Biodiversity, Flora and Fauna’ within the SEA baseline study area include:

- There are numerous nationally and internationally designated sites (including Ramsar, SAC, SPA and SSSI) within the study area. The designated Natura and Ramsar biodiversity conservation sites within the baseline study area are listed below in Table 4-6. The current condition of qualifying features within designated Natura sites varies from ‘unfavourable declining’ to ‘favourable maintained’. (13)  
However, no pressures related to A96 or rail traffic have been identified in the Site Condition Monitoring reports reviewed for relevant Natura sites.
- Areas identified as native and ancient woodland are scattered throughout the study area, with large expanses in some areas, for example around Forres and Fochabers.
- Existing A96 trunk road, and Inverness to Aberdeen rail line, are likely to present barriers to movement for some species (particularly where A96 dualled sections and/or the railway crosses important territories). Likely pressures on species within the study area include habitat loss/ fragmentation related to land use change, and mortality through collisions.
- Individuals within local species populations are anticipated to be habituated to railway and A96 trunk road traffic related noise/ lighting/ vibration, etc.
- Roadside vegetation (verges, trees, etc.) likely to be impacted to varying degrees by traffic emissions/ salt spray/ maintenance regime, depending on species’ sensitivity.
- Surface watercourse quality within the study area is generally good to excellent, and there are a number of designated salmonid rivers. Some watercourses are within Nitrate Vulnerable Zones (NVZ); principally related to nutrient enrichment via agricultural runoff.
- Road surface runoff and existing drainage provisions are assumed to present localised impacts on water quality around outfall locations, with potential for secondary effects on local freshwater biodiversity.

In addition to Natura (SAC and SPA) and Ramsar sites, SSSIs, National Nature Reserves, Scottish Ancient Woodland Inventory sites and Native Woodland Survey of Scotland sites are all considered as key constraints in SEA GIS mapping. A full list of these constraints, subdivided by SEA study area section, can be found in Appendix D.

#### **SEA Approach to ‘Biodiversity, Flora and Fauna’ for STAG Options Assessment**

A prediction of the ‘Future Baseline’ has been developed by combining a reflection of current trends with an assessment of the impacts of a number of “Do Minimum” schemes (transport interventions which are currently proposed for the study area – see Section 5.2.1).

Each Strategic Intervention Option (STAG option) has been assessed against the Future Baseline to identify the potential for impacts on designated biodiversity sites and other features and constraints.

The Tier 1 SEA Scoping Report noted that the Environmental Report would identify the Natura sites within the 15km-wide study area and list each of the qualifying interest features. Table 4-6 fulfils that commitment. The Scoping Report also noted that this information would be used to inform discussions with SNH on the approach to Habitats Regulations Appraisal (HRA) Screening, to be incorporated with Tier 2 SEA.

**Table 4-6 Natura Sites and Qualifying Features within the 15km wide Study Area**

Site	Qualifying Feature*	Condition Status*	Study Area Section(s)
Loch Flemington SPA	Slavonian grebe ( <i>Podiceps auritus</i> ), breeding	Unfavourable No change	1
Cawdor Wood SAC	Western acidic oak woodland	Unfavourable No change	1, 2
Inner Moray Firth SPA	Osprey ( <i>Pandion haliaetus</i> ), breeding	Favourable Maintained	1, 2
	Teal ( <i>Anas crecca</i> ), non-breeding	Favourable Maintained	
	Oystercatcher ( <i>Haematopus ostralegus</i> ), non-breeding	Favourable Maintained	
	Wigeon ( <i>Anas penelope</i> ), non-breeding	Favourable Maintained	
	Curlew ( <i>Numenius arquata</i> ), non-breeding	Favourable Maintained	
	Bar-tailed godwit ( <i>Limosa lapponica</i> ), non-breeding	Favourable Maintained	
	Red-breasted merganser ( <i>Mergus serrator</i> ), non-breeding	Unfavourable No change	
	Redshank ( <i>Tringa totanus</i> ), non-breeding	Favourable Maintained	
	Cormorant ( <i>Phalacrocorax carbo</i> ), non-breeding	Unfavourable No change	
	Scaup ( <i>Aythya marila</i> ), non-breeding	Favourable Maintained	
	Goldeneye ( <i>Bucephala clangula</i> ), non-breeding	Favourable Maintained	
	Goosander ( <i>Mergus merganser</i> ), non-breeding	Unfavourable No change	
	Greylag goose ( <i>Anser anser</i> ), non-breeding	Favourable Maintained	
	Waterfowl assemblage, non-breeding	Favourable Maintained	
Common tern ( <i>Sterna hirundo</i> ), breeding	Unfavourable No change		
Inner Moray Firth Ramsar	Saltmarsh	Favourable Maintained	1, 2
	Shingle	Favourable Maintained	
	Intertidal mudflats and sandflats	Favourable Maintained	
	Sand dune	Favourable Maintained	
	Bar-tailed godwit ( <i>Limosa lapponica</i> ), non-breeding	Favourable Maintained	
	Redshank ( <i>Tringa totanus</i> ), non-breeding	Favourable Maintained	
	Red-breasted merganser ( <i>Mergus serrator</i> ), non-breeding	Unfavourable No change	
	Waterfowl assemblage, non-breeding	Favourable Maintained	
	Greylag goose ( <i>Anser anser</i> ), non-breeding	Favourable Maintained	
Moray Firth SAC	Bottlenose dolphin ( <i>Tursiops truncatus</i> )	Favourable Recovered	1, 2, 3, 4
	Subtidal sandbanks	Favourable Maintained	
Culbin Bar SAC	Coastal shingle vegetation outside the reach of waves	Favourable Maintained	2, 3
	Atlantic salt meadows	Unfavourable Declining	
	Shifting dunes	Favourable Maintained	
Moray and Nairn Coast Ramsar	Intertidal mudflats and sandflats	Favourable Maintained	2, 3, 5
	Redshank ( <i>Tringa totanus</i> ), non-breeding	Favourable Recovered	
	Pink-footed goose ( <i>Anser brachyrhynchus</i> ), non-breeding	Favourable Maintained	
	Greylag goose ( <i>Anser anser</i> ), non-breeding	Favourable Maintained	
	Waterfowl assemblage, non-breeding	Favourable Maintained	
	Wet woodland	Favourable Maintained	
	Sand dune	Favourable Maintained	
	Shingle	Favourable Maintained	
Saltmarsh	Unfavourable Declining		

Site	Qualifying Feature*	Condition Status*	Study Area Section(s)
Moray and Nairn Coast SPA	Oystercatcher ( <i>Haematopus ostralegus</i> ), non-breeding	Favourable Maintained	2, 3, 5
	Bar-tailed godwit ( <i>Limosa lapponica</i> ), non-breeding	Favourable Declining	
	Velvet scoter ( <i>Melanitta fusca</i> ), non-breeding	Favourable Maintained	
	Redshank ( <i>Tringa totanus</i> ), non-breeding	Favourable Recovered	
	Long-tailed duck ( <i>Clangula hyemalis</i> ), non-breeding	Favourable Maintained	
	Waterfowl assemblage, non-breeding	Favourable Maintained	
	Red-breasted merganser ( <i>Mergus serrator</i> ), non-breeding	Favourable Maintained	
	Dunlin ( <i>Calidris alpina alpina</i> ), non-breeding	Favourable Maintained	
	Common scoter ( <i>Melanitta nigra</i> ), non-breeding	Favourable Maintained	
	Pink-footed goose ( <i>Anser brachyrhynchus</i> ), non-breeding	Favourable Maintained	
	Greylag goose ( <i>Anser anser</i> ), non-breeding	Favourable Maintained	
	Wigeon ( <i>Anas penelope</i> ), non-breeding	Favourable Maintained	
Osprey ( <i>Pandion haliaetus</i> ), breeding	Favourable Maintained		
Darnaway and Lethen Forest SPA	Capercaillie ( <i>Tetrao urogallus</i> ), breeding	Favourable Maintained	2, 3
Lower Findhorn Woods SAC	Mixed woodland on base-rich soils associated with rocky slopes	Unfavourable Declining	3
Lower River Spey- Spey Bay SAC	Alder woodland on floodplains	Unfavourable Declining	4, 5
	Coastal shingle vegetation outside the reach of waves	Unfavourable No change	
Loch Spynie SPA	Greylag goose ( <i>Anser anser</i> ), non-breeding	Unfavourable Declining	4
Loch Spynie Ramsar	Eutrophic loch	Unfavourable Recovering	4
	Greylag goose ( <i>Anser anser</i> ), non-breeding	Unfavourable Declining	
	Open water transition fen	Favourable Maintained	
River Spey SAC	Otter ( <i>Lutra lutra</i> )	Favourable Maintained	5
	Atlantic salmon ( <i>Salmo salar</i> )	Unfavourable Recovering	
	Sea lamprey ( <i>Petromyzon marinus</i> )	Favourable Maintained	
	Freshwater pearl mussel ( <i>Margaritifera margaritifera</i> )	Unfavourable Recovering	
Mortlach Moss SAC	Base-rich fens	Favourable Maintained	6
Loch of Skene SPA	Greylag goose ( <i>Anser anser</i> ), non-breeding	Unfavourable Declining	10
Loch of Skene Ramsar	Greylag goose ( <i>Anser anser</i> ), non-breeding	Unfavourable Declining	10

\* Information from SNH Sitelink online at: <http://gateway.snh.gov.uk/sitelink/index.jsp>

### 4.5.3 Water

Current issues related to 'Water' within the SEA baseline study area include:

- The main surface watercourses in the area include the Rivers Nairn, Findhorn, Lossie, Spey, Isla, Deveron, Urie and Don, as well as numerous tributaries.
- Water quality of principal watercourses is generally good to excellent (15), and water quality is important for the range of distilleries in the area, as well as sustaining important salmonid fisheries and underpinning several of the nature conservation designations.
- There are a number of coastal, fluvial and wetland Natura and Ramsar sites within the study area, including the Moray and Nairn Coast SPA/Ramsar and the River Spey SAC (qualifying features and condition status noted above).
- Large areas are prone to significant flooding (fluvial, surface water, and coastal). (16)
- There are a number of Local Authority flood prevention schemes under development within the study area.
- Some watercourses are located within Nitrate Vulnerable Zones (NVZ); principally related to nutrient enrichment via agricultural runoff.
- Current corridor road drainage does not include SuDS on older sections. Road surface runoff and existing drainage provisions have potential to present localised impacts on water quality around outfall locations, with potential for secondary effects on local freshwater biodiversity/ sensitive habitats/ coastal areas.

SEPA's areas of 1 in 200 year fluvial, surface water and coastal flood risk, and principal surface watercourses are included as key constraints in SEA GIS mapping. A full list of these constraints, subdivided by SEA study area section, can be found in Appendix D.

