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Glossary of Terms

Air Quality Management	A non-permanent designation created if monitoring reveals that statutory air quality thresholds are being exceeded or will be exceeded in
Area (AQMA)	the near future.
Appraisal Summary Table (AST)	These provide a high-level summary of the appraisal performance of each grouping in a format which is quick and easy to interpret.
Assessment	An umbrella term for description, analysis, and evaluation.
Baseline	The existing conditions which form the basis or start point of the environmental assessment.
Biodiversity	Biological diversity, or richness of living organisms present in representative communities and populations.
Community	Community severance is defined here as the separation of residents from
Severance	facilities and services they use within their community caused by new or improved roads or by changes in traffic flows.
Conservation	Area of special architectural or historic interest, the character or
Area	appearance of which it is desirable to preserve or enhance. Designated under section 61 Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997.
Consultation	Refers to the three statutory Consultation Authorities in Scotland:
Authorities	Historic Environment Scotland, NatureScot and the Scottish Environment Protection Agency.
Cultural	A building, monument, site, place, area or landscape identified as having
heritage	a degree of significance meriting consideration in planning decisions,
resource	because of its heritage interest.
Cumulative effects	Scottish SEA Guidance (2013) states that 'Cumulative effects can be considered in terms of synergistic effects, additive impacts and
enects	secondary effects'. For the purposes of this SEA, the term 'cumulative effects' also encompasses synergistic and secondary effects.
Detailed	The third stage of the STAG process, which involves quantitative
Appraisal	assessment. This will be informed by more detailed and quantified
	appraisal of the option groupings so far as is practicable at this stage,
	and consideration of packages of groupings e.g. multi-modal or geographically based packages.
Ecosystem	A biological community of organisms interacting with one another and their physical environment.
Effect	The result of change or changes on specific environmental resources or receptors.
Environmental Impact Assessment (EIA)	The process by which information about the environmental effects of a project is evaluated and mitigation measures are identified.

Environmental Report	An Environmental Report presents the findings of the SEA undertaken for a project. A Draft Environmental Report is published for public consultation and then updated to become a Final Environmental Report, that responds to consultation feedback.
European Site	Otherwise known as 'Natura 2000' sites. These include Special Areas of Conservation (SACs) designated under the Habitats Directive (92/43/EEC) and Special Protection Areas (SPAs) designated under the Birds Directive (2009/147/EEC). In addition, Candidate and Possible SACs, Potential SPAs and Ramsar wetlands (designated under the Convention on Wetlands of International Importance) should be included in appraisals as they are afforded the same level of protection as European sites under domestic policy. Natura 2000 sites are designated due to the presence of specific habitats and species of internationally important biodiversity value, otherwise known as 'qualifying interest features'.
Habitat	Term most accurately meaning the place in which a species lives, but also used to describe plant communities or agglomerations of plant communities, as used, for example in a Phase 1 Habitat Survey.
Habitat fragmentation	Describes the breaking up of an organism's preferred environment/habitat. Occurs naturally through long-term geological processes, or through human activities, such as change of land use or infrastructure development.
Habitats Regulations Appraisal	Under the Habitats Regulations, all competent authorities must consider whether any plan or project will have a 'likely significant effect' on a European site. If so, they must carry out carry out an 'appropriate assessment' (AA). This is known as Habitats Regulations Appraisal (HRA).
Habitats Directive	EC Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.
Hydrological	The exchange of water between the atmosphere, the land and the oceans.
Infrastructure Investment Plan (IIP)	Scottish Government document which sets out why there is a need to invest, how the Scottish Government invests and what strategic, large-scale investments are intended to be taken forwards within each sector over the next 10 to 20 years.
Initial Appraisal: Case for Change	The first stage of the STAG process which demonstrates the rationale for intervention. The end output of this is a Sifted List of options. This process is informed by problems and opportunities, development of transport planning objectives, option generation and development, and sifting. An A96 Corridor Review Case for Change report was published on 22 December 2022 1.
Land Capability for Agriculture (LCA)	Land Capability for Agriculture (LCA) is derived from data published by The James Hutton Institute (2010) and its primary objective is to rank land based on its potential productivity and cropping flexibility determined by the extent to which its physical characteristics impose long-term restrictions on its agricultural use.

Landscape	Human perception of the land, conditioned by knowledge and identity with a place.
Land-take	Acquired land which is necessary to construct the project and associated infrastructure and to undertake the essential environmental mitigation measures.
Listed Building	Building included on the list of buildings of special architectural or historic interest and afforded statutory protection under the 'Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997' and other planning legislation. Classified categories are A-C.
Local Landscape Character Area (LLCA)	An area outlined as having distinct characteristics based on landscape features. Derived from regional landscape studies available from NatureScot.
Low Emission Zone (LEZ)	Following approval from Scottish Ministers, Aberdeen City Council introduced a Low Emission Zone (LEZ) in Aberdeen City Centre from 30 May 2022.
	A LEZ is an area where only certain vehicles are allowed to enter based on their emissions standards.
	The LEZ is being introduced to address dangerous levels of air pollution in the city centre, mainly nitrogen dioxide (NO_2), which is caused by road traffic.
	Enforcement of the LEZ started on the 1st June 2024.
Mitigation	Measure to avoid, reduce or offset potential adverse effects.
Natural Capital	Natural Capital can be defined as the world's stocks of natural assets which include geology, soil, air, water and all living things. It is from this natural capital that humans derive a wide range of services, often called ecosystem services, which make human life possible.
Net zero	Net zero refers to achieving a balance between the amount of greenhouse gas emissions produced and the amount removed from the atmosphere. There are two different routes to achieving net zero, which work in tandem: reducing existing emissions and actively removing greenhouse gases.
Net zero targets	Scotland has a net-zero greenhouse gas emissions target for 2045. This covers all greenhouse gas emissions.
Non-motorised users	Pedestrians, cyclists, wheelchair users and equestrians.
Non-prime land	Agricultural land of Land Capability for Agriculture (LCA) classes 3.2 to 7.
Option Sifting	Option Sifting is a process that should be undertaken when a large number of options have been generated or where there is general consensus that a particular option or options generated will clearly not achieve the intended objectives or meet the identified transport problems and/or opportunities. The approach or basis for sifting options should be agreed with decision-makers.

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Place	The Place Principle recognises that: Place is where people, location and resources combine to create a sense of identity and purpose and is at the heart of addressing the needs and realising the full potential of communities. Places are shaped by the way resources, services and assets are directed and used by the people who live in and invest in them. A more joined-up, collaborative, and participative approach to services, land and buildings, across all sectors within a place, enables better outcomes for everyone and increased opportunities for people and communities to shape their own lives.
Positive effects	Net positive effects on biodiversity that would be likely to result from a
for biodiversity	development. This terminology is taken from the Planning (Scotland) Act 2019.
Potential Effect	The effect on an aspect of the environment that may occur in the
 	absence of mitigation.
Preliminary Appraisal	The second stage of the STAG process which involves qualitative assessment. The end output of this is a Short List of options. In this stage, A96 Corridor Options are subject to further consideration against the TPOs, the five STAG criteria of Environment, Safety, Economy, Integration, Social Inclusion & Accessibility, relevant impact and duty assessments and deliverability. Consideration is also given to the synergies between different option groupings.
Prime	Agricultural land of Land Capability for Agriculture (LCA) classes 1, 2 and
agricultural land	3.1.
Public Transport	Places which allow for the interchange between one or more different
Interchange	(public/sustainable) mode of transport.
Ramsar site	Ramsar sites are wetlands of international importance, listed under the Convention on Wetlands of International Importance (Ramsar Convention 1971). It is Scottish Government policy to afford them the same protection as European sites.
Receptor	In this context, an element that is susceptible to being affected (either directly or indirectly) by the project. Examples include habitats, species, people, properties, landscape, archaeological remains etc.
Scoping Report	Scoping Reports provide sufficient information about the potential environmental effects to allow the Consultation Authorities to provide an informed view regarding the environmental topics to be included in the SEA. Scoping Reports also provide a proposed methodology to be used for assessing potential environmental effects.
Scottish	Transport Scotland's formal option appraisal toolkit and methodology to
Transport	guide the development and assessment of transport options in Scotland.
Appraisal	STAG provides an evidence-based and objective-led framework for:
Guidance	identifying transport problems and/or opportunities in a study area;
(STAG)	setting objectives to address the transport problems/opportunities and identifying and appraising options in a consistent manner with the
	potential to meet the objectives. STAG is integral to the investment decision making process at the Strategic Business Case stage. The four

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	stages of STAG are: Initial Appraisal Case for Change (formerly Pre-Appraisal), Preliminary Options Appraisal (formerly Part 1), Detailed Options Appraisal (formerly Part 2) and Post-Appraisal (Monitoring and Evaluation).
Secondary	Secondary or indirect effects are effects that are not a direct result of the
effects	plan but occur away from the original effect or as a result of a complex pathway.
Severance	The separation of communities from facilities and services used within their community. Alternatively, in relation to agricultural land, the division of land into separate areas, potentially affecting access or availability for agricultural use.
Sites of Special Scientific Interest (SSSI)	Designated areas of national importance. The aim of the SSSI network is to maintain an adequate representation of all natural and semi-natural habitats and native species in the UK. The site network is protected under the provisions of Sections 28 and 19 of the Wildlife and Countryside Act 1981 as well as the Amendment Act 1985 and the Environmental Protection Act 1990.
Special Area of	An area designated under the EC Habitats Directive to ensure that rare,
Conservation	endangered or vulnerable habitats or species of community interest are
(SAC)	either maintained at or restored to a favourable conservation status.
Special	An area designated under the Wild Birds Directive (Directive
Protection Area (SPA)	74/409/EEC) to protect important bird habitats.
Stakeholder	A person or group that has an investment, share or interest in something.
Strategic Environmental Assessment (SEA)	The process by which information about the environmental effects of proposed plans, policies and programmes are evaluated.
Strategic	A review of the Scottish transport network being undertaken by
Transport	Transport Scotland. It aims to identify a range of potential options of
Projects Review	national significance, which will be taken forward to improve the
(STPR2)	strategic transport network. Through selecting which transport projects
,	of national significance should be progressed, the STPR would also affect
	regional and local transport networks such as the A96 corridor.
Statutory	A number of statutory assessments are being undertaken for the A96
Assessments	Corridor Review. These comprise an Equalities Impact Assessment, Fairer
	Scotland Duty Assessment, Child Rights and Wellbeing Impact
	Assessment and a Partial Business and Regulatory Impact Assessment. A
	Strategic Environmental Assessment is also being undertaken to assess
	and mitigate the transport impacts of options identified through the A96
	Corridor Review. The methods for these assessments have informed the
	Appraisal Framework for the A96 Corridor Review and vice versa.

Sustainable Drainage Systems (SuDS)	SuDS, or sustainable drainage systems are a sequence of water management practices and facilities designed to drain surface water in a manner that will provide a more sustainable approach than what has been the conventional practice of routing run-off through a pipe to a watercourse.
Synergistic effects	Synergistic effects interact to produce a total effect greater than the sum of the individual effects.
Transport Planning Objectives (TPOs)	These seek to capture the essence of the evidence-based problem to be addressed or opportunity being sought. The A96 Corridor Review TPOs have been aligned to those set at the national level in STPR2, which are in turn closely associated with the four priorities, 12 outcomes and 24 policies contained within the Second National Transport Strategy (NTS2).



Acronyms

Abbreviation				
AA	Appropriate Assessment			
ANPR	Automatic Number Plate Recognition			
APR	Annual Progress Report			
AST	Appraisal Summary Table			
AQMA	Air Quality Management Area			
AQO	Air Quality Objective			
BRIA	Business and Regulatory Impact Assessment			
ВТО	British Trust for Ornithology			
CAR	Controlled Activity Regulations			
CCA	Climate Compatibility Assessment			
CCRA3	UK's Third Climate Change Risk Assessment			
CNMA	Candidate Noise Management Area			
CRAM	Corridor Route Assignment Model			
CO ₂	Carbon Dioxide			
CQA	Candidate Quiet Area			
CRWIA	Child Rights and Wellbeing Assessment			
dB	Decibels			
DEFRA	Department for Environment, Food and Rural Affairs			
DfT	Department for Transport			
DRT	Demand Responsive Transport			
EIA	Environmental Impact Assessment			
END	Environmental Noise Directive			
EQIA	Equalities Impact Assessment			
ESG	Environmental, Social and Governance			
FSDA	Fairer Scotland Duty Assessment			
GCR	Geological Conservation Review			
GHG	Greenhouse Gas			
GIS	Geographic Information Systems			
HES	Historic Environment Scotland			



Abbreviation				
HGV	Heavy Goods Vehicle			
HITRANS	Highlands and Islands Transport Partnership			
HRA	Habitats Regulations Appraisal			
IIP	Infrastructure Investment Plan			
KSI	Killed or Seriously Injured			
kt	Kiloton			
LA	Local Authority			
LCT	Landscape Character Type			
LLA	Local Landscape Areas			
LNC	Local Nature Conservation site			
LNR	Local Nature Reserve			
MGV	Medium Goods Vehicle			
NAP	Noise Action Plan			
NCN	National Cycle Network			
Nestrans	North East of Scotland Transport Partnership			
NMA	Noise Management Area			
NO ₂	Nitrogen Dioxide			
NOx	Nitrogen Oxides			
NPF4	The Fourth National Planning Framework			
NRS	National Records of Scotland			
NTS2	The Second National Transport Strategy			
ONS	Office for National Statistics			
PCM	Pollution Climate Mapping			
PES	Preliminary Engineering Services			
PfG	Programme for Government			
PM	Particulate Matter			
PPS	Plans, Programmes and Strategies			
PSED	Public Sector Equality Duty			
QA	Quiet Area			
ROWs	Rights of Way			



Abbreviation					
RSPB	Royal Society for the Protection of Birds				
SAC	Special Area of Conservation				
SEA	Strategic Environmental Assessment				
SEPA	Scottish Environment Protection Agency				
SEqIA	Social and Equality Impact Assessment				
SFRA	Strategic Flood Risk Assessment				
SIMD	Scottish Indicator of Multiple Deprivation				
SNCI	Site of Nature Conservation Interest				
SNIFFER	Scotland, Northern Ireland Forum for Environmental Research				
SPA	Special Protection Area				
SSSI	Sites of Special Scientific Interest				
STAG	Scottish Transport Appraisal Guidance				
STPR2	The Second Strategic Transport Projects Review				
SuDS	Sustainable Drainage System				
TPO	Transport Planning Objective				
TUBA	Transport User Benefits Appraisal				
WFD	Water Framework Directive				



1. Introduction

1.1 Background

- 1.1.1 In August 2021, it was agreed by the Scottish Government to take forward a transport enhancements programme on the A96 corridor that improves connectivity between surrounding towns, tackles congestion and addresses safety and environmental issues.
- 1.1.2 Whilst the current plan is to fully dual the A96 route, it was agreed as part of this process there would be a transparent, evidence-based review of the programme, to include a <u>climate compatibility assessment</u>² to assess direct and indirect impacts on the climate and the environment. Other statutory assessments would also be undertaken which include a Strategic Environmental Assessment (SEA) and Statutory Impact Assessments (SIAs).
- 1.1.3 As it has already received Ministerial consent following a Public Local Inquiry, dualling of the A96 from Inverness to Nairn as well as a bypass of Nairn is separate from the wider A96 review process.
- 1.1.4 The A96 Corridor Review is being carried out in accordance with the Scottish Transport Appraisal Guidance (STAG). STAG is the best practice, objective-led approach to transport appraisal. The transport appraisal has considered all relevant transport modes within the A96 corridor, including active travel, public transport, rail and roads-based transport modes. Adopting STAG also brings the review in line with the same methodology as set out in the Second Strategic Transport Projects Review (STPR2).
- 1.1.5 The A96 Corridor Review is being carried out by design consultants Jacobs AECOM acting on behalf of Transport Scotland. Jacobs AECOM supported Transport Scotland undertaking STPR2. The review considers transport problems and opportunities within the A96 corridor. It also looks at the changing policy context and other key considerations, such as development and growth aims for the corridor and surrounding area. Additionally, it considers the impact of the global climate emergency and the COVID-19 pandemic on how people work and travel within the corridor.

1



1.2 Strategic Environmental Assessment Requirements

- 1.2.1 SEA is a means of systematically assessing Plans, Programmes or Strategies (PPS) that are likely to have significant environmental effects, if implemented. An SEA 'screening' exercise's determined that the A96 Corridor Review could also potentially lead to significant environmental effects in the same way that a PPS could.
- 1.2.2 Under the Environmental Assessment (Scotland) Act 2005 (hereby referred to as 'the Act'), those bodies preparing qualifying Scottish plans are required to undertake a SEA of plans that are likely to have significant environmental effects, if implemented. The Act transposes the requirements of the European Community SEA Directive (Directive 2001/42/EC, 2001).
- 1.2.3 SEA aims to offer greater protection to the environment by ensuring public bodies (in this case, Transport Scotland) and those organisations preparing plans of a 'public character' consider and address the likely significant environmental effects.

1.3 Purpose and Structure of Environmental Report

- 1.3.1 The purpose of the Environmental Report is to present the assessed significant environmental effects of the A96 Corridor Review, including alternatives, in a form suitable for public consultation and use by decision makers.
- 1.3.2 In line with the requirements of Schedule 3 of the Act, the Environmental Report contains the following chapters:
 - Chapter 1 summarises the general background to the A96 Corridor Review and SEA and various impact assessments required for the A96 Corridor Review.
 - Chapter 2 provides a more detailed background and context for the A96 Corridor Review, including the A96 Corridor Review stages.
 - Chapter 3 shows the key relationships between the A96 Corridor Review and other Plans, Programmes and Strategies (PPS), including the environmental requirements associated with them.
 - Chapter 4 provides a summary of the environmental baseline.
 - Chapter 5 describes the approach to stakeholder engagement and consultation throughout the development of the A96 Corridor Review and the SEA.
 - Chapter 6 describes the approach for undertaking the SEA.
 - Chapter 7 provides a summary of the assessment findings.
 - Chapter 8 describes examples of mitigation measures required to avoid or minimise any significant negative effects that would arise from implementing the transport interventions contained within the A96 Corridor Review and enhancement measures to create and maximise positive environmental effects.
 - Chapter 9 provides an overview of the monitoring required for any significant



environmental effects.

- Chapter 10 summarises the next steps required in the SEA process.
- Appendix A contains the constraints plans, depicting nationally or internationally significant environmental designations.
- **Appendix B** contains a comprehensive review of the PPS that are summarised in **Chapter 3** of this report.
- Appendix C contains the detailed environmental baseline data, which is summarised in Chapter 4 of this report.
- Appendix D contains the SEA Scoping Report consultation feedback and how the SEA was updated in response to this feedback.
- Appendix E contains the assessment of the A96 Corridor Review Preliminary Appraisal Options, Full Dualling and Detailed Appraisal Packages.
- 1.3.3 A <u>Non-Technical Summary</u> of this Environmental Report is being consulted on alongside this Draft Environmental Report.