#### ***SEA Approach to 'Water' for STAG Options Assessment***

A prediction of the 'Future Baseline' has been developed by combining a reflection of current trends with an assessment of the impacts of a number of "Do Minimum" schemes (transport interventions which are currently proposed for the study area – see Section 5.2.1).

Each Strategic Intervention Option (STAG option) has been assessed against the Future Baseline to assess the potential for impacts on watercourses and areas of flood risk.

#### 4.5.4 Soils and Geodiversity

Current issues related to ‘Soils and Geodiversity’ within the SEA baseline study area include:

- There are a range of geodiversity sites (Geological/ Mixed SSSI and Geological Conservation Review sites) within the 15km wide baseline study area. None of these are currently directly affected by the existing rail line or the A96 trunk road.
- Predominant land uses within the study area, outwith developed areas, include agriculture (soil quality classified up to Grade 3, arable and mixed agriculture) and forestry.
- Soils are generally capable of supporting a range of agriculture and the predominantly arable lowlands at either end of the study area give way to thinner and/ or peatier soils through the higher ground of the central section where rough grazing and forestry land uses predominate.
- While there are no significant Inverness to Aberdeen rail route or A96 trunk road related issues/ trends on soils or geological diversity in the study area, there is the potential for minor adverse effects on trackside and roadside soils/ soil biodiversity associated with surface runoff, vehicle emissions and salt spray.

SEA GIS mapping includes Land Capability for Agriculture, with key constraints noted as Peat and Peaty Soils, Geological and Mixed SSSIs and Geological Conservation Review Sites. A full list of these constraints, subdivided by SEA study area section, can be found in Appendix D.

#### ***SEA Approach to ‘Soils and Geodiversity’ for STAG Options Assessment***

A prediction of the ‘Future Baseline’ has been developed by combining a reflection of current trends with an assessment of the impacts of a number of “Do Minimum” schemes (transport interventions which are currently proposed within the study area – see Section 5.2.1).

Each Strategic Intervention Option (STAG option) has been assessed against the Future Baseline to assess the potential for impacts on designated geological sites or valuable soil/ land types.

#### 4.5.5 Historic Environment

Current issues related to 'Historic Environment' within the SEA baseline study area include:

- A significant diversity of Scheduled Monuments, Battlefields, Listed Buildings, Gardens and Designed Landscapes and Conservation Areas are spread throughout the SEA study area.
- Traffic can present risks to Historic Environment features, principally via vehicle emissions through urban areas and in proximity to features.
- Significant potential for a range of unscheduled archaeology, given the extensive range of scheduled/ listed/ designated features.
- Recent trunk road improvement works on the Fochabers and Mosstodloch bypass had to accommodate sensitive Gardens and Designed Landscape issues.

SEA GIS mapping includes Scheduled Monuments, Listed Buildings, Battlefield Sites, Conservation Areas and Gardens and Designed Landscapes as key constraints. A full list of these constraints, subdivided by SEA study area section, can be found in Appendix D.

#### ***SEA Approach to 'Historic Environment' for STAG Options Assessment***

A prediction of the 'Future Baseline' has been developed by combining a reflection of current trends with an assessment of the impacts of a number of "Do Minimum" schemes (transport interventions which are currently proposed within the study area – see Section 5.2.1).

Each Strategic Intervention Option (STAG option) has been assessed against the Future Baseline to identify any key impacts which might affect designated historic environment sites/ features.

#### 4.5.6 Landscape

There are no National Scenic Areas within or close to the SEA baseline study area. A review of landscape character assessment documents, relevant to the study area, highlights:

- The SNH broad landscape character assessment dataset (26) describes the predominant landscape types within the study area as *Lowland Coastal Landscapes of the North East* to *Agricultural Lowlands of the North East*, with smaller areas of *Highland Strath* and *Rolling Mountains/ Transitional Moorland* in between.
- The Highland Council A96 Corridor Landscape Assessment Report (23) describes the area around the A96 from Inverness to Nairn as a mixture of *Coastal Farmland/ Intensive Farming/ Enclosed Farmed Landscapes* to *Rolling Farmland with Woodland*, with views to *Enclosed and Open Firth* landscapes.
- The Moray and Nairn Landscape Assessment (22) describes the area within the corridor from Nairn to Fochabers as *Coastal Plain/ Coastal Farmland* and from Fochabers to Keith as *Upland/ Upland Farming*.
- The Moray and Nairn Landscape Assessment (22) identifies the area around Strath Spey (south of the A96) as an *Area of Great Landscape Value*, with other areas of landscape value identified around the Inventory Gardens and Designed Landscapes in the region (22).
- The South and Central Aberdeenshire Landscape Character Assessment (24) describes the predominant landscape within the corridor south of Keith, as *Agricultural Heartland/ Northern Rolling Lowlands/ Central Wooded Estates/ Farmed Moorland Edge* with small areas identified as *Deveron and Bogie Strath* and *Grampian Outliers*.

Tier 1 SEA GIS mapping includes the SNH broad Landscape Character Assessment Types (see Figure 4-7) as well as National Scenic Areas and National Parks.

#### **SEA Approach to 'Landscape' for STAG Options Assessment**

A prediction of the 'Future Baseline' has been developed by combining a reflection of current trends with an assessment of the impacts of a number of "Do Minimum" schemes (transport interventions which are currently proposed within the study area – see Section 5.2.1).

Each Strategic Intervention Option (STAG option) has been assessed against the Future Baseline to consider any key impacts which might have an effect on landscape character.

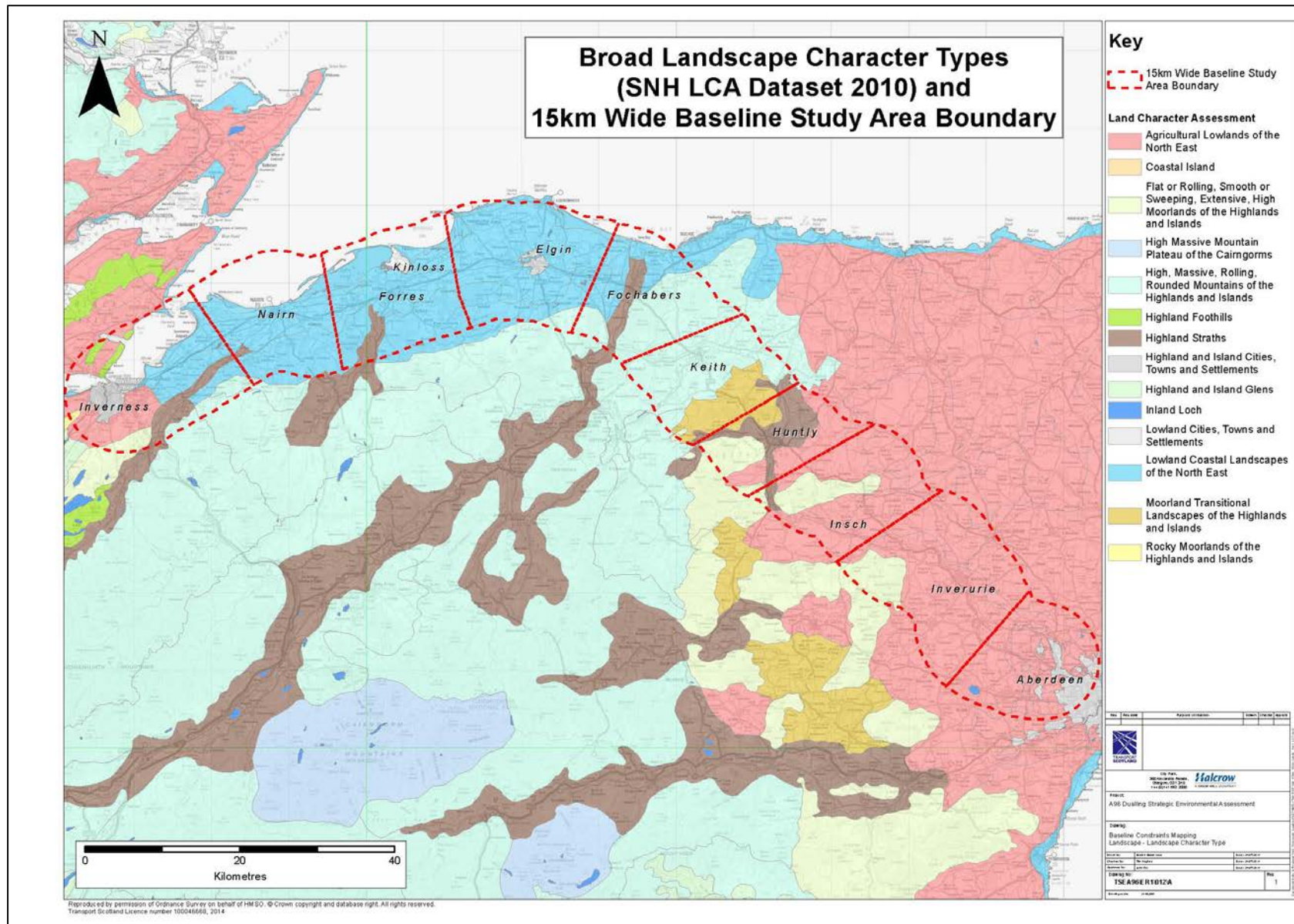


Figure 4-7 SNH Broad Landscape Character Types crossed by the SEA Baseline Study Area



## 5 STAG and Strategic Intervention Option Appraisal

This section provides an overview on the SEA methodology adopted to consider each strategic intervention option, developed via the Scottish Transport Appraisal Guidance (STAG) process, against ‘scoped in’ SEA topics. It also details how SEA outputs provide a robust assessment of the ‘Environment’ criterion required under the STAG process.

Section 5.1 provides a brief introduction to the STAG process and its requirements.

Section 5.2 details the consideration of a ‘Do Minimum’ scenario, listing relevant (already committed) transport schemes in the Inverness to Aberdeen Corridor study area, and outlining the SEA approach to understanding their effect on the future baseline environmental conditions.

Section 5.3 explains the SEA approach to assessment of the six Strategic Intervention Options (STAG options) against the outcomes of the Do Minimum scenario appraisal.

Section 5.4 summarises the findings of the SEA assessment of STAG options.

Section 5.5 explains how the SEA findings will integrate with and inform the STAG appraisal.

Section 5.6 summarises the outcome of the Strategic Business Case, informed by the STAG appraisal.

Appendix E provides short descriptions for each committed transport scheme assumed under the Do Minimum scenario, and details the scenario appraisal against ‘scoped in’ SEA topics.

Appendix F provides graphical representations to aid description of each of the six STAG options, and reports the detailed SEA assessment for each of the six options.