1.4 Background to the A96 Corridor Review SEA

- 1.4.1 In 2015, a Design Manual for Roads and Bridges (DMRB4) Stage 1 Assessment for the initial development and assessment of broadly defined improvement strategies for the upgrade of the A96 to an all-purpose dual carriageway was published. A two-phased A96 Dualling Programme Strategic Environmental Assessment (SEA) was also carried out at this time, with two separate Environmental Reports published in 20145 and 20156. The 2014 Environmental Report was the first phase, named Tier 1, which included the findings of the STAG appraisal. The 2015 Tier 2 Environmental Report presents the findings of the SEA of the Preliminary Engineering Services (PES) improvement strategies. It also summarises all SEA work undertaken on the A96 Dualling Programme up to that point. The A96 Dualling Programme SEA Post Adoption Statement was published in 20167.
- 1.4.2 Due to the requirement for a transparent, evidence-based review of A96 transport options (see Section 1.1), there was a need to undertake a new SEA Screening in 2022, to assist in the determination as to whether an SEA was required. This <u>SEA Screening Report</u>, included as Appendix A of the <u>SEA Scoping Report</u>, concluded that a new SEA would be required, to establish the potentially significant environmental effects of the A96 Corridor transport improvements. However, some of the data and methodology from the previous <u>SEA</u> ¹⁰ has been incorporated into this SEA, as described in Chapter 5.

3



1.5 Related Assessments

- 1.5.1 Where not already covered by assessments for other PPS, the A96 Corridor Review is accompanied by other impact assessments. These comprise this SEA, as described in Section 1.4, a strategic-level Habitats Regulations Appraisal (HRA), and a non-statutory Climate Compatibility Assessment.
- 1.5.2 The need for various other assessments, including an Equalities Impact Assessment (EqIA)¹¹, Fairer Scotland Duty Assessment (FSDA)¹² and Child Rights and Wellbeing Assessment (CRWIA)¹³ was determined through consultation on a separate Social and Equalities Impact Assessment Scoping Report. A Partial Business and Regulatory Impact Assessment (BRIA)¹⁴ has also been prepared. The Equality Impact Assessments and the Partial BRIA will be published for consultation at the same time as this Draft Environmental Report. An Island Communities Impact Assessment (ICIA) has not been undertaken due to the geographic location of the A96 corridor.
- 1.5.3 The results of these related impact assessments are summarised in section 7.6 of this report.



2. A96 Corridor Review Summary

2.1 Purpose of A96 Corridor Review

2.1.1 As the Scottish Government's current plan is to fully dual the A96 route between Inverness and Aberdeen, it was considered appropriate that it progressed to the Detailed Appraisal stage, as it has already been the subject of the appraisal undertaken in 2014 that established the Inverness to Aberdeen Corridor Study A96 Dualling Inverness to Aberdeen Strategic Business Case. The Preliminary and Detailed Appraisal stages are discussed in Section 2.4.

2.2 A96 Corridor Review Objectives

- 2.2.1 Transport Planning Objectives (TPOs) are of central importance to the STAG process. In line with STAG, TPOs should align with the outcomes sought by the study, be based on a comprehensive and evidenced understanding of problems and opportunities and lend themselves to inform a clear and transparent appraisal of transport options. The TPOs are a key element of the appraisal process from initial option identification and sifting, through to preliminary and detailed appraisal and subsequent monitoring/evaluation.
- 2.2.2 For the A96 Corridor Review, TPOs have been aligned to those set at the national level in STPR2, supported by corridor specific sub-objectives. An overarching set of TPOs have been established as part of STPR2, which are closely aligned with the four priorities, 12 outcomes and 24 policies contained within NTS2. To reflect the nature of the corridor, the overarching TPOs have been amended slightly from the national-level STPR2 objectives.
- 2.2.3 A series of sub-objectives have been developed to align with the overall direction of the TPOs (and hence the STPR2 national objectives), but with a particular focus on the specific evidence-based problems and opportunities for the corridor. The A96 Corridor Review TPOs and sub-objectives are as follows:
 - TPO 1 A sustainable strategic transport corridor that contributes to the Scottish Government's net zero emissions target.
 - Reduce transport related emissions through a shift to more sustainable modes of transport.
 - o Increase the active travel mode share for shorter everyday journeys.
 - TPO 2 An inclusive strategic transport corridor that improves the accessibility of public transport in rural areas for access to healthcare, employment and education.
 - Increase public transport mode share by improving connections between sustainable modes of transport.
 - Reduce the reliance on private car for access to healthcare, employment and education.

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- Improve mobility and inclusion, recognising the specific needs of disadvantaged and vulnerable users.
- TPO 3 A coherent strategic transport corridor that enhances communities as places, supporting health, wellbeing and the environment.
 - Reduce demand for unsustainable travel by enhancing place making within settlements along the A96.
 - Increase active travel mode share for both shorter and longer distance journeys.
 - Reduce real and perceived severance caused by the strategic transport network both between and within communities.
 - o Protect or enhance the natural environment and heritage.
- TPO 4 An integrated strategic transport system that contributes towards sustainable inclusive growth throughout the corridor and beyond.
 - Increase sustainable access to labour markets and key centres for employment, education and training.
 - o Increase the mode share of freight by sustainable modes.
 - Increase competitiveness of key sectors by improving journey time reliability for commercial transport.
- TPO 5 A reliable and resilient strategic transport system that is safe for users.
 - Reduce the accident rates and severity of transport related casualties in line with reduction targets.
 - Improve resilience to disruption (from climate change events and maintenance activities) through adaptation of the corridor's trunk road and rail infrastructure.

2.3 A96 Corridor Overview

2.3.1 The Inverness to Aberdeen transport corridor passes through the council areas of Highland, Moray, Aberdeenshire and Aberdeen City. The corridor includes a number of settlements, including Inverness, Nairn, Forres, Elgin, Fochabers, Keith, Huntly, Inverurie, Kintore, and Aberdeen. These settlements are linked by the A96 Trunk Road, which provides strategic road connectivity between urban and rural areas. The surrounding environment is predominantly rural, with extensive areas of agricultural land, a number of sensitive designated natural heritage areas and a significant number of cultural heritage features, including battlefields, scheduled monuments and listed buildings. The corridor is subject to flood risk from surface water and coastal flooding.

2.4 STAG Appraisal

2.4.1 The appraisal process for the A96 Corridor Review is being carried out in four key stages undertaken in accordance with STAG. This comprises both the approach and outcomes of the appraisal process at each of these stages.

- 2.4.2 STAG defines a multi-criteria framework that appraises options' ability to meet the TPOs and appraises their performance against the five STAG criteria and established policy objectives. The appraisal also covers the 'deliverability' of options through identifying their feasibility, affordability and public acceptability. The A96 Corridor Review Case for Change 15 has already been completed and published on the Transport Scotland website.
- 2.4.3 The STAG stages to be completed for the review are:
 - Preliminary Options Appraisal this comprised a qualitative appraisal of the options retained from the Option Sifting stage (presented in the Case for Change) against the project specific TPOs, STAG criteria, established policy objectives and deliverability. As part of the A96 Corridor Review, the SIAs undertaken in parallel to the transport appraisal have also informed the options appraisal. Further details on the Preliminary Appraisal are presented in Chapter 3 of the Strategic Business Case Transport Appraisal Report (Draft)
 - Detailed Appraisal the options remaining from the Preliminary Appraisal were progressed to the Detailed Appraisal stage. The appraisal at this stage transitioned from the qualitative approach adopted at the Preliminary Appraisal stage, to more quantitative appraisal elements where possible. Further details on the Detailed Appraisal are presented in Chapter 5 of the Strategic Business Case Transport Appraisal Report (Draft).
 - Monitoring and Evaluation Plan to determine the success of the implemented option in achieving the TPOs, performance against STAG criteria and any impacts on established policy objectives. A plan for monitoring (gathering and interpreting information on the performance of any implemented intervention) and evaluation (identification of whether the implemented intervention is performing as intended) should be set out prior to implementation of any deliverable. Although the development of a Monitoring and Evaluation plan forms part of STAG, for consistency with the STPR2 it was agreed that this would not be undertaken at this stage as part of the transport appraisal for the A96 Corridor Review.
- 2.4.4 The SEA has informed and been informed by the environmental assessment in the environmental and climatic factors sections of both the Preliminary and Detailed Appraisal Summary Tables (ASTs), which summarise the potential environmental impacts of each sifted STAG option at the Preliminary Appraisal stage and each package of interventions and Full Dualling at the Detailed Appraisal stage. The rating and narrative of this STAG environmental assessment is presented in Appendix E of this Environmental Report. The assessment of the packages and Full Dualling in the SEA may differ slightly from the STAG environment criterion rating, as the assessment for the SEA includes additional objectives that fall under the Population and Human Health topic that are not considered in the STAG assessment.



2.5 Overview of STAG Options

Option Development Process

2.5.1 In keeping with the principles of STAG, the Initial Appraisal: Case for Change provided a robust method to generate, 'clean' and sift options; ensuring a broad range of options across all modes was initially considered. The approach to the generation of transport interventions for the A96 Corridor Review is summarised below.

2.5.2 **Long List Generation**

- **Input**: Project team workshop, stakeholder workshops, review of previous studies and online survey feedback
- Who: Jacobs AECOM A96 Corridor Review Transport Team
- Purpose: Collect all submissions in one list for cleaning and processing
- Review: Self check by Jacobs AECOM A96 Corridor Review Transport Team
- Output: Long List of Options

2.5.3 **Cleaned Long List**

- Input: Long List of Options
- Who: Jacobs AECOM A96 Corridor Review Transport Team
- **Purpose**: Cleaning, removing duplicates, consolidating/ defining descriptions and high sense check
- Review: Self check by Jacobs AECOM A96 Corridor Review Transport Team
- Output: Cleaned Long List

2.5.4 Shifted Short List

- Input: Cleaned Long List
- Who: Jacobs AECOM A96 Corridor Review Transport Team
- Purpose: Access cleaned long list of options against agreed sifting criteria
- Review: Self check by Jacobs AECOM A96 Corridor Review Transport Team
- Output: Shifted List (with rationale for sifted out options. Flag options for further consideration. Recommend single mode packages)



2.5.5 Mode Specialist Review

• Input: Shifted List

• Who: Jacobs AECOM A96 Corridor Review Transport Team

- Purpose: To apply specialist knowledge to each option and further refine the sifting process
- Review: Jacobs AECOM A96 Corridor Review Transport Team and modal specialists
- Output: Refined Sifted List

Generation of Long List of 'Options'

- 2.5.6 The long list of initial transport option suggestions was generated based on submissions received from a range of sources, including a review of options identified from previous studies, as well as stakeholder workshops and the public consultation survey. The public consultation survey, where respondents could put forward up to five suggestions, resulted in approximately 10,700 suggestions to be considered. Options were also generated by the Jacobs AECOM A96 Corridor Review project team as part of the process.
- 2.5.7 Overall, the total number of submissions to be considered was approximately 11,091.