### 5.1 The STAG Process

Scottish Transport Appraisal Guidance (STAG) sets out an objective-led, evidenced based approach for the development and appraisal of alternative transport infrastructure options, consisting of the following steps:

- Analysis of Problems and Opportunities – Identified or perceived problems, or potential opportunities, with the transport system are the essential starting point for a STAG study.
- Objective Setting – Transport Planning Objectives are developed to express the outcomes sought for the transport appraisal exercise under consideration.
- Option Generation, Sifting and Development – The generation of options should be based on the widest possible set of potential options which could alleviate the identified or perceived problems, or address the potential opportunities.
- Appraisal – Appraisal of options against Transport Planning Objectives, STAG Criteria and established policy directives provides a robust evidence base for decision makers. The five STAG Criteria for appraisal are:

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

Options are also appraised against established policy directives:

- Feasibility, Affordability and Public Acceptability (known as Implementability criteria)
- Monitoring and Evaluation – STAG also requires the development of Monitoring and Evaluation Plans for implemented options.

The following sub-sections present the outcomes of the first stages noted above.

### 5.1.1 Analysis of Problems and Opportunities

Table 5-2 below provides a summary of the main issues, problems and opportunities identified within the Inverness to Aberdeen corridor study area.

**Table 5-1 STAG Summary of Main Issues, Problems and Opportunities**

Topic	Summary of Main Issues, Problems and Opportunities
Economy	<ul style="list-style-type: none"> <li>• Opportunities afforded by nationally important initiatives such as the National Renewables Infrastructure Plan, Enterprise Areas and Proposed National Developments on, and adjacent to, the Inverness to Aberdeen Corridor</li> <li>• Challenges regarding the remoteness of regional rural economies potentially constraining economic growth</li> <li>• Business community highlighted problems relating to provision of A96 potentially hindering business travel</li> <li>• Reduction in population in Moray in recent years and further forecast decline</li> <li>• Constraints on transport network, potentially hindering planned developments</li> <li>• National collective importance of rural areas, towns and villages. Inverness and Aberdeen rely on immediate neighbours for access to labour, to house essential related economic activities and industries, and the competitive advantage that comes from cities being located near areas of outstanding natural beauty</li> </ul>
Demand for Travel	<ul style="list-style-type: none"> <li>• High proportions of HGV traffic on particular sections of the route</li> <li>• Number of trips to/ from Elgin are significantly higher than the other towns on the corridor</li> <li>• High levels of car ownership on the corridor</li> <li>• High levels of walking and cycling travel to work mode share within the towns in the corridor</li> <li>• Evidence of overcrowding on peak rail services between Inverurie and Aberdeen</li> <li>• Significant increases in demand to travel forecast for next 20 years</li> </ul>
Connectivity	<ul style="list-style-type: none"> <li>• Problems associated with travel delays through Elgin and Nairn</li> <li>• Inverness to Aberdeen bus journey times (3hrs 50mins) are not competitive with those for the car (2hrs 40mins), however rail journey times (2hrs 20mins) are competitive</li> </ul>
Safety and Security	<ul style="list-style-type: none"> <li>• Higher than national accident rates through towns of Nairn, Keith and Huntly</li> <li>• Higher than national fatal accident rates on sections of A96 between Fochabers Bypass and Keith, Keith and Huntly, and Huntly and Inverurie</li> <li>• More than half of all accidents occurring at, or near, one of the 600+ junctions or accesses along the corridor</li> <li>• Business feedback has highlighted a lack of overtaking opportunities and increased driver stress when travelling on the A96, in addition to issues relating to journey time reliability along the route</li> <li>• Opportunity to reduce conflict between local and strategic trips, particularly with respect to the number of fatal accidents involving pedestrians</li> </ul>

### 5.1.2 Transport Planning Objectives

Following consideration of the problems and opportunities noted above and wider policy aims and objectives, the following Transport Planning Objectives were developed to express the outcomes sought for the strategic transport network within the corridor.

#### Objective 1

To improve the operation of the corridor and inter-urban connectivity between the cities of Inverness and Aberdeen and their city regions through;

- Reduced journey times;
- Improved journey time reliability; and
- Reduced conflicts between local and strategic road based journeys.

#### Objective 2

To improve safety for motorised and non-motorised users through;

- Reduced accident rates and severity; and
- Reduced driver stress.

**Objective 3**

To provide opportunities to grow the regional economies on the corridor through;

- Improved access to the wider strategic transport network; and
- Enhanced access to jobs and services.

**5.1.3 Option Generation, Sifting and Development**

The generation of options resulted in a long list of potential interventions identified through previous studies, Regional and Local Transport Strategies, Development Plans, the Study Team and consultation with Local Authorities, Regional Transport Partnerships and various teams within Transport Scotland. The initial long list options were sifted through, and those which did not contribute to the Transport Planning Objectives, or those which individually or collectively did not contribute to the objectives at a strategic, corridor wide level were sifted out without the need for SEA inputs.

Options that remained following sifting were considered to have the potential to meet the study transport planning objectives. These were grouped and reviewed further, resulting in the definition of six strategic transport intervention options which were considered to have the potential to meet the corridor wide objectives (the six STAG options are detailed in Section 5.3). The six options were taken forward for detailed STAG appraisal.

Sections 5.2 to 5.5 below explain how the SEA provides a robust and detailed evidence base for assessments used to inform the STAG ‘environment’ criteria requirements for each option.

**5.2 SEA Appraisal of a ‘Do Minimum’ Scenario**

This section provides an overview of the SEA approach adopted for a Do Minimum scenario appraisal. The outputs of this appraisal then provide the reference case for the SEA assessment of the predicted effects of each of the six STAG options (see Section 5.3).

**5.2.1 Do Minimum Scenario Schemes**

The Do Minimum includes already committed transport schemes and takes account of predicted trends in population and traffic flows within the Inverness to Aberdeen transport corridor. The following schemes have been assumed for the Do Minimum scenario:

- Aberdeen Western Peripheral Route (AWPR) including a new junction on the A96 near Dyce;
- Aberdeen to Inverness Rail Improvements Phase 1. This scheme aims to deliver a 2 hour journey time, an hourly service and enhanced commuter services into each city. It will also facilitate the construction of new stations at Kintore and Dalcross by 2019;
- Dalcross will also be a Park-&-Ride site with interchange facilities with Inverness Airport;
- Strategic Park and Ride at Dyce on the A96;
- A9/A96 Connections Study  
Link road between A9 at Inshes and A96 at Smithton;
- A96 Inverness to Nairn (including Nairn Bypass)  
Upgrading of the A96 to dual carriageway between the roundabout at Inverness Retail and Business Park and Nairn, including a Nairn Bypass;

- A96 Inveramsay Bridge  
Construction of a realigned carriageway to allow for the removal of traffic lights at the Inveramsay Rail Bridge;
- A96 Threapland Junction  
Upgrading the junction at Threapland on the A96 trunk road approximately 1 kilometre east of Lhanbryde to improve safety;
- A90/A96 Haudagain Roundabout Upgrade.

Short descriptions of each Do Minimum scheme are provided in Appendix E.

### 5.2.2 SEA Appraisal of the Do Minimum and the Future Baseline

The SEA approach to the Do Minimum assessment has been structured to consider:

- currently recognised baseline conditions and key issues in the SEA study area (as detailed in Section 4.5), with a separate table for each SEA topic;
- predicted development of the future baseline for each topic in the absence of any Strategic Intervention (STAG) Options (recorded in Appendix E);
- the likely implications of the 'Do Minimum' schemes on environmental conditions; and
- a summary of the predicted change in the future baseline, taking account of the effects of the committed schemes.

The predicted effects of each scheme were identified through reviews of available information, for example Environmental Statement Non-Technical Summaries and the STPR SEA Environmental Report. Key references used in the appraisal of Do Minimum schemes are noted in Appendix G.

Appendix E documents the SEA Do Minimum scenario assessment for each of the topics 'scoped in' to the assessment. Table 5-2 below summarises the findings of the Do Minimum assessment, outlining the predicted future baseline for each scoped in SEA topic.

This table has been used as the reference case for the SEA appraisal of each of the six STAG intervention options (described in Section 5.4).

**Table 5-2 Do Minimum Scenario Appraisal Summary – Predicted Future Baseline Issues**

A96 Dualling Tier 1 SEA – Do-Minimum Scenario Appraisal – Predicted Future Baseline Summary for the SEA Study Area	
<b>Population &amp; Human Health</b>	<ul style="list-style-type: none"> <li>• Population within the SEA study area is expected to increase by at least the national average rate (0.4% per annum) between 2010 and 2035 and these increases are likely to lead to increased traffic volume along the A96 trunk road</li> <li>• There is currently one AQMA at the southern extent of the study area (in Aberdeen city) designated for NO<sub>2</sub> and PM<sub>10</sub> which may benefit slightly from Haudagain Roundabout improvements and air quality in the SEA study area may become an issue in line with increased traffic volume and congestion, e.g. in Inverurie</li> <li>• Committed transport schemes and infrastructure improvements may improve emissions within population centres (e.g. in Nairn) by diverting traffic and improving traffic flows</li> <li>• Long term change in vehicle engine types could provide minor benefits in terms of reduced vehicle emissions</li> <li>• Increasing congestion on the approaches to, and through, key settlements along the A96 and on approaches to the cities expected to lead to driver frustration</li> <li>• Inadequate overtaking opportunities between east of Nairn and Inverurie will remain an issue in some locations</li> <li>• In the absence of specific improvement schemes, higher than national average accident rates for the road type around areas such as Keith and Huntly, are likely to persist</li> <li>• Some modal shift may occur as a result of rail improvements; however, traffic demand modelling for the corridor indicates that there will be an overall growth in traffic in future years</li> </ul>
<b>Biodiversity, Fauna &amp; Flora</b>	<ul style="list-style-type: none"> <li>• There are a wide range of Ramsar, SAC, SPA and SSSI sites within the SEA study area boundary, the number of which could increase (e.g. new designations being proposed)</li> <li>• Current condition status trends of qualifying features and pressures on designated sites are likely to continue; however, future population growth and settlement expansion/ development within the SEA study area may introduce additional pressures</li> <li>• Pressures on species within the study area include habitat loss/ fragmentation related to land use change, and mortality through vehicle collisions are likely to be exacerbated</li> <li>• Existing A96 is likely to present a barrier to movement for some species, upgrading the Inverness to Nairn (including Nairn bypass) section may provide improved permeability via mammal passes/ pedestrian subways/ bridges; however this will not present route-wide benefits and barrier issues will persist in some locations</li> <li>• Upgraded sections of the A96 route will include drainage provisions (including SuDS) to current design standards; however, this is not the case across the entire route and road surface runoff will continue to present localised impacts on water quality around outfall locations, with subsequent issues for local biodiversity</li> <li>• Some modal shift may occur as a result of rail improvements; however, traffic demand modelling for the corridor indicates that there will be an overall growth in traffic in future years with potential for secondary impacts on roadside vegetation, species movement and road surface runoff</li> </ul>
<b>Water</b>	<ul style="list-style-type: none"> <li>• The quality of principal watercourses within the SEA study area (generally good to excellent) is likely to be maintained via non-transport related initiatives and measures to comply with the EU Water Framework Directive</li> <li>• There are a number of coastal, fluvial and wetland Natura and Ramsar sites within the SEA study area, the number and size of which may change in the future</li> <li>• Although there are a number of Local Authority flood prevention schemes within the vicinity of the existing Inverness to Aberdeen corridor, large areas are predicted to remain prone to significant fluvial and coastal flooding</li> <li>• Climate change anticipated to increase frequency of extreme weather events, including rainfall, which would be likely to increase frequency and severity of local flooding events</li> <li>• Upgraded sections of the A96 route will include drainage provisions (including SuDS) to current design standards, with subsequent benefits for surface runoff/ discharge quality and some enhanced capacity for flood attenuation; however, this is not the case across the entire route and current conditions will persist on some parts of the non-upgraded sections</li> <li>• Continued growth in traffic volume predicted on the A96 in future years is likely to exacerbate surface runoff/ discharge quality issues</li> <li>• Long term change in vehicle engine types could provide minor benefit in terms of vehicle emissions/ surface runoff (assume minimal change as electric vehicles still require oil/ lubricants)</li> </ul>