Option Cleaning

- 2.5.8 Within the 11,091 individual suggestions, there was a significant number that were either duplicate entries, or were too vague or ambiguous without further definition, or were submissions that could not be considered an 'option' (for example, those submissions that referenced non-transport related items). As such, an exercise was undertaken to 'clean' the long list.
- 2.5.9 Duplicate entries were identified, with a single 'master option' identified to represent all duplicated options. For example, there was a very high proportion of duplicate options for full or partial dualling of the A96 and bypasses. Removing these duplicates significantly lowered the total number of options retained for consideration as part of the subsequent sifting process.
- 2.5.10 Those submissions that could not be considered as options, either as a result of not being sufficiently well defined or being non-transport related items, were removed from the subsequent sifting process.
- 2.5.11 Following on from this cleaning process, a total of 227 options were retained as part of the 'cleaned' long list of options that formed the input to the Option Sifting process.

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Option Sifting

- 2.5.12 Options were sifted out at this stage for one or more of the following reasons:
 - The option was out of scope based on the agreed set of definitions for the A96 Corridor Review
 - The option would not address the problems/opportunities in the region.
 - The option would incur significant deliverability risks.
 - The option is being progressed elsewhere, including through STPR2 at a national level, and this would be the most appropriate mechanism by which to progress this option.
 - The problems/opportunities would be better addressed through another option.
 - The option was rationalised with another, similar option.
- 2.5.13 Of the options retained, those that were similar or shared common elements were rationalised with each other to form the final list of retained options. A total of 227 options were considered, of which 177 were sifted out, leaving 50 options. Of these 50 options, 34 options were rationalised, leaving a final 'short list' of 16 options.

2.6 Appraisal Process

- 2.6.1 Following the sifting exercise, 16 options specific to the A96 Corridor Review remained in the process and were recommended to be progressed to Preliminary Appraisal.
- 2.6.2 Early in the Preliminary Appraisal process it was identified that the Active Hubs option would clearly align with and sit within STPR2 recommendation 22 (Framework for Delivery of Mobility Hubs). It was determined that STPR2 would be the most appropriate mechanism by which to progress this option at a national level. As such, the appraisal of Active Hubs was not completed within the A96 Corridor Review, and outcomes are therefore not presented in this chapter.

A96 Full Dualling

2.6.3 As the A96 Full Dualling is the current plan it is considered appropriate that it progresses to the Detailed Appraisal stage, as it has already been the subject of the appraisal undertaken in 2014 that established the Inverness to Aberdeen Strategic Business Case.

- 2.6.4 The A96 Full Dualling has been appraised as part of the Detailed Appraisal in order to assess its performance against current appraisal criteria including the Transport Planning Objectives developed for the A96 Corridor Review, the current STAG criteria and the relevant Statutory Impact Assessments. The complete environmental assessment of Full Dualling at the Detailed Appraisal stage is provided in Appendix E (Assessment Matrices) and the outcomes of this assessment are presented in Chapter 7.
- 2.6.5 It should be noted that the A96 Inverness to Nairn (including Nairn Bypass) scheme has been excluded from the scope of the A96 Corridor Review as it already has ministerial consent. In the context of the A96 Corridor Review, the A96 Full Dualling therefore comprises the section of the route from Hardmuir (to the East of Nairn) through to the junction with the Aberdeen Western Peripheral Route (AWPR) at Craibstone.

Retained Options

2.6.6 Table 2.1 lists and describes the 16 retained options.

Table 2.1: List of Retained Options

Option	Mode of Transport	Description			
Active Communities	Active Travel	Deliver networks of high-quality active travel routes and placemaking improvements within ker communities along the A96 corridor such as Nairn, Forres, Elgin, Fochabers, Keith, Huntly and Inverurie.			
Active Connections	Active Travel	Deliver high quality active travel linkages for people walking, wheeling and cycling between settlements along the A96 corridor, which would combine to form a continuous traffic-free path all the way from Inverness to Aberdeen, either directly adjacent to, or close to, the A96.			
Active Hubs	Multimodal	The creation of a strategy for the delivery of active hubs within communities across the length of the A96 corridor.			
Improved Public Transport Passenger Interchange Facilities	Multimodal	Improve public transport passenger facilities, including accessibility and quality enhancements at bus stations and railway stations.			

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Option	Mode of Transport	Description			
Bus Priority Measures and Park and Ride	Bus	Implement schemes targeted at delivering faster and more reliable journey times for bus passengers, coupled with the provision of new bus Park and Ride sites where appropriate.			
Investment in Demand Responsive Transport (DRT) and Mobility as a Service (MaaS)	Public Transport	Improve access to travel opportunities in locations with low bus network connectivity or where conventional fixed route services may not be suitable or viable. In these areas, flexible services, such as Demand Responsive Transport (DRT) or Community Transport (CT), may be able to provide improved public transport links.			
Introduce Rail Freight Terminals	Freight	Facilitate the introduction, development and operation of rail freight terminals by the private sector at Inverness, Elgin and Keith, to facilitate freight movements to/from these locations by rail.			
Linespeed, Passenger and Freight Capacity Improvements on Aberdeen to Inverness Rail Line	Rail	Three distinct improvements to the railway between Aberdeen and Inverness; linespeed improvements to cut journey times, the provision of passing loops to enable a more frequent passenger service and the provision of freight facilities to enable intermodal freight to operate.			
Improved Parking Provision at Railway Stations	Rail	Enhance parking facilities at railway stations between Aberdeen and Inverness with the aim of encouraging the use of existing low carbon infrastructure for medium and long distance travel along the corridor.			
A96 Full Dualling (plus Targeted Trunk Road Improvements)	Road	Full Dualling of the A96 between Hardmuir to Craibstone to address road safety concerns and provide resilience and reliability improvements for a key connection between Inverness and Aberdeen.			
Targeted Road Safety Improvements	Road	Improving the safety performance of the A96 Trunk Road to address both real and perceived road safety concerns (with potential measures ranging from minor improvements through to partial dualling).			



Option	Mode of Transport	Description			
Elgin Bypass	Road	Improve the safety, resilience, and reliability of the A96 within the vicinity of Elgin through the provision of a bypass of the town.			
Keith Bypass	Road	Improve the safety, resilience, and reliability of the A96 within the vicinity of Keith through the provision of a bypass of the town.			
Inverurie Bypass	Road	Improve the safety, resilience, and reliability of the A96 within the vicinity of Inverurie through the provision of a bypass of the town.			
Forres Bypass	Road	Improve the safety, resilience, and reliability of the A96 in Forres through the provision of a bypass within the vicinity of the town.			
A96 Electric Technology Corridor		Provision of alternative refuelling infrastructure and facilities along the A96 corridor, its interfacing local roads as well as, where appropriate, strategic economic and transport hubs. This option will directly facilitate the dispensation of alternative sources of fuel for various modes of sustainable transport although it is recognised that the option is likely to focus on road vehicles.			

- 2.6.7 From the Preliminary Appraisal, 13 options were progressed to the Detailed Appraisal stage. In recognition that the retained options covered a range of transport modes and therefore would provide a greater net benefit if combined as a package rather than as standalone options, four multimodal packages were originally developed using an 'area-based' approach. These packages were developed to group options that would work in combination to meet the TPOs and thus address the identified problems and opportunities for the corridor. The area-based approach was adopted to develop multimodal packages to suit the varying needs of local communities and businesses along the transport corridor, and ensured no areas were unduly prioritised over others.
- 2.6.8 As the appraisal progressed, a fifth package was developed and added to the appraisal process. This package comprises all of the options that progressed from the Preliminary Appraisal to create an 'all in' package across the corridor.
- 2.6.9 The Detailed Appraisal at this stage appraised these five packages rather than individual options. The five packages that were appraised at this stage are:

- Package 1 relating to those towns along the A96 that contain an option to bypass as brought forward from the Preliminary Appraisal, specifically Forres, Elgin, Keith and Inverurie. This also includes Nairn as it is to be bypassed as part of the separate A96 Dualling Inverness to Nairn (including Nairn Bypass) scheme that has ministerial consent. In addition, this package focuses on delivering networks of high-quality active travel routes and placemaking improvements within the bypassed settlements. Public transport interventions are also included, targeted at delivering faster and more reliable journey times as well as improving the overall passenger experience. As part of the public transport interventions, the rail network would see linespeed, passenger and freight capacity improvements delivered for the Aberdeen and Inverness rail line. This package also includes the provision of alternative refuelling infrastructure and facilities throughout the A96 corridor, seeking to encourage a shift from internal combustion engine (ICE) vehicles.
- Package 2 relating to other settlements along the A96 where a bypass is not considered, namely Lhanbryde, Mosstodloch, Fochabers, Huntly, Kintore and Blackburn. This package focuses on delivering networks of high-quality active travel routes and placemaking improvements and public transport interventions, targeted at delivering faster and more reliable journey times. As part of the public transport interventions, the rail network would see linespeed, passenger and freight capacity improvements delivered for the Aberdeen and Inverness rail line. This package also includes the provision of alternative refuelling infrastructure and facilities throughout the A96 corridor, seeking to encourage a shift from ICE vehicles. Targeted road safety improvements, to address both real and perceived safety concerns on the A96 Trunk Road are also included.
- Package 3 relating to more rural sections between settlements. This package seeks to address both real and perceived safety concerns on the A96 Trunk Road through targeted road safety improvements, while delivering public transport interventions, targeted at faster and more reliable journey times. As part of the public transport interventions, the rail network would see linespeed, passenger and freight capacity improvements delivered for the Aberdeen and Inverness rail line. This package also aims to deliver networks of high-quality active travel routes between settlements along the A96 corridor. This package also includes the provision of alternative refuelling infrastructure and facilities throughout the A96 corridor, seeking to encourage a shift from ICE vehicles.
- Package 4 relating to longer distance components that may not be fully captured in the above three packages, including end-to-end movements. This package would provide high-quality active travel routes linking settlements along the A96 corridor while delivering public transport interventions targeted at delivering faster and more reliable journey times. As part of the public transport interventions, the rail network would see linespeed, passenger and freight capacity improvements delivered for the Aberdeen and Inverness rail line. This package also includes the provision of alternative refuelling



infrastructure and facilities throughout the A96 corridor, seeking to encourage a shift from ICE vehicles. The package would also deliver targeted safety improvements aiming to address both real and perceived safety concerns on the A96 Trunk Road.

- Package 5 comprising all options brought forward from the Preliminary Appraisal. The multimodal package would provide bypasses of Forres, Elgin, Keith and Inverurie, with targeted road safety improvements delivered elsewhere along the A96 Trunk Road. The package would deliver networks of high-quality active travel routes within and between settlements along the A96 corridor. Public transport proposals would be included to enhance the accessibility and quality of interchange facilities and bus priority measures to provide quicker and more reliable journeys, along with linespeed, passenger and freight capacity improvements for the Aberdeen to Inverness rail line. This package also includes the provision of alternative refuelling infrastructure and facilities throughout the A96 corridor and investment in a Demand Responsive Transport (DRT) and MaaS pilot study.
- 2.6.10 Although each package was appraised individually, where appropriate and relevant, a number of individual options are included in more than one package.
- 2.6.11 An assessment of the benefits and contribution of the individual options to the performance of the overall packages was undertaken as part of the STAG appraisal. This has included additional detailed assessment using the available transport models to examine the impact of those options that could be represented in the models on an individual basis and determine what proportion of the total benefits they would provide.
 - 2.6.12 The additional assessments allowed the better performing options to be identified and these were combined to form an additional package, referred to as the Refined Package. This package was developed to maximise the level of potential benefits provided by combining the best performing options, whilst optimising investment within the corridor and delivering value for money.
- 2.6.13 The transport interventions included in each package are outlined in Table 2.2.



Table 2.2 A96 Corridor Review Transport Packages and Interventions

	Package 1	Package 2	Package 3	Package 4	Package 5	Refined Package
Active Communities	1	1		✓	1	✓
Active Connections			1	1	1	
Bus Priority Measures and Park & Ride	~	~	~		~	
Improved Public Transport Passenger Interchange Facilities	~	~		~	~	~
Investment in DRT and MaaS	1	1	1		1	✓.
Introduce Rail Freight Terminals				1	1	
Linespeed, Passenger and Freight Capacity Improvements on the Aberdeen to Inverness Rail Line	~	√	~	~	~	√
Targeted Road Safety Improvements		~	~	~	~	✓
Forres Bypass	✓				✓	
Elgin Bypass	1				1	✓
Keith Bypass	✓				✓	✓
Inverurie Bypass	1				✓	
A96 Electric Corridor	✓	✓	✓	✓	✓	✓



2.7 Future Appraisal Scenarios

- 2.7.1 It is recognised that external factors that are out of the direct control or influence of Transport Scotland can have a large influence on future demand for travel. Transport Scotland took the decision to adopt a scenarios approach in STPR2, which looks at a range of possible futures, and how the possible options behave in them.
- 2.7.2 The scenarios that were developed for STPR2 have also been applied to the options appraisal for the A96 Corridor Review. For the Preliminary Appraisal, and subsequent Detailed Appraisal, the following two scenarios with their inherent variants of transport behaviour were considered:
 - 'With Policy Scenario' captures policy ambitions including 20% reduction (from 2019 levels) in car kilometres travelled by 2030, and assumptions to significantly reduce levels of commuting/business journeys to reflect post COVID-19 working behaviours, leading to low levels of motorised traffic demand and emissions.
 - 'Without Policy Scenario' no policy ambitions are captured, and less significant reductions to levels of commuting/business journeys, leading to higher levels of motorised traffic demand and emissions.
- 2.7.3 These scenarios were developed using the Transport Model for Scotland (TMfS18) and the Transport and Economic/Land Use Model of Scotland (TELMoS18) for use in the appraisal stages of STPR2, and subsequently the A96 Corridor Review.
- 2.7.4 Further detail on the development of the future appraisal scenarios can be found in Appendix A of the Strategic Business Case Transport Appraisal Report (Draft) 17.
- 2.7.5 At the Preliminary Appraisal stage, each option has been appraised against a qualitative assessment of how the option could be expected to perform under a low and higher motorised travel demand.

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3. Legislative and Policy Context

3.1 Policy Context

3.1.1 The A96 Corridor Review is undertaken within the context of national, regional and local Plans, Programmes and Strategies (PPS) in Scotland. A comprehensive review of PPS from national, regional and local levels is provided in Appendix B (Plans, Programmes and Strategies Review). A summary of the key PPS is provided in the following sections.

3.2 National Planning Framework 4 (NPF4)

- 3.2.1 The Scottish Government's 2022-2023 Programme for Government highlights the significance of the National Planning Framework to put planning at the heart of delivering green, inclusive and long-term sustainable development in Scotland. The National Planning Framework includes a long-term spatial strategy to 2045. This reflects the range of Scottish Government policies, including the Infrastructure Investment Plan (IIP) 2021-22 to 2025-26. It will guide spatial development, set out national planning policies, designate national developments and highlight regional spatial priorities.
- 3.2.2 NPF4 was adopted on 13 February 2023 and sets out a need to "embrace and deliver radical change to tackle and adapt to climate change, restore biodiversity loss, improve health and wellbeing, build a wellbeing economy and create great places". NPF4 recognises the need to plan our places in a way that reduces the need to travel, especially by unsustainable modes, and promotes a shift to active and sustainable travel.
- 3.2.3 NPF4 embeds, for the first time, the NTS2 Sustainable Travel Hierarchy and Sustainable Investment Hierarchy into planning decision making and development planning. The NPF4 spatial strategy sets out a local living approach whereby future places, homes and neighbourhoods will be connected, liveable, thriving places with sustainable travel options and where car dominance is reduced.
- 3.2.4 To meet many of the future needs of society, it is crucial that services and facilities are easily and affordably accessed. Therefore, NPF4 advocates the infrastructure-first approach in planning for future development to provide communities with the opportunity to travel sustainably from the outset.
- 3.2.5 The A96 corridor broadly falls between two regional spatial priority areas identified in NPF4, the north-east and the north. The north-east, has a strategy to:
 - plan infrastructure and investment to support the transition from oil and gas to net zero whilst protecting and enhancing blue and green infrastructure and decarbonising connectivity



- focus on continued regeneration through the principles of local living and 20minute neighbourhoods to sustain the skilled workforce and improve local liveability
- support continued economic diversification and innovation.
- 3.2.6 The North Regional Spatial Priority Area has a strategy to:
 - protect environmental assets and stimulate investment in natural and engineered solutions to climate change and nature restoration, whilst decarbonising transport and building resilient connections
 - maintain and help to grow the population by taking a positive approach to rural development that strengthens networks of communities
 - support local economic development by making sustainable use of the areas world-class environmental assets to innovate and lead greener growth.
- 3.2.7 NPF4 also sets out 'The Six Qualities of Successful Places':
 - Healthy
 - Pleasant
 - Connected
 - Distinctive
 - Sustainable
 - Adaptable.
- 3.2.8 The A96 is identified within NPF4 Annex C Spatial Planning Priorities as a key route to be adapted and improved. The NPF4 states that roads will continue to be arteries upon which local communities and businesses depend. It also refers to the need to adapt key routes due to the impacts of climate change, create a strong network of charging points, and the need to improve safety on the A96.

3.3 National Transport Strategy 2 (NTS2)

- 3.3.1 In February 2020, NTS2 was published, outlining an updated vision over a 20-year period for a transport system which is a "sustainable, inclusive, safe and accessible transport system, helping deliver a healthier, fairer and more prosperous Scotland for communities, businesses and visitor" 2020 (p.4).
- 3.3.2 The vision is underpinned by four priorities:
 - Reducing inequalities through the provision of fair, easy and affordable access to transport services.
 - Taking climate action by ensuring Scotland's transport system helps deliver the Scottish Government's net zero carbon emission target by 2045, adapts to the effects of climate change and promotes the use of sustainable travel options.

- Delivering inclusive economic growth by ensuring Scotland's transport network and services will be effectively integrated with spatial and land use planning and economic development, adapt to the changing requirements of citizens, businesses and visitors, provide reliable journey times, and use new and innovative products, services and technologies.
- Improving health and wellbeing by prioritising the prevention and reduction of incidents, promoting active travel and creating cleaner and greener places and networks within the transport system.
- 3.3.3 NTS2 outlines the Sustainable Transport Hierarchy, and the Sustainable Investment Hierarchy as measures which will guide and influence decisions on transport priorities. The Sustainable Transport Hierarchy promotes and prioritises active travel and public transport above shared and private transport options. The Sustainable Investment Hierarchy requires that measures to reduce the need to travel unsustainably and to maintain and safely operate existing assets are priorities above measures to make better use of capacity and undertake targeted infrastructure improvements.
- 3.3.4 More specific to the A96 transport corridor, current policies and strategies demonstrate a focus on strengthening and enhancing multimodal connections through targeted infrastructure investment, particularly for underserved rural areas. These multimodal connections will play an important role in supporting both the emerging and future planned growth as set out in regional and local development plans. Improvements to both the trunk road and rail network are also highlighted as being essential to facilitate a sustainable and just transition towards meeting the ambitious climate change targets as set by Scottish Government. Safety and congestion concerns are also identified at the regional and local level in the relevant development plans and transport strategies along the length of the transport corridor.
- 3.3.5 The relationship between the A96 Trunk Road and local communities and businesses is identified as being pivotal. Any enhancement of the current transport corridor will contribute towards successfully achieving strategic objectives and priorities for transport and other complementary sectors.