A96 Dualling Tier 1 SEA – Do-Minimum Scenario Appraisal – Predicted Future Baseline Summary for the SEA Study Area	
<b>Soils &amp; Geodiversity</b>	<ul style="list-style-type: none"> <li>• There are a range of geodiversity sites (SSSI and Geological Conservation Review sites) within the SEA study area, the number of which could change in the future</li> <li>• Development proposals in the SEA study area (transport and other land uses) have the potential to affect designated areas and to reduce the available area of productive agricultural land or peat reserves</li> <li>• Potential for minor adverse effects likely on roadside soils/ soil biodiversity associated with surface runoff, vehicle emissions and salt spray, exacerbated by growth in traffic volume</li> </ul>
<b>Historic Environment</b>	<ul style="list-style-type: none"> <li>• There are a wide range of designated and non-designated historic environment sites/ features within the SEA study area, the number of which could change in the future, for example Inverurie and Kintore have been identified as potential future Conservation Areas</li> <li>• Committed transport infrastructure schemes in the Do Minimum may have some effects on buried and upstanding archaeology, and other built heritage features, depending on the final alignments and locations of the proposals</li> <li>• General development proposals (e.g. housing) have the potential to affect and/ or to allow for interpretation of historic environment sites, including as yet unidentified buried archaeology</li> <li>• It is predicted that there will be a general continuation of existing traffic related effects on local historic environment features, e.g. effects of vehicle emissions on buildings/ monuments in urban areas/ close to the roadside, potentially exacerbated by increases in traffic volume associated with predicted population growth</li> </ul>
<b>Landscape</b>	<ul style="list-style-type: none"> <li>• There are no national landscape designations within the SEA study area</li> <li>• The area around Strathspey has been identified in local Morayshire reports as an Area of Great Landscape Value, none of the Do Minimum A96 route or Aberdeen to Inverness rail enhancements are expected to affect this area</li> <li>• The SNH broad landscape character assessment dataset describes the predominant landscape types within the study area as Lowland Coastal Landscapes of the North East to Agricultural Lowlands of the North East, with smaller areas of Highland Strath and Rolling Mountains/ Transitional Moorland in between</li> <li>• Do Minimum schemes are likely to present varying degrees of visual impact within the range of Landscape Character types, depending on the scale of the scheme and sensitivity of the relevant landscape and distribution of visual receptors; however, none are considered a scale sufficient to present significant adverse effects on local landscape character</li> <li>• It is likely that there will be some incremental changes in the surrounding landscape over time as a result of proposed developments around towns and settlements and renewable energy (e.g. wind) developments</li> </ul>

*Note to Table 5-2: SEA topics Air, Climatic Factors and Material Assets have been 'scoped out' of the Tier 1 assessment*

### 5.3 SEA Assessment of Strategic Intervention (STAG) Options

This section outlines the SEA approach to the assessment of six strategic transport intervention options developed for the Inverness to Aberdeen Corridor STAG appraisal, which will inform the strategic business case for interventions arising from the study.

#### 5.3.1 Approach to SEA Appraisal

Table 5-3 lists the six STAG intervention options, providing a headline description and a series of working assumptions. The assumptions were generated to add detail on the nature, characteristics and potential impacts of each option proposed, which allowed for robust and consistent appraisals.

An environmental constraints baseline was developed for a 15km-wide SEA study area (see Section 4), and a summary of key issues and constraints was prepared for the STAG process. This enabled the inclusion of an environmental context within the Inverness to Aberdeen Corridor Appraisal Report outlining the issues, problems and opportunities within the corridor.

A structured process was employed for the option appraisals:

1. Updated the 15km-wide SEA study area constraints baseline;
2. Developed a future baseline in the absence of any Do Minimum schemes or Strategic Intervention (STAG) Options for each SEA topic, assuming current trends in population and traffic growth continue (see Appendix E);
3. Assessed each Do Minimum scheme against the future baseline (in the absence of any STAG options) to predict how these schemes could affect each SEA topic;
4. Summarised the future baseline against each SEA topic, assuming all Do Minimum schemes are delivered;
5. Assessed each of the six STAG options against the future Do Minimum baseline, to predict how each option could affect each SEA topic;
6. A summary of the options appraisal against each SEA topic has been provided using the STAG seven point scale of impact significance (described below);
7. SEA appraisal outputs were included in the assessment of 'Environment' against the other STAG criteria to help inform the overall appraisal of options (see Section 5.5).

The SEA process concentrates on providing robust inputs for the consideration of the 'Environment' criterion within the wider STAG appraisal of the six options (which will be reported separately as the Inverness to Aberdeen Corridor Appraisal Report).

Table 5-3 provides headline details on the six STAG options and assessment assumptions, and Appendix F presents the SEA assessment for each of the six options in more detail.

Options 1 and 2 are rail enhancements, while options 3 to 6 involve trunk road improvements. It should be noted that options 3 to 6 involve a progression in the scale of the intervention, beginning with A96 targeted improvements (option 3) and leading up to full dualling of the A96 trunk road (option 6).

**Table 5-3 STAG Intervention Options and Assumptions**

STAG Option	Description	Assumptions
1. Rail enhancements/rolling stock improvements to provide an end-to-end travel time of around 1hr 45mins	Improved infrastructure to accommodate either electrified or high powered diesel rolling stock along the rail network.	<ul style="list-style-type: none"> <li>This option is based on the assumption that an average line speed of 60mph could be achieved along the route. Until further detailed assessment has been undertaken it will not be possible to determine what works would be required to deliver this option. The following potential infrastructure and rolling stock improvements may deliver these improvements and are assumed for assessment purposes only at this stage.</li> <li>Electrification of railway route involving overhead line gantries and conductors and associated electrical lineside control equipment</li> <li>High powered diesel or electric rolling stock capable of faster acceleration from stations to reduce journey times</li> <li>Possible localised works to rails/formation to increase radii of curves or additional loops (mostly within existing rail corridor)</li> </ul>
2. Rail service enhancements to allow a 15 minute frequency into both cities during peak periods with a 30 minute frequency for services into both cities outside of peak	Rail service enhancements to allow a 15 minute frequency between Inverurie and Aberdeen and Nairn and Inverness during peak periods. The remaining settlements which are within one hour of Aberdeen and Inverness will receive a 30 minute frequency, which forms part of the hourly service between both cities.	<ul style="list-style-type: none"> <li>Track and signalling enhancements have been delivered through the Aberdeen to Inverness rail improvements project</li> <li>The route has been electrified</li> <li>15 minute frequency of rail passenger services during the peak periods between Inverness and Nairn, and, Inverurie and Aberdeen (including stops at Dalcross and Kintore)</li> <li>30 minute service between Aberdeen and Huntly and Inverness and Elgin calling at all stations</li> <li>Hourly service between Inverness and Aberdeen which does not call at all intermittent stations during peaks to make way for stops at Dalcross and Kintore</li> </ul>
3. Targeted trunk road improvements	Physical works to improve safety and operational efficiency of the A96, such as: WS2+1 sections; climbing lanes; hard strip provision; local realignments and junction improvements.	<ul style="list-style-type: none"> <li>Assume generally where possible to complete on-line and where land allows for junction improvements</li> <li>Works targeted on sections where safety and operation are issues</li> <li>Assume avoidance of most severe effects on constraints, designations and communities</li> </ul>
4. Targeted trunk road improvements and new (single carriageway) bypasses on A96	Single carriageway bypasses of Forres, Elgin and Keith. Targeted Trunk Road Improvements (Option 3) for the remaining sections of the A96.	<ul style="list-style-type: none"> <li>Assumes that all three bypasses are constructed</li> <li>Assume avoidance of most severe effects on constraints, designations and communities</li> <li>On remainder of the route as Option 3</li> </ul>
5. Dual carriageway bypasses and dualling of heavily trafficked sections of the A96 plus targeted trunk road improvements	Dual carriageway bypasses of Forres, Elgin and Inverurie and dualling of heavily trafficked sections of the A96. Single carriageway bypass of Keith. Targeted Trunk Road Improvements (Option 3) for the remaining sections of the A96.	<ul style="list-style-type: none"> <li>Dual carriageway on the most heavily trafficked sections</li> <li>Dual carriageway bypasses around Forres, Elgin and Inverurie. Single carriageway bypass around Keith (assume avoidance of most severe effects on constraints, designations and communities)</li> <li>On remainder of the route as Option 3</li> </ul>
6. A96 full dualling plus targeted trunk road improvements	Provide full dual carriageway between east of Nairn and Aberdeen (i.e. Inverness to Nairn including Nairn Bypass included in the do-minimum).	<ul style="list-style-type: none"> <li>A combination of on-line and off-line works allowing for avoidance of most severe effects on constraints, designations and communities</li> <li>Grade separated junctions, at least one per major settlement</li> <li>Dual carriageway bypasses around Forres, Elgin, Keith, Huntly and Inverurie</li> </ul>



The detailed assessment of each option (see Appendix F) presents the findings of the future baseline appraisal (incorporating the Do Minimum schemes), such that the predicted impacts of each STAG option relate to the anticipated future conditions.

The level of detail and certainty in the SEA assessment is of an outline nature and draws on the assumptions described above to support the overall STAG appraisal.

To ensure consistency with the STAG process, each intervention option has been assessed and reported in line with the seven point scale of impact, advocated by STAG guidance:

- No benefit or impact (neutral);
- Minor benefit/ negative impact;
- Moderate benefit/ negative impact;
- Major benefit/ negative impact.


A range of potential effects is used to report the findings in the assessment tables (e.g. 'moderate negative to minor beneficial') to reflect the strategic nature of the assessment. Therefore, at this level, the SEA assessment tables are presented using a narrative style/ bullet point description approach, rather than typical +/- symbols.

The findings of the SEA assessment of the six options are presented through Section 5.4.

## 5.4 SEA Assessment Summaries

Table 5-4 to Table 5-9 in this section summarise the findings of the SEA assessment of the six strategic STAG intervention options. Fully detailed appraisal tables, and larger format graphics, are provided in Appendix F.


**Table 5-4 STAG Option 1 SEA Summary**

<b>Option</b>	1. Rail enhancements/ rolling stock improvements to provide an end-to-end travel time of around 1hr 45mins	
<b>Description</b>	Improved infrastructure to accommodate either electrified or high powered diesel rolling stock along the rail network.	
<p><b>Assumptions (modelling/ appraisal purposes)</b></p> <ul style="list-style-type: none"> <li>This option is based on the assumption that an average line speed of 60mph could be achieved along the route.</li> <li>Until further detailed assessment has been undertaken it will not be possible to determine what works would be required to deliver this option.</li> <li>The following potential infrastructure and rolling stock improvements may deliver these improvements and are assumed for assessment purposes only at this stage.</li> <li>Electrification of railway route involving overhead line gantries and conductors and associated electrical lineside control equipment</li> <li>High powered diesel or electric rolling stock capable of faster acceleration from stations to reduce journey times</li> <li>Possible localised works to rails/ formation to increase radii of curves or additional loops (mostly within existing rail corridor)</li> </ul>	 <p>The map displays a proposed rail route from Inverness in the west to Aberdeen in the east. Key stations marked with blue dots include Inverness, Dalriada, Inverurie, Kintore, and Aberdeen. The route is highlighted in orange, indicating areas for improved rail infrastructure and/or higher performance rolling stock. The map also shows existing rail lines and various geographical features like rivers and towns.</p> <p><b>Legend:</b>  <span style="color: orange;">—</span> Improved Rail Infrastructure and/ or higher performance Rolling Stock  <span style="color: blue;">●</span> New Stations (Do Minimum)</p>	
<b>SEA Summary</b>		
<b>Population and Human Health</b>		
<ul style="list-style-type: none"> <li>Neutral to minor, regional benefits for population and health in terms of opportunity for modal shift</li> <li>Neutral to minor, local benefits include reduced emissions through population centres, within commutable distance, associated with modal shift/ reduced peak hour congestion</li> <li>Neutral to minor beneficial effects on overall emissions within the SEA study area, depending on uptake/ modal shift realised and type of rolling stock favoured</li> <li>Overall, minor positive effects for population and human health at the regional scale</li> </ul>		
<b>Biodiversity, Flora and Fauna</b>		
<ul style="list-style-type: none"> <li>Assessed as neutral at the regional scale with potential for minor adverse effects in some localised areas</li> </ul>		
<b>Water</b>		
<ul style="list-style-type: none"> <li>Assessed as neutral at the regional scale</li> </ul>		
<b>Soils &amp; Geodiversity</b>		
<ul style="list-style-type: none"> <li>Assessed as predominantly neutral at the regional scale</li> <li>Areas better serviced by rail may become more attractive for development, with potential for minor indirect adverse effects on soil resources (soil sealing) at the local level</li> </ul>		
<b>Historic Environment</b>		
<ul style="list-style-type: none"> <li>Assessed as neutral at the regional scale</li> <li>Potential for minor adverse localised effects on setting of historic environment features</li> </ul>		
<b>Landscape</b>		
<ul style="list-style-type: none"> <li>Assessed as neutral to minor adverse at the regional landscape scale</li> <li>Neutral effects for visual receptors at local levels from marginally reduced trunk road traffic</li> <li>Potential for minor adverse effects for visual receptors at local levels</li> </ul>		


**Table 5-5 STAG Option 2 SEA Summary**

<b>Option</b>	2. Rail service enhancements to allow a 15 minute frequency into both cities during peak periods with a 30 minute frequency for services into both cities outside of peak
<p><b>Description</b></p> <p>Rail service enhancements to allow a 15 minute frequency between Inverurie and Aberdeen, and Nairn and Inverness, during peak periods.</p> <p>The remaining settlements which are within one hour of Aberdeen and Inverness will receive a 30 minute frequency, which forms part of the hourly service between both cities.</p>	
<p><b>Assumptions (modelling/ appraisal purposes)</b></p> <ul style="list-style-type: none"> <li>Track and signalling enhancements have been delivered through the Aberdeen to Inverness rail improvements project</li> <li>The route has been electrified</li> <li>15 minute frequency of rail passenger services during the peak periods between Inverness and Nairn, and, Inverurie and Aberdeen (including stops at Dalcross and Kintore)</li> <li>30 minute service between Aberdeen and Huntly and Inverness and Elgin calling at all stations</li> <li>Hourly service between Inverness and Aberdeen which does not call at all intermittent stations during peaks to make way for stops at Dalcross and Kintore</li> </ul>	
<p><b>SEA Summary</b></p>	
<p><b>Population and Human Health</b></p> <ul style="list-style-type: none"> <li>Neutral to minor, regional benefits for population and health in terms of opportunity for modal shift</li> <li>Neutral to minor, local benefits include reduced emissions through population centres, within commutable distance, associated with modal shift/ reduced peak hour congestion</li> <li>Neutral to minor adverse effects on overall emissions within the SEA study area, depending on uptake/ modal shift realised</li> <li>Minor, locally adverse effects to noise sensitive receptors around the rail corridor associated with increased service frequency</li> <li>Overall, a combination of minor positive and minor adverse (mixed) effects for population and human health at the regional scale</li> </ul> <p><b>Biodiversity, Flora and Fauna</b></p> <ul style="list-style-type: none"> <li>Assessed as neutral at the regional scale</li> </ul> <p><b>Water</b></p> <ul style="list-style-type: none"> <li>Assessed as predominantly neutral, but with potential for minor adverse impact on track drainage runoff, at the local scale</li> </ul> <p><b>Soils &amp; Geodiversity</b></p> <ul style="list-style-type: none"> <li>Assessed as predominantly neutral at the regional scale</li> <li>Areas better serviced by rail may become more attractive for development, with potential for minor indirect adverse effects on soil resources (soil sealing) at the local level</li> </ul> <p><b>Historic Environment</b></p> <ul style="list-style-type: none"> <li>Assessed as neutral at the regional scale</li> </ul> <p><b>Landscape</b></p> <ul style="list-style-type: none"> <li>Assessed as neutral at the regional landscape scale</li> <li>Potential for mixed (minor positive to minor adverse) effects for visual receptors at local levels</li> </ul>	


**Table 5-6 STAG Option 3 SEA Summary**

Option	3. Targeted trunk road improvements
<p><b>Description</b></p> <p>Physical works to improve safety and operational efficiency of the A96, such as: WS2+1 sections; climbing lanes; hard strip provision; local realignments and junction improvements.</p>	
<p><b>Assumptions (modelling/ appraisal purposes)</b></p> <ul style="list-style-type: none"> <li>• Assume generally where possible to complete on-line and where land allows for junction improvements</li> <li>• Works targeted on sections where safety and operation are issues</li> <li>• Assume avoidance of most severe effects on constraints, designations and communities</li> </ul>	
<p><b>SEA Summary</b></p>	
<p><b>Population and Human Health</b></p> <ul style="list-style-type: none"> <li>• Minor benefits at the local scale where improved sections address operational issues and improve road safety</li> <li>• Potential for locally adverse effects for road users in relation to new transition zones where there are changes in carriageway standard</li> <li>• Neutral to minor benefits at the regional scale in terms of reduced accident rate and journey times</li> </ul> <p><b>Biodiversity, Flora and Fauna</b></p> <ul style="list-style-type: none"> <li>• Assessed as minor adverse at the regional scale</li> <li>• Severity of adverse effects will depend on design, location and scale of improvement works</li> </ul> <p><b>Water</b></p> <ul style="list-style-type: none"> <li>• Minor benefits to surface water runoff discharge quality at local and regional scales</li> <li>• Neutral effect on flooding and flood risk at the regional scale</li> <li>• Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts</li> <li>• Potential for neutral to minor adverse effects on wetland habitats at the regional level</li> <li>• Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final locations of widened or realigned sections</li> </ul> <p><b>Soils &amp; Geodiversity</b></p> <ul style="list-style-type: none"> <li>• Given the assumption that the most severe effects on constraints and designations will be avoided, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts on soil resources, depending on final locations</li> <li>• Overall, assessed as likely to present minor adverse effects at the regional level</li> </ul> <p><b>Historic Environment</b></p> <ul style="list-style-type: none"> <li>• Given the assumption that the most severe effects on constraints and designations will be avoided, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts (direct and on setting) on historic environment features, depending on final locations</li> <li>• Overall, assessed as likely to present minor to moderate adverse effects at the regional level</li> </ul> <p><b>Landscape</b></p> <ul style="list-style-type: none"> <li>• Given that the A96 is already a feature in the landscape, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale</li> <li>• Minor to major adverse effects for sensitive visual receptors local to some areas of improvement locations</li> <li>• Overall, minor to moderate adverse landscape and visual effects at the regional level, softening over the longer term as mitigation planting matures</li> </ul>	