3.4 Strategic Transport Projects Review 2 (STPR2)

- 3.4.1 The second strategic transport review will inform transport investment in Scotland and help to deliver the visions, priorities and outcomes set out in the NTS2. Covering a 20-year period (2022-2042), STPR2 takes into consideration the transport needs of communities across Scotland, examining provisions available for active travel (walking, cycling, wheeling) as well as bus, rail, road and ferry links for both commercial and personal use.
- 3.4.2 STPR2 has five key objectives that it aims to address:
 - Takes climate action



- Addresses inequalities & accessibility
- Improved health and wellbeing
- Supports sustainable economic growth
- Increases safety and resilience.
- 3.4.3 Public consultation on the STPR2 Technical Report and its accompanying SEA ¹⁸ ended in April 2022. The final STPR2 SEA Environmental Report and Post Adoption Statement were published in December 2022.

3.5 Climate Change Plan Update

- 3.5.1 The Scottish Government published "Securing a Green Recovery on a Path to Net Zero: Climate Change Plan 2018–2032 update" in December 2020 which reflects the ambition of the new targets set in the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019. These comprise the reduction of Scotland's greenhouse gas (GHG) emissions to net zero by 2045 at the latest.
- 3.5.2 By 2045 the vision, in line with NTS2, includes "having a sustainable, inclusive, safe and accessible transport system, helping deliver a healthier, fairer and more prosperous Scotland for communities, business and visitors" (p.118).

3.6 Reducing Car Use for a Healthier, Fairer and Greener Scotland

- 3.6.1 In January 2022, the Scottish Government and the Convention of Scottish Local Authorities (COSLA) developed a route map to deliver the shift in travel behaviours required to meet the 20% car kilometres reduction target, recognising the need for ongoing collaboration and partnership working between national, regional and local government as well as public, private and third sector partners ²⁰. The route map sets out the suite of policies from across Government that may be implemented to support car-use reduction in order to both address climate change and deliver a healthier, fairer and more prosperous Scotland, and recognises the role of STPR2 in setting out recommendations for future investment decisions.
- 3.6.2 Successful implementation of the actions set out in the route map are expected to lead to a transformational way of living in Scotland, where a new localism thrives in villages, towns and city neighbourhoods; where streets become places that are safe for people of all ages to travel by walking and cycling whilst maintaining private vehicle access for those with disabilities; where longer journeys are made by convenient and affordable public or shared transport; and with greater use of online access to key services and opportunities. This future will both enable statutory climate change targets to be met, whilst at the same time creating better ways of living, improved health and wellbeing and the associated social and economic benefits of a society less dominated by private cars.



3.6.3 The A96 Corridor Review will need to consider how the transport interventions within the study area will help reduce car kilometres by 20% by 2030, highlighting the benefits of implementing these targets.

3.7 Regional Transport and Planning Strategies

Regional Transport Strategy for the North East of Scotland 2040 (Nestrans)

- 3.7.1 Published in November 2021, Nestrans is the Regional Transport Partnership for the North East of Scotland. It is a long-term strategy which sets the vision for transport in the region for the next 20 years. Nestrans' vision is "to provide a safer, cleaner, more inclusive, accessible and resilient transport system in the North East, which protects the natural and built environment and contributes to healthier, more prosperous and fairer communities" (p.22).
- 3.7.2 Prioritising sustainable transport is a key theme running through the Nestrans strategy, promoting active travel, and reducing the need for private cars both underpin the climate considerate approach to travel. COVID-19 and the impact this has had upon travel patterns is being continually monitored so that there can be agile and informed responses to both short-term and long-term travel use in the region.

The Highlands and Islands Transport Partnership (HITRANS) Regional Transport Strategy (RTS)

3.7.3 The HITRANS RTS looks to support the improved access to transport for the communities it represents, as it recognises the social and economic opportunities this provides. Investment in rail, road, and ferry connections is a key priority of the strategy as they are a lifeline for many of the rural communities in this region. The HITRANS RTS states that each community across the region should expect good transport connections and that the transport services provided in any given area "will be determined by the needs of that community" (p.6).

3.8 Local Transport and Planning Strategies

Moray Council Active Travel Strategy 2022-2027

- 3.8.1 The Active Trave Strategy is a 5 year plan from 2022 to 2027 that aims to harness the increase in walking and cycling.
- 3.8.2 The main actions from this 5 year plan are:
 - Further develop the Active Travel network
 - Develop Active Travel Masterplans for key settlements in Moray
 - Embed Active Travel opportunities within new developments



- Encourage and facilitate walking and cycling as leisure and tourist activities to provide benefits to health and local economy
- Provide new/improved cycle parking/ facilities at key destinations and transport interchanges in Moray
- Work with local employers (including Moray Council) and their staff to encourage more walking and cycling to and from work
- Work with students and school pupils, staff and parents to encourage more walking, cycling and scooting to and from school/ further education
- Continue to seek funding from existing sources and identify new funding opportunities as they emerge to secure funding for Active Travel interventions, as appropriate.

Aberdeen City Local Transport Strategy 2016-2021

- 3.8.3 The Local Transport Strategy for Aberdeen sets out the plan for development of the city's transport network over a five-year period. The strategy follows guidance from national and regional transport plans, policies and strategies considering the relationship transport has with the economy, environment, health, people and communities.
- 3.8.4 Six outcomes of Aberdeen's transport system by 2021 are identified in the strategy as being:
 - increased modal share for public transport and active travel
 - reduced need to travel and reduced dependence on the private car
 - improved journey time reliability for all modes
 - improved road safety within the city
 - improved air quality and the environment
 - improved accessibility to transport for all.

Aberdeenshire Council Local Transport Strategy 2012

- 3.8.5 Aberdeenshire Council's Local Transport Strategy sets out how the council aims to cater for the needs of all transport users across the region and ensuring that, where possible, existing resources and infrastructure are used to their full potential. The strategy was developed with the intention of supporting the delivery of a range of wider strategic transport priorities as set out in the Nestrans Regional Transport Strategy.
- 3.8.6 The following objectives are noted as underpinning the council's strategic priorities:
 - Promote Sustainable Economic Growth
 - Promote Social Inclusion and Accessibility



- Protect the Environment
- Improve Safety
- Improve Integration.
- 3.8.7 Transport 'themes' to include the <u>Aberdeenshire Local Transport Strategy 2023</u> were recently consulted on. If published in time, further information on the Local Trasport Strategy will be included in the Final Environmental Report.

Moray Local Development Plan 2020

- 3.8.8 The Moray Local Development Plan was formally adopted in July 2020 and sets out a vision for development in Moray and provides guidance on development for the period up to 2030.
- 3.8.9 The overall vision for the Moray Local Plan is "People want to live, work and invest in Moray because of the outstanding quality of life and environment"; this is supported by a series of objectives which are described in Appendix B (Plans, Programmes and Strategies Review) of this Environmental Report.
- 3.8.10 Transportation and the provision of high-quality, well-planned transport across Moray is noted as an essential aspect of development that will aid a prosperous future. Investment in public transport and active travel will bring both environmental and health benefits for communities whilst working to address the climate emergency.

Aberdeen Local Development Plan 2023

3.8.11 Aberdeen is Scotland's third largest city and plays an important role in the country in many aspects. The Aberdeen Local Development Plan 2023 was formally adopted by the Council and constituted as part of the statutory Development Plan. It will be used to guide decisions on planning applications alongside Aberdeen Planning Guidance and Supplementary Guidance.

Aberdeenshire Local Development Plan 2023

- 3.8.12 The Aberdeenshire Local Development Plan was adopted in January 2023. The aim of the plan is to help promote Aberdeenshire as:
 - an area with a high quality of life and distinctive places, and where new developments are designed as effectively as possible to improve this, help deliver sustainable, low carbon places and contribute positively towards the health and wellbeing of its residents
 - an area that promotes sustainable development that reduces the need to travel, reduces reliance on private cars and promotes safe and convenient active travel opportunities



 an area where natural and cultural heritage are protected and enhanced, and where we recognise the multiple benefits of local green spaces and green-blue networks as an integral component of successful placemaking.

3.9 Relationship with Other PPS

- 3.9.1 SEA consideration of the A96 Corridor Review, within the context of the most relevant PPS, supports the identification of wider environmental protection objectives and issues that the project should take cognisance of and might support with its delivery.
- 3.9.2 A wide range of national and regional level policies from various PPS need to be considered in the development of the A96 Corridor Review and the SEA. The key relevant aspects of these policies are included in Appendix B (Plans, Programmes and Strategies Review).
- 3.9.3 A review of the associated environmental protection objectives highlights existing and potential problems, as well as opportunities for enhancement and benefits, and has served as an important base upon which to build the SEA objectives and assessment framework.
- 3.9.4 Key Environmental Objectives arising from the PPS Review are summarised below.
- 3.9.5 Air Quality and Climatic Factors
 - Promote and facilitate sustainable and active travel;
 - Reduce GHG emissions to align with the net zero targets and national/ international climate commitments;
 - Adapt to the effects of climate change; and
 - Enhance well-being health environment. Place making and sustainable growth through improved air quality.

3.9.6 Population and Human Health

- Promote sustainable and active travel;
- Improve the quality and connection of transport interventions to reduce inequality and promote inclusivity;
- Improve safety through fewer accidents and casualties;
- Protect citizens from the harmful effects of air pollution; and
- Reduce noise and vibrations associated with the transport network.

3.9.7 Biodiversity



- Protect and enhance the natural environment, wildlife, its habitats and other features, including internationally and nationally designated sites;
- Restore ecosystems and ensure their future protection, reintroducing more resilient local biodiversity;
- Aim to secure positive effects for biodiversity and support nature recovery, restoration and enhance green networks.

3.9.8 Geology and Soils

• Safeguard and maximise the multiple benefits and functions of carbon-rich soils and peat.

3.9.9 Water Environment

- Flood risk management and changing ecosystems must be factored into future development to ensure nature-based adaptation;
- Protect and enhance the water environment through minimising and mitigating impacts upon physical, chemical and biological quality;
- Adapt to the effects of climate change; and
- Safeguard access to ports and harbours and encourage their sustainable growth, to maximise their potential to facilitate cargo and passenger movement and to support other sectors.

3.9.10 Cultural Heritage

• Avoiding detrimental impacts upon and supporting the preservation and management of the historic environment.

3.9.11 Landscape and Visual Amenity

- Protect and enhance the landscape (including the green belt and countryside);
- Ensure that visual amenity and important views are safeguarded; and
- Encourage green infrastructure

3.9.12 Material Assets

- Promote sustainable design and innovation to reduce material consumption;
- Minimise waste generation through recycling and reusing materials; and
- Maintain an enhanced transport infrastructure.

4. Baseline Summary

4.1 Overview

- 4.1.1 Schedule 3 of the Environmental Assessment (Scotland) Act 2005 requires that the following be identified when undertaking a SEA:
 - relevant aspects of the current state of the environment and its likely evolution without the implementation of the plan or programme
 - environmental characteristics of areas likely to be affected
 - relevant existing environmental problems
 - relevant environmental protection objectives at the international, European, or national level.
- 4.1.2 The full national-level environmental baseline, that describes these aspects, is provided as Appendix C (Environmental Baseline), which also contains discrete sections that summarise the likely evolution of the environmental baseline if one of the A96 Corridor Review Detailed Appraisal packages or Full Dualling were not implemented (that is the 'do nothing' or 'without plan' scenario).
- 4.1.3 The SEA study area considered is a 15km-wide corridor (7.5km either side of the existing A96). This corridor was used by the previous A96 Dualling SEA ²¹, described in Section 1.3, and is illustrated in Appendix A (Environmental Figures) and has also been used for the STAG assessment for the environment criterion, as described in Section 2.4. The width and extent of the study area was considered appropriate for an initial high-level review of potential effects on each SEA topic. Four council areas were identified within the 15km-wide study area:
 - The Highland Council
 - Moray Council
 - Aberdeenshire Council
 - Aberdeen City Council
- 4.1.4 Online mapping and publicly available resources have been used to identify environmental constraints and inform the baseline of the study area. Sources used include:
 - Ordnance Survey (OS) maps
 - Scotland's Environment website 22
 - SEPA Water Classification Hub 23
 - SEPA flood maps
 - NatureScot SiteLink 24
 - National Soil Map of Scotland 25



- Historic Environment Scotland website
- Scottish Forestry open data
- Scotland's noise map 26
- local authority GIS data.
- 4.1.5 Internationally and nationally designated sites and key environmental constraints identified from the baseline data collection are shown in Appendix A (Environmental Figures).
- 4.1.6 All of the SEA topics listed in the Environmental Assessment (Scotland) Act 2005 have been 'scoped in' to the A96 Corridor Review SEA, as described in Chapter 6. A summary of the key baseline findings for each SEA topic is provided in Section 4.2.

4.2 Baseline Summaries by SEA Topic

Overview

- 4.2.1 Environmental designations are located throughout the full extent of the A96 Corridor Review SEA study area. The number, frequency and density of environmental designations is notably higher at the western end, particularly between Inverness and Huntly where there are a number of designations covering a large area. The full extent of the Moray Firth coastline within the SEA study area has national environmental protection. The SEA study area crosses the River Spey at Fochabers; the river is designated as a Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar and Site of Special Scientific Interest (SSSI) for much of its length.
- 4.2.2 There are no areas of national landscape protection, such as National Scenic Areas or National Parks, within the SEA study area although the northern boundary of the Cairngorms National Park is approximately 10km to the south.
- 4.2.3 A summary of the key baseline findings for each SEA topic is provided in the following sections.

Climatic Factors

4.2.4 GHG emissions lead to anthropogenic climate change and the transport sector is one of the contributory sources of these emissions. According to the Scottish Transport Statistics 2021, transport accounted for 29.2% of Scotland's total GHG emissions in 2019. The largest source of transport GHG emissions is cars at 38%, followed by HGVs at 25%, and aviation at 16% ²⁷. The proportion of single occupancy car trips also shows an underlying increasing trend, with 66% in 2018 compared with a figure of 65% in 2013 and 60% in 2008 ²⁸.

4.2.5 Over the last few decades, Scotland has experienced a warming trend, shifting rainfall patterns, and rising sea levels ²⁹. The Met Office historic 10-year averages from the stations in Kinloss, Keith and Aberdeen Airport identify gradual warming and increased rainfall between 1961 and 2020 in the study area ³⁰.

Air Quality

- 4.2.6 A review of air quality monitoring data collected within the corridor between 2015 and 2019 for the council administrative areas of Moray ³¹ and Aberdeenshire ³² show that annual mean concentrations of nitrogen dioxide (NO₂) remained stable and well below the Air Quality Objective (AQO) or Limit Value across the years reviewed. Air quality within the Highland Council area ³³ is also generally good, with the exception of the existing Air Quality Management Area (AQMA) declared for the potential exceedance of NO₂ within Inverness city centre, however this is beyond the corridor area.
- 4.2.7 There are no declared AQMAs within the A96 Corridor Review SEA study area, however there are three declared within Aberdeen City Council area, all to the east, and one, as previously discussed in the paragraph above, to the west within Inverness. Anderson Drive AQMA within Aberdeen City was declared for the potential exceedance of annual mean NO₂ and Particulate Matter (PM₁₀) AQOs ³⁴. The AQMA encompasses Haudagain Roundabout and Auchmill Road on the northern fringes of Aberdeen ³⁵, includes the junction between the A96 and A92 and includes part of the A96. As noted above it is beyond the A96 Corridor Review SEA study area.
- 4.2.8 The highest NO_2 concentration relevant to public exposure in 2019 within the A96 Corridor Review SEA study area was $38\mu g/m^3$, which does not exceed the NO_2 AQO or Limit Value. Whilst there is no PM_{10} monitoring data within the A96 corridor area, PM_{10} monitoring is undertaken within the wider Aberdeen City area. The highest PM_{10} concentration in 2019 was $14.0\mu g/m^3$, which is the highest within all the local authorities in the corridor and below the annual mean AQO of $18\mu g/m^3$ and Limit Value of $40\mu g/m^3$. The highest $PM_{2.5}$ concentration in 2019 within all of the local authorities considered is below the annual mean AQO of $10\mu g/m^3$.
- 4.2.9 Mapped background annual mean concentrations of oxides of nitrogen (NOx a precursor for NO₂), NO₂, PM₁₀ and PM_{2.5}, based on a 2018 reference year 36 , projected to 2023 show that background concentrations are below the relevant annual mean AQO or Limit Values, with the exception of the maximum NOx concentration, which is set for the protection of vegetation and ecosystems and is not currently assessed by Scottish local authorities 37 38 .
- 4.2.10 The Pollution Climate Mapping (PCM) model shows that roadside annual mean NO₂ concentrations are predicted to be compliant with Limit Values set by the European Air Quality Directive (EU Directive 2008/50/EC), which was transposed into UK law.



Noise

- 4.2.11 The Environmental Noise (Scotland) Regulations 2006 were introduced in Scotland to implement/transpose European Union, Assessment and Management of Noise Directive 2002/49/EC (known as the Environmental Noise Directive (END)). The aims of the END are to define a common approach in order to avoid, prevent or reduce the harmful effects of environmental noise. Under the Environmental Noise (Scotland) Regulations, three rounds of strategic noise mapping of major roads, railways, airports and agglomerations has been completed across Scotland.
- 4.2.12 Scotland's noise map³⁹ illustrates noise exposure from rail, road, air traffic and industrial sources in accordance with the END. The main sources of noise within the SEA study area are sections of the A96 itself, A941 towards Rothes, A944 towards Kingsford, A940 towards Grantown-on-Spey and B9013 towards Burghead. There are large areas of noise sources within Aberdeen and Inverness, however this is beyond the extent of the study corridor. Sections of the Aberdeen – Inverness rail line are also a contributor of noise in the SEA study area. 55 dB Lden is the EU indicator threshold for noise exposure defined in the END 2002/49/EC. As expected, the greatest consolidated noise sources are at the eastern end of the A96 due to proximity to Aberdeen and its associated various industrial land uses and main transport routes entering and exiting the city. As noted, this is not within the SEA study area. Within the SEA study area itself, the main sources of noise are from the A96 and the railway line which both follow a similar east-west alignment. There are some peripheral roads which are also noise sources, however these are more scattered in the western extent or form direct connections with the A96. Noise emissions from airports and industry outside of Aberdeen have not been modelled as they do not meet the criteria set out in the END.
- 4.2.13 The regulations also require the production of Noise Action Plans (NAPs) to manage noise. These NAPs identify locations where people are most likely to be annoyed by noise (Candidate Noise Management Areas [CNMAs]) and areas to be preserved (Candidate Quiet Areas [CQAs]) from the strategic noise mapping. These areas then go through a filtering process to determine which will progress to actual Noise Management Area (NMA) and Quiet Area (QA) status. Responsibility for assessing the potential for implementing cost-effective noise mitigation measures within NMAs rests with either Transport Scotland, Network Rail, or the local roads authority, depending on who is responsible for the road/rail. There is one Round 3 CQA which falls within the SEA study area, which is 'West Woods' located south of the A96 and west of the A90. There are 12 road CMNAs and two rail CMNAs proposed within Aberdeen and five road CMNAs in Inverness, however these are outside the SEA study area.