**Table 5-7 STAG Option 4 SEA Summary**

Option	4. Targeted trunk road improvements and new (single carriageway) bypasses on A96
<p><b>Description</b></p> <p>Single carriageway bypasses of Forres, Elgin and Keith.</p> <p>Targeted Trunk Road Improvements (Option 3) for the remaining sections of the A96.</p> <p><b>Assumptions (modelling/ appraisal purposes)</b></p> <ul style="list-style-type: none"> <li>Assumes that all three bypasses are constructed</li> <li>Assume avoidance of most severe effects on constraints, designations and communities</li> <li>On remainder of the route as Option 3</li> </ul>	
<p><b>SEA Summary</b></p>	
<p><b>Population and Human Health</b></p> <ul style="list-style-type: none"> <li>Minor benefits at the regional scale in terms of reduced accident rate, journey times and improved connectivity</li> <li>Minor to moderate benefits at the local scale where improved sections address operational issues and improve road safety</li> <li>Moderate benefits at the local scale for bypassed population centres, in terms of reduced congestion, emissions and noise and improved road safety</li> <li>Locally minor to moderate indirect benefits to human health in bypassed population centres</li> <li>Mixed effects on businesses depending on use/ reliance on the A96</li> <li>Potential for locally adverse impacts on some isolated properties/ residents affected by new bypasses, that are not currently affected by A96 issues</li> <li>Potential for locally adverse effects in relation to new transition zones between carriageway standard</li> </ul> <p><b>Biodiversity, Flora and Fauna</b></p> <ul style="list-style-type: none"> <li>Mixed impacts, ranging from minor positive to moderate adverse predicted at the regional scale</li> <li>Highly dependent on final route selection/ location of improvement works and avoidance of valuable/ sensitive/ designated biodiversity sites</li> <li>Potential for locally minor to major adverse impacts should sensitive sites/ features/ habitats prove unavoidable</li> <li>Neutral effect on mobile species, recognising potential barrier to movement, but with improved route permeability through passes, crossings and SuDS</li> </ul> <p><b>Water</b></p> <ul style="list-style-type: none"> <li>Minor benefits to surface water runoff discharge quality at local and regional scales</li> <li>Neutral effect on flooding and flood risk at the regional scale</li> <li>Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts</li> <li>Potential for minor adverse effects on wetland habitats at the regional level</li> <li>Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final locations of bypass sections/ improvement works</li> </ul> <p><b>Soils &amp; Geodiversity</b></p> <ul style="list-style-type: none"> <li>Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to moderate adverse impacts on soil resources, depending on final alignments/ improvement locations</li> <li>Overall, assessed as likely to present minor adverse effects at the regional level</li> </ul> <p><b>Historic Environment</b></p> <ul style="list-style-type: none"> <li>Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to major adverse impacts (direct and on setting) on historic environment features, depending on final alignments/ improvement locations</li> <li>Some potential for locally minor benefits in bypassed areas</li> <li>Overall, assessed as likely to present minor to moderate adverse effects at the regional level</li> </ul> <p><b>Landscape</b></p> <ul style="list-style-type: none"> <li>Given that the A96 is already a feature in the landscape, this option is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale</li> <li>Minor benefits at the local scale for bypassed receptors</li> <li>Moderate to major adverse visual effects for some sensitive receptors local to bypass locations/ improvement works</li> <li>Overall, minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures</li> </ul>	

**Table 5-8 STAG Option 5 SEA Summary**

Option	5. Dual carriageway bypasses and dualling of heavily trafficked sections of the A96 plus targeted trunk road improvements
Description	<p>Dual carriageway bypasses of Forres, Elgin and Inverurie and dualling of heavily trafficked sections of the A96.</p> <p>Single carriageway bypass of Keith.</p> <p>Targeted Trunk Road Improvements (Option 3) for the remaining sections of the A96.</p> 
Assumptions (modelling/ appraisal purposes)	
<ul style="list-style-type: none"> <li>• Dual carriageway on the most heavily trafficked sections</li> <li>• Dual carriageway bypasses around Forres, Elgin and Inverurie. Single carriageway bypass around Keith (assume avoidance of most severe effects on constraints, designations and communities)</li> <li>• On remainder of the route as Option 3</li> </ul>	
SEA Summary	
<p><b>Population and Human Health</b></p> <ul style="list-style-type: none"> <li>• Moderate to major benefits at the local scale where improved sections address operational issues and improve road safety</li> <li>• Moderate benefits at the regional scale in terms of improved operational efficiency, connectivity and safety</li> <li>• Moderate benefits at the local scale for bypassed population centres, in terms of reduced congestion, emissions and noise and improved road safety</li> <li>• Locally minor to moderate indirect benefits to human health in bypassed population centres</li> <li>• Mixed effects on businesses depending on use/ reliance on the A96</li> <li>• Potential for locally moderate adverse impacts on some isolated properties/ residents affected by this option that are not currently affected by A96 issues</li> <li>• Potential for locally adverse effects in relation to new transition zones between carriageway standard</li> </ul>	
<p><b>Biodiversity, Flora and Fauna</b></p> <ul style="list-style-type: none"> <li>• Mixed impacts, ranging from minor positive to moderate adverse predicted at the regional scale</li> <li>• Highly dependent on final route selection/ location of improvement works and avoidance of valuable/ sensitive/ designated biodiversity sites</li> <li>• Potential for locally minor to major adverse impacts should sensitive sites/ features/ habitats prove unavoidable</li> <li>• Neutral effect on mobile species, recognising potential barrier to movement, but with improved route permeability through passes, crossings and SuDS</li> </ul>	
<p><b>Water</b></p> <ul style="list-style-type: none"> <li>• Minor benefits to surface water runoff discharge quality at local and regional scales</li> <li>• Neutral effect on flooding and flood risk at the regional scale</li> <li>• Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts</li> <li>• Potential for minor adverse effects on wetland habitats at the regional level</li> <li>• Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final locations of improved/ bypass sections</li> </ul>	
<p><b>Soils &amp; Geodiversity</b></p> <ul style="list-style-type: none"> <li>• Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to moderate adverse impacts on soil resources, depending on final alignments/ improvement locations</li> <li>• Overall, assessed as likely to present minor adverse effects at the regional level</li> </ul>	
<p><b>Historic Environment</b></p> <ul style="list-style-type: none"> <li>• Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to major adverse impacts (direct and on setting) on historic environment features, depending on final alignments/ improvement works</li> <li>• Some potential for locally minor benefits in bypassed areas</li> <li>• Overall, assessed as likely to present minor to moderate adverse effects at the regional level</li> </ul>	
<p><b>Landscape</b></p> <ul style="list-style-type: none"> <li>• Given that the A96 is already a feature in the landscape, this option is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale</li> <li>• Minor benefits at the local scale for bypassed receptors</li> <li>• Moderate to major adverse visual effects for some sensitive receptors local to bypass/ improvement locations</li> <li>• Overall, minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures</li> </ul>	

**Table 5-9 STAG Option 6 SEA Summary**

Option	6. A96 full dualling plus targeted trunk road improvements
<p><b>Description</b> Provide full dual carriageway between east of Nairn and Aberdeen (i.e. Inverness to Nairn including Nairn Bypass included in the do-minimum).</p> <p><b>Assumptions (modelling/appraisal purposes)</b></p> <ul style="list-style-type: none"> <li>• A combination of on-line and off-line works allowing for avoidance of most severe effects on constraints, designations and communities</li> <li>• Grade separated junctions, at least one per major settlement</li> <li>• Dual carriageway bypasses around Forres, Elgin, Keith, Huntly and Inverurie</li> </ul>	
<p><b>SEA Summary</b></p>	
<p><b>Population and Human Health</b></p> <ul style="list-style-type: none"> <li>• Major benefits at the local scale where dualling addresses current accident hotspots and improves road safety</li> <li>• Moderate benefits at the regional scale in terms of reduced journey times and improved connectivity</li> <li>• Moderate to major benefits at the local scale for bypassed population centres, in terms of reduced congestion, emissions and noise and improved road safety</li> <li>• Locally moderate indirect benefits to human health in bypassed population centres</li> <li>• Mixed effects on businesses depending on use/ reliance on the A96</li> <li>• Potential for locally adverse impacts on some isolated properties/ residents affected by full dualling that are not currently affected by A96 issues</li> </ul> <p><b>Biodiversity, Flora and Fauna</b></p> <ul style="list-style-type: none"> <li>• Mixed impacts, ranging from minor positive to moderate adverse predicted at the regional scale</li> <li>• Highly dependent on final route selection and avoidance of valuable/ sensitive/ designated biodiversity sites</li> <li>• Potential for locally minor to major adverse impacts should sensitive sites/ features/ habitats prove unavoidable</li> <li>• Neutral effect on mobile species, recognising potential barrier to movement, but with improved route permeability through passes, crossings and SuDS</li> </ul> <p><b>Water</b></p> <ul style="list-style-type: none"> <li>• Minor benefits to surface water runoff discharge quality at local and regional scales</li> <li>• Neutral effect on flooding and flood risk at the regional scale</li> <li>• Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts</li> <li>• Potential for minor adverse effects on wetland habitats at the regional level</li> <li>• Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final route alignment</li> </ul> <p><b>Soils &amp; Geodiversity</b></p> <ul style="list-style-type: none"> <li>• Given the assumption that the most severe effects on constraints and designations will be avoided, the full dualling option is assessed with the potential for locally minor to moderate adverse impacts on soil resources, depending on the final route alignment</li> <li>• Overall, assessed as likely to present minor adverse effects at the regional level</li> </ul> <p><b>Historic Environment</b></p> <ul style="list-style-type: none"> <li>• Given the assumption that the most severe effects on constraints and designations will be avoided, the full dualling option is assessed with the potential for locally minor to major adverse impacts (direct and on setting) on historic environment features, depending on the final route alignment</li> <li>• Some potential for locally minor benefits in bypassed areas</li> <li>• Overall, assessed as likely to present minor to moderate adverse effects at the regional level</li> </ul> <p><b>Landscape</b></p> <ul style="list-style-type: none"> <li>• Given that the A96 is already a feature in the landscape, full dualling is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale</li> <li>• Minor benefits at the local scale for bypassed receptors</li> <li>• Moderate to major adverse visual effects for some sensitive receptors local to upgraded route</li> <li>• Overall, minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures</li> </ul>	

## 5.5 Linking SEA Assessment to STAG Appraisal

The aim of the Tier 1 SEA has been to consider each strategic intervention option (STAG option) in isolation, providing an assessment of the predicted environmental effects of each option against a reference case, 'Do Minimum' future baseline scenario.

STAG options 1 and 2 (rail intervention options) were generally considered by the SEA to present low risks of significant environmental impacts, mainly due to the assumption that rail improvement works would be within the existing railway footprint. Infrastructure changes to enable route electrification were assessed with the potential for some locally adverse effects on historic features.

Changes in rail rolling stock and more frequent services were generally considered to present neutral to minor benefits in terms of potential for slightly reduced traffic flows through urban centres; however, some negative visual and noise effects were identified for sensitive receptors at local levels. Biodiversity and water quality/ flood risk effects were considered and assessed as predominantly neutral.

STAG options 3 to 6 (trunk road intervention options) were presented in increasing scale, where STAG option 3 represented targeted improvements at local levels, option 4 added single carriageway bypasses, option 5 increased these to dual carriageway bypasses (with the exception of Keith which has a single carriageway bypass under this option) and dualling of the most heavily trafficked sections, and option 6 represented full dualling of the route.

Accordingly, the scale of potential environmental effects increase in line with the scale of the intervention; for example, water quality/ drainage runoff was assessed as improving with greater incorporation of route-wide SuDS treatment, whereas potential impacts associated with land use change would increase in proportion to the amount of agricultural land or woodland areas affected.

Effects on biodiversity (species) were considered as likely to be mixed; where the increasing scale of intervention could create a wider barrier for species movement and remove more habitat or, with suitable species crossings embedded through design mitigation, could improve permeability for species.

Given that the options include assumptions to avoid severe environmental effects, effects on biodiversity conservation sites are assessed as up to moderate; however, there will be requirements for watercourse crossings which may affect part of a designated site. At this level of assessment, best practice design processes and construction stage mitigation are expected to minimise risks.

A key issue for any scale of A96 trunk road intervention will be the potential for effects on historic environment features, due to the extensive range of heritage assets identified within the baseline study area. Similarly, the landscape and visual effects will depend on the scale of intervention and the sensitivity of the differing receiving landscape types along the route.

Table 5-4 to Table 5-9 above outline the results of the SEA assessments and Table 5-10 below translates the findings into a summary impact range for use in STAG Appraisal Summary Tables (AST). The AST is a tool used in the STAG process to record summaries of the appraisal against the transport planning objectives, STAG and other criteria referred to earlier.

This Environmental Report and the supporting Appendices therefore provide the evidence base and audit trail for the assessment of the 'Environment' criterion within the STAG process, whereas the STAG study will consider the wider appraisal elements.

The "Inverness to Aberdeen Corridor Study – A96 Dualling Inverness to Aberdeen Strategic Business Case" report summarises the outcome of the Corridor STAG Appraisal.



**Table 5-10 SEA Findings – Impact Range for STAG Appraisal Summary Tables (AST)**

Option	Impact Range for STAG AST
<p>1. Rail enhancements/rolling stock improvements to provide an end-to-end travel time of around 1hr 45mins</p>	<p><b>Population and Human Health</b> Neutral to minor positive effects at the regional scale associated with modal shift and reduced emissions through population centres Potential for increased benefit with electrified rolling stock</p> <p><b>Biodiversity, Flora and Fauna</b> Predominantly neutral, but with some potential for locally minor adverse effects depending on the location and scale of enhancement works</p> <p><b>Water</b> Predominantly neutral</p> <p><b>Soils &amp; Geodiversity</b> Predominantly neutral</p> <p><b>Historic Environment</b> Predominantly neutral, but with some potential for locally minor adverse effects depending on the location and scale of enhancement works</p> <p><b>Landscape</b> Predominantly neutral, but with potential for minor adverse effects depending on the location and scale of enhancement works</p>
<p>2. Rail service enhancements to allow a 15 minute frequency into both cities during peak periods with a 30 minute frequency for services into both cities outside of peak</p>	<p><b>Population and Human Health</b> Minor positive effects at the regional scale associated with modal shift and reduced emissions through population centres Minor adverse effects at local levels for sensitive noise receptors</p> <p><b>Biodiversity, Flora and Fauna</b> Predominantly neutral</p> <p><b>Water</b> Predominantly neutral, but with some potential for minor adverse effects on runoff water quality at the local scale</p> <p><b>Soils &amp; Geodiversity</b> Predominantly neutral</p> <p><b>Historic Environment</b> Predominantly neutral</p> <p><b>Landscape</b> Predominantly neutral, but with some potential for mixed effects for visual receptors at local levels</p>
<p>3. Targeted Trunk Road Improvements</p>	<p><b>Population and Human Health</b> Neutral to minor benefits at the regional scale in terms of reduced accident rates and journey times Mixed effects at the local scale associated with road safety at targeted locations and transition zones</p> <p><b>Biodiversity, Flora and Fauna</b> Minor adverse effects at the regional scale dependent upon design, location and scale of improvement works</p> <p><b>Water</b> Mixed effects ranging from minor positive at the regional scale to moderate negative at the local scale, depending on final locations of improvements</p> <p><b>Soils &amp; Geodiversity</b> Minor adverse effects at the regional level depending upon final locations of improvements</p> <p><b>Historic Environment</b> Minor to moderate adverse effects at the regional level due to the wide range of historic environment features in the area</p> <p><b>Landscape</b> Minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures Minor to major adverse effects for sensitive visual receptors at the local scale</p>

Option	Impact Range for STAG AST
<p>4. Targeted Trunk Road Improvements and New (Single Carriageway) Bypasses on A96</p>	<p><b>Population and Human Health</b>                      Minor benefits at the regional scale in terms of reduced accident rate, journey times and improved connectivity                      Some potential for moderate beneficial effects at the local scale in bypassed population centres                      Potential for locally adverse impacts on some isolated properties/ residents affected by new bypasses, that are not currently affected by A96 issues                      Potential for locally adverse impacts associated with transitions between carriageway standards</p>
	<p><b>Biodiversity, Flora and Fauna</b>                      Mixed impacts, ranging from minor positive to moderate adverse predicted at the regional scale                      Potential for locally minor to major adverse impacts, dependent on final route selection</p>
	<p><b>Water</b>                      Mixed effects ranging from minor positive at the regional scale to moderate negative at the local scale, depending on final locations of bypass sections/ improvement works</p>
	<p><b>Soils &amp; Geodiversity</b>                      Minor adverse effects at the regional level, due to soil sealing associated with this option, depending upon final alignments/ improvement locations</p>
	<p><b>Historic Environment</b>                      Minor to moderate adverse effects at the regional level due to the wide range of historic environment features in the area                      Some potential for minor beneficial effects at the local scale in bypassed centres</p>
	<p><b>Landscape</b>                      Minor to moderate adverse effects at the regional landscape scale, softening over the longer term as mitigation planting matures                      Mixed effects for sensitive visual receptors at the local scale</p>
	<p>5. Dual Carriageway Bypasses and Dualling of Heavily Trafficked Sections of the A96 plus Targeted Trunk Road Improvements</p>
<p><b>Biodiversity, Flora and Fauna</b>                      Mixed impacts, ranging from minor positive to moderate adverse at the regional scale                      Potential for locally minor to major adverse impacts depending on final location of bypasses/ upgrades</p>	
<p><b>Water</b>                      Mixed impacts ranging from minor positive at the regional scale to minor negative at the local scale, depending on final location of bypasses/ upgrades</p>	
<p><b>Soils &amp; Geodiversity</b>                      Minor adverse effects at the regional level due to soil sealing associated with this option</p>	
<p><b>Historic Environment</b>                      Minor to moderate adverse effects at the regional level (recognising potential for major adverse effects if losses are unavoidable at the local level) due to the wide range of historic environment features in the area                      Some potential for minor beneficial effects at the local scale in bypassed centres</p>	
<p><b>Landscape</b>                      Minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures                      Mixed effects for sensitive visual receptors at the local scale</p>	

Option	Impact Range for STAG AST
<p>6. A96 Full Dualling plus Targeted Trunk Road Improvements</p>	<p><b>Population and Human Health</b>                      Major positive effects at the regional and local scales in terms of improved safety, journey times and connectivity and reduced emissions through population centres                      Potential for locally adverse impacts on some isolated properties/ residents affected by full dualling that are not currently affected by A96 issues</p>
	<p><b>Biodiversity, Flora and Fauna</b>                      Mixed impacts, ranging from minor positive to moderate adverse at the regional scale                      Potential for locally minor to major adverse impacts depending on final route alignment</p>
	<p><b>Water</b>                      Mixed impacts ranging from minor positive (e.g. improved drainage and discharge quality) at the regional scale to moderate negative (e.g. construction risks to watercourses) at the local scale, depending on final route alignment</p>
	<p><b>Soils &amp; Geodiversity</b>                      Minor adverse effects at the regional level due to soil sealing associated with full dualling</p>
	<p><b>Historic Environment</b>                      Minor to moderate adverse effects at the regional level (recognising potential for major adverse effects if losses are unavoidable at the local level) due to the wide range of historic environment features in the area                      Some potential for minor beneficial effects at the local scale in bypassed centres</p>
	<p><b>Landscape</b>                      Minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures                      Mixed effects for sensitive visual receptors at the local scale</p>

## 5.6 Outcome of the Strategic Business Case Appraisal

The Transport Scotland *Inverness to Aberdeen Corridor Study – A96 Dualling Inverness to Aberdeen Strategic Business Case* is submitted as an accompanying document to this Environmental Report. It summarises the wider economic assessment undertaken within the context of the SEA/ STAG appraisals. It concludes with the following statements:

*The outcome of this appraisal clearly demonstrates that the proposal to dual the A96 is the best way to meet the future needs of those living, working and travelling along the A96 Corridor in the 21st Century.*

*Importantly, the appraisal has shown that, the dualling is best able to meet the Transport Planning Objectives, by providing drivers with a consistent road standard that provides the best connectivity for those using the route, either end to end or to the many destinations along the corridor.*

*Dualling the A96 will also complement the planned upgrades to the A9 and A90 Aberdeen Western Peripheral Route (AWPR), and will provide those people and businesses located along the corridor with the best possible access to Inverness and Aberdeen and onwards to Central Belt.*

*In summary,*

- the appraisal evidence demonstrates that the options for further improving the transport links between Inverness and Aberdeen over and above existing commitments should be road based infrastructure interventions;*
- full dualling of the A96 between Inverness and Aberdeen is the best performing option in terms of the transport planning objectives and the STAG criteria; and*
- more detailed work on the Outline Business Case will help to refine the phasing and programme.*

Given the outcome that full dualling represents the best performing option overall, the SEA process will move to a second tier of assessment which will focus on Improvement Strategy Options for alternative dualling solutions.

Section 6 of this report discusses how SEA monitoring and post adoption will be completed following the second tier of assessment and Section 7 of this report signposts the range of Improvement Strategy Options to be considered via the Tier 2 SEA, in conjunction with a Preliminary Engineering Services (PES) assessment.

## 6 Note on Deferring Monitoring and Post Adoption Statement until Completion of Tier 2 SEA

Tier 1 SEA outputs have been determined in order to inform the STAG option appraisal process and the developing business case for strategic interventions in the Inverness to Aberdeen corridor; therefore, it is considered that SEA monitoring proposals would not add value at this stage.

Tier 2 SEA will consider the environmental implications associated with a range of future 'Improvement Strategy Options', which will be developed to consider alternative ways of providing dual carriageway connectivity between Inverness and Aberdeen.

Section 7 provides an overview on the range of the Improvement Strategy Options to be considered via the Tier 2 SEA. Given the two-tier nature of this particular SEA process, it is proposed that:

- following consultation on this Tier 1 Environmental Report, a distinct Scoping Report will be produced to describe the Tier 2 SEA approach going forward;
- consultation feedback on this Environmental Report will be recorded via an Appendix to the Tier 2 Scoping Report;
- draft monitoring proposals will be deferred to the Tier 2 SEA Environmental Report, to be informed by the Tier 2 assessment;
- a single, completion stage, Post Adoption Statement (PAS) will be produced following consultation on the Tier 2 Environmental Report, to:
  - detail how the Tier 1 SEA process informed the Inverness to Aberdeen Corridor STAG appraisal process and the developing business case;
  - record and address consultation feedback on the Tier 2 Environmental Report;
  - capture and address any issues raised during anticipated public exhibitions;
  - include a finalised monitoring framework which will inform future stages of design and assessment work.

Conclusion of process via a single Post Adoption Statement is expected to better enable a synopsis of the full two-tier SEA process, demonstrating linkages between the two levels of assessment, the additional detail incorporated at each stage and the required monitoring framework.

## 7 Signposting Tier 2 SEA

In order to maintain progress against the overarching programme, the SEA team will issue a Scoping Report for the Tier 2 SEA following completion of consultation requirements on this Tier 1 Environmental Report. Much of the policy review, baseline constraints and GIS development undertaken for the Tier 1 SEA will be used to inform the Tier 2 SEA process.

Tier 2 SEA will consider a range of ‘Improvement Strategy Options’, which will be developed under a separate Preliminary Engineering Services (PES) workstream, to consider alternative ways of providing dual carriageway connectivity between Inverness and Aberdeen.

Tier 2 SEA will work in parallel with PES to sift the Improvement Strategy Options (which will be referred to as PES options) via:

### 1. PES objectives-led sifting assessment

The PES will consider each of the Improvement Strategy Options against each of the dualling programme objectives. The programme objectives represent a further development of the three STAG *corridor* plan objectives (noted in Section 5.1.2) and relate to operational performance, safety, growing regional economies, active travel and public transport, with a specific objective “to reduce the environmental effect on the communities in the corridor”. The objective-led assessment will aim to ‘sift out’ any of the Improvement Strategy Options that do not meet the programme objectives, recommending their removal from further consideration.

### 2. SEA constraints-led sifting assessment

From an SEA perspective, the dualling programme objective on environmental relief for communities does not provide enough sensitivity across the range of environmental topics which SEA covers. The SEA will therefore consider each of the Improvement Strategy Options against the full suite of GIS constraint datasets used in the Tier 1 SEA. Options that are significantly constrained, or are likely to result in more significant environmental impacts than others, will be recommended for removal from further consideration.

Where both sifting assessments independently recommend the removal of the same Improvement Strategy Option, it is likely that those options will not be taken forward for further consideration. Should the sifting assessment results differ between the PES and SEA for any option, these will be considered further with the aim of agreeing a shortlist of Improvement Strategy Options for future consideration.

Figure 7-1 provides a schematic overview of the indicative PES Improvement Strategy Options (labelled A-Q), where each option is superimposed over the broad landscape character types, as well as the boundaries of the Cairngorms National Park and National Scenic Area.

The Improvement Strategy Options include a number that lie outwith the 15km-wide Tier 1 SEA baseline study area. There are a range of straight, point-to-point options, others which generally follow the line of other routes in the region between Inverness and Aberdeen, and some shorter connections between points on longer options. Tier 2 SEA will apply a 1km-wide study area to each of the options to inform the constraints led environmental assessment of each option.

It should be noted that Option B includes bypass options to the north and south of key towns; Tier 2 SEA will therefore separate Option B into Bnorth and Bsouth variants to enable constraint comparisons.

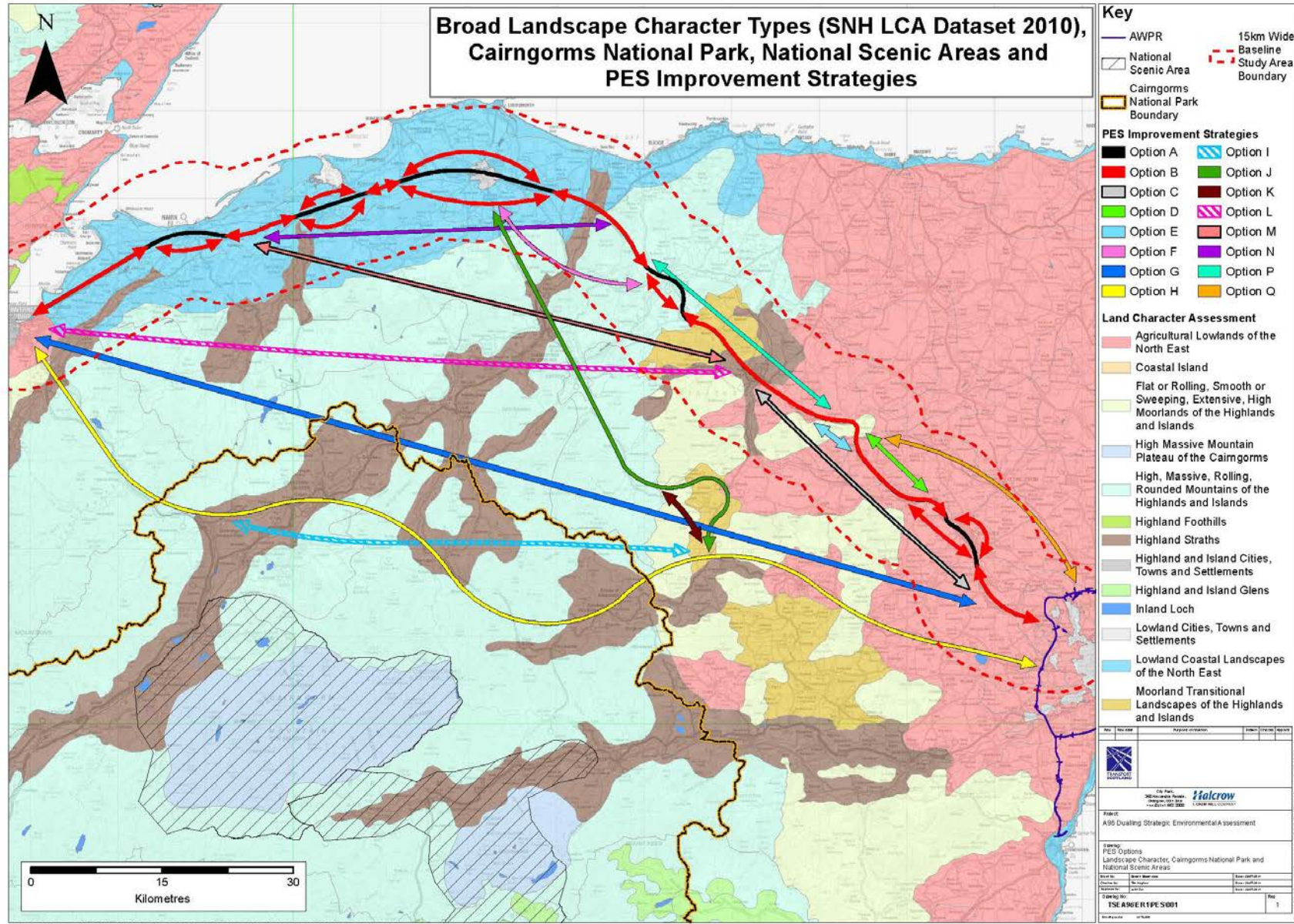


Figure 7-1 Schematic illustrating Improvement Strategy Options (PES Options, A-Q) for Tier 2 SEA Assessment

## 7.1 Developing the Tier 2 SEA Constraints Baseline

Further environmental constraints information will be added to the GIS databank where this is required following the preliminary sifting exercise. This might include for example additional data on local development plan allocations, local landscape designations, local nature reserves or locally important heritage features that are not nationally designated.

More specific proposals for additional constraints, to be included in the Tier 2 assessment, will be discussed within the Tier 2 SEA Scoping Report.

## 7.2 Outline Approach to ‘Landscape’ for Tier 2 SEA

In their response to the Tier 1 SEA Scoping Report in January 2014, SNH made recommendations that landscape issues should be incorporated within the core set of criteria for SEA assessment.

Under Tier 1 SEA, landscape considerations have been limited to a review of local landscape character reports, the identification of the broad SNH landscape character types within the SEA study area, and recognition that impacts would be dependent on the scale of intervention and the sensitivity of the receiving landscape type.

The SEA recognises that landscape character and sensitivity are important assessment issues, particularly for Tier 2 SEA where they will be considered in more detail to inform the assessment of shortlisted Improvement Strategy Options. Further detail on baseline landscape character type, and relative sensitivity to dualling, will be included in developing methodology work for the Tier 2 SEA Scoping Report.

## 7.3 Other Tier 2 Assessments

Tier 2 SEA will also be informed by Habitats Regulations Appraisal (HRA) Screening and a route-wide Strategic Flood Risk Assessment (SFRA).

**HRA Screening** will consider the potential for ‘Likely Significant Effects’ on the qualifying features of Natura sites (sites designated under European Directives as Special Protection Areas (SPAs) or Special Areas of Conservation (SACs)) and Ramsar Sites in the area. HRA Screening comparisons will be restricted to the shortlisted set of ‘sifted in’ Improvement Strategy Options.

The **Strategic Flood Risk Assessment** will be carried out in parallel with Tier 2 SEA to inform the consideration of key areas of flood risk. SFRA will collate information on local flood history and consult with SEPA and Local Authorities on flooding issues in the area. The SFRA will also consider the relative issues associated with/ merits of the shortlisted set of ‘sifted in’ Improvement Strategy Options.

It is intended that HRA and SFRA assessment reports inform the Tier 2 SEA assessments and monitoring framework and will be provided as Appendices to the Tier 2 SEA Environmental Report.



## 8 Tier 1 SEA – Next Steps

The overarching aim of the Tier 1 SEA was to fully document the effective environmental assessment of a range of strategic intervention options, developed for the Inverness to Aberdeen transport corridor appraisal, helping to address any potentially perceived policy appraisal gap between the Strategic Transport Projects Review (STPR) in 2008, and recent changes in Government policy that support improved strategic connectivity between Scotland’s major cities. This Tier 1 SEA Environmental Report and Appendices provide that detailed assessment.

### 8.1 Consultation on this Environmental Report

A six week consultation period will follow the publication of this Environmental Report, closing on 6<sup>th</sup> November 2014.

Written feedback is welcomed and should be addressed to:

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Statutory consultees should respond via the Scottish Government SEA Gateway.

All consultation responses will be fully documented and considered in the development of the Tier 2 SEA Scoping Report.

## List of Appendices

Appendix A	Response to Consultation Authority Comments on Tier 1 Scoping Report
Appendix B	Policies, Plans and Strategies (PPS) Review
Appendix C	GIS Constraints Mapping
Appendix D	Baseline Constraints Summary Tables
Appendix E	STAG Appraisal Do Minimum Scheme Descriptions and Assessment Tables
Appendix F	STAG Appraisal Options Schematic and Assessment Tables
Appendix G	Key References

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# A96 Dualling Programme

## Strategic Environmental Assessment

Tier 1 Environmental Report

Transport Scotland

September 2014









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