Population and Human Health

- 4.2.14 Aberdeen is Scotland's third largest city by population and its fourth most densely populated area 40. The largest settlement in Aberdeenshire is Peterhead, which has a population of 19,060 41. Approximately 48.4%, 47.4% and 41.6% of the populations of Aberdeenshire, Moray and Highland council areas respectively live in areas classified by the Scottish Government as 'rural'.
- 4.2.15 The largest settlement in The Highland Council area is Inverness, which has a population of 82,383 and is the fifth largest of Scotland's eight cities by population ⁴². The Highland Council is also Scotland's largest local authority by area, with a total land area (including all islands at low water) of 26,484km² ⁴³.
- 4.2.16 The largest settlement in Moray is Elgin, with a population of 24,760 44.
- 4.2.17 There are a number of areas of high deprivation within Aberdeen City, Aberdeenshire, Moray and Highland Councils' administrative areas. These areas would be more vulnerable to changes in the environment as the communities living within deprived areas are more likely to have social and environmental characteristics that present risks to health for example, poor housing, lack of green spaces, and poorer air quality. However, the proportion of data zones within the study area that rank within the 20% most deprived in Scotland is relatively small at 6.9%. Alongside this, 27.2% of data zones are ranked within the 20% least deprived zones across Scotland, suggesting an overall trend of lower deprivation across the study area.
- 4.2.18 Access to services is an important consideration for rural communities and improved connectivity can reduce health inequalities. There are multiple core paths concentrated in and around the towns of Inverness, Nairn, Forres, Elgin, Keith, Huntly and Inverurie, and along the coast from Findhorn to Portgordon, as well as core paths in forests (Culbin Forest, Bennachie Forest) and along lochs (Loch of Blairs, Millbuies Loch, Loch na Bo, Loch Oire) within the study area. Additionally, there are Rights of Way (ROWs) around the towns of Forres and Elgin, north-west from Keith and ROWs along the coast from Burghead to Lossiemouth.
- 4.2.19 Air quality and noise from transport could result in significant impacts on human health on the population, particularly the more urban areas within the study area. Air quality and noise is discussed above.

Material Assets

- 4.2.20 The main transport infrastructure within the study area includes:
 - the A96 Trunk Road (between Inverness and Aberdeen)
 - other A-class roads
 - the rail network between Aberdeen and Inverness, which includes 12 rail stations



- airports and associated infrastructure, including Inverness and Aberdeen international airports
- 4.2.21 Natural assets within the study area include:
 - 294 surface waterbodies within the study area, including the River Ness, River Nairn, River Findhorn, River Lossie, River Spey, River Don and River Dee
 - Scottish Ancient Woodland Inventory and Native Woodland Survey of Scotland sites
 - various soil types, including some nationally important carbon-rich soils, deep peat and priority peatland
 - land of varying degrees of agricultural value, including approximately 53.7km² and 174.6km² of Class 2 and Class 3.1 prime agricultural land respectively 45.

Water Environment

- 4.2.22 There is a total of approximately 294 surface water features within the A96 Study Corridor, which includes rivers, lochs, water bodies and coastal waters. There are 11 surface water catchments within the corridor which are traversed by the A96. These include the:
 - Beauly/Inverness Firth
 - Inverness Coastal
 - River Nairn
 - Moray Coastal
 - Muckle Burn
 - River Findhorn
 - River Lossie
 - Spey Bay Coastal
 - River Spey
 - River Deveron
 - River Don.

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- 4.2.23 A significant number of watercourses flow through the corridor and are bridged/crossed by the A96 itself. The largest watercourses in the corridor are the River Spey, to the immediate west of Fochabers, and the Riven Don (and its tributary, the River Urie) at Inverurie. Under the Water Framework Directive (WFD) classifications, these designated river catchments range from having 'Bad' to 'Good' Ecological Status, with the main reasons for not achieving 'Good' status being physical modification and chemical failings ⁴⁶. These are large watercourses which range from having sections that are more laterally dynamic to sections that have been heavily modified, as illustrated by the existing A96 crossing of the River Urie. Most river crossings are at points where the rivers are fresh water, with the exception of the River Nairn which is tidal where it is crossed by the A96.
- 4.2.24 Within the corridor, there are 14 WFD Designated Ground Water Bodies and 34 WFD Surface Watercourses (based on crossing locations). There are also eight Drinking Water Safeguard Zones and three Bathing Water Areas (where there may be interactions with the corridor).
- 4.2.25 The bedrock [solid] geology of the A96 corridor varies from east to west, consisting of sands, gravels, silts and clays. To the west of the study area, the bedrock geology comprises sandstones and conglomerate, while the east bedrock includes psammite and semi-pelite formations. The central part of the study area has a similar composition to the eastern part, consisting of psammite and semi-pelite formations with minor quartzites, limestones and igneous intrusions. Borehole data has shown that there are high groundwater levels at its eastern end. Further west, the water table is only high during winter months. The corridor lies across several WFD designated groundwater bodies which range from 'Good' to 'Poor' condition 47. Those waterbodies not achieving 'Good' status are generally because of chemical failings. Licenced water abstractions and private water supplies may also be important receptors within the corridor, though are yet to be fully identified.
- 4.2.26 The Scottish Environment Protection Agency (SEPA) flood mapping identifies flood risk from river, coastal and surface water flooding at low (1-in-1000 year), medium (1-in-200 year) (Figure A-5) and high (1-in-10 year) likelihood of flooding. Separate mapping identifies flood risk from rivers and coastal for the medium (1-in-200 year) scenario in 2080 (Figure A-6). The two figures that show these medium likelihood flood risk scenarios are provided in Appendix A (Environmental Figures).

4.2.27 Given the significant number of watercourses, the main risk of flooding within the A96 corridor is from river flooding. This includes the current route of the A96 itself. The flood mapping illustrates that the River Don poses significant flood risk to roads and settlements between Old Rayne and Dyce, with Kintore and Inverurie at significant risk. The other main settlements within the corridor of Nairn, Forres, Elgin, Fochabers, Huntly and Blackburn show significant areas of flood risk from various watercourses, including the River Spey and River Deveron. Keith, however, is deemed to be at low risk. Flood protection schemes have been implemented within the corridor, including at Forres, Elgin and Huntly. Coastal flood risk is confined to the coastal settlements within the wider study area of Findhorn, Burghead and Lossiemouth, although the estuary at Findhorn does allow for a greater extent of coastal flood risk inland. There is also some potential coastal flood risk for Nairn.

Biodiversity

- 4.2.28 International designations in the study area include four Ramsar wetland sites, eight SPAs and seven SACs, as follows:
 - Darnaway and Lethen Forest SPA
 - Inner Moray Firth SPA/Ramsar
 - Loch Flemington SPA
 - Loch of Skene SPA/Ramsar
 - Loch Spynie SPA/Ramsar
 - Moray and Nairn Coast SPA/Ramsar
 - Moray Firth SPA/SAC
 - Tips of Corsemaul and Tom Mor SPA
 - Cawdor Wood SAC
 - Culbin Bar SAC
 - Lower Findhorn Woods SAC
 - Lower River Spey Spey Bay SAC
 - Mortlach Moss SAC
 - River Spey SAC.
- 4.2.29 Potential likely significant effects on these internationally designated sites are being considered in the HRA, as described in Section 1.5.
- 4.2.30 National designations include 43 biological SSSIs.
- 4.2.31 Thirty one Aberdeen and Aberdeenshire Local Nature Conservation Sites (LNCSs), four Moray Wildlife Sites and one Scottish Wildlife Trust Reserve have been identified in the study area.

- 4.2.32 One Local Nature Reserve (LNR), Findhorn Bay, and two Royal Society for the Protection of Birds (RSPB) Reserves are also located within the study area.
- 4.2.33 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. In the southern part of the study area near Inverurie, there is less forestation than in the north. Approximately 26% of the study area is covered by woodland recorded on the National Forest Inventory. According to the Ancient Woodland Inventory, 14% of the study area comprises ancient woodland cover.

Geology and Soils

- 4.2.34 There are 17 geological and five mixed (biological and geological) SSSIs scattered throughout the area.
- 4.2.35 Scotland's Soils 48 (2019) mapping (Carbon and Peatland Map) is divided into five classes of carbon and peatland, and also illustrates areas of non-soil, unknown soil, and mineral soil. The classes are listed in Appendix C (Environmental Baseline). There are many soil types in the study area, ranging 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.
- 4.2.36 Some peat deposits are found within the study area, with higher concentrations south-east of the River Spey, from Moray Council area to Aberdeen City. Peat is an important carbon sink. More than 20% of Scotland is covered by peat soil, with peatlands holding over half of Scotland's terrestrial store of carbon ⁴⁹. However, within the SEA study area, there are no significant areas of buried peat (including carbon-rich soil, deep peat and priority peatland habitat).

Cultural Heritage

- 4.2.37 The corridor contains four historic battlefield sites; including Culloden to the east of Inverness, the Battle of Auldearn to the east of Nairn, and the Battle of Barra and the Battle of Harlaw close to Oldmeldrum and Inverurie respectively. The Battle of Harlaw site near Inverurie borders the A96 itself. There are a large number of heritage designations throughout the A96 Study Corridor with the A96 itself passing close to a number of Scheduled Monuments, Gardens and Designed Landscapes and passing through Conservation Areas in Elgin, Fochabers and Keith.
- 4.2.38 Non-designated sites also provide crucial contextual information to help better understand the history and development of the landscape within the study area, as well as the archaeological potential of the area. Aberdeen City, Aberdeenshire, Highland and Moray Council areas have approximately 412; 3,092; 2,212 and 5,479 non-designated cultural heritage assets respectively.

- 4.2.39 There is also potential for previously unrecorded cultural heritage assets to be located within the study area, given the area contains known heritage sites and artefacts. Information gathered on both designated and non-designated assets is important for assessing the archaeological potential of the study area.
- 4.2.40 The designated and non-designated historic landscape and seascape in the study area is also important. The historic landscape has developed as a result of land management, agriculture and settlement patterns.

Landscape and Visual Amenity

- 4.2.41 There are no areas of national landscape protection, such as National Scenic Areas or National Parks, within the A96 Study Corridor although the northern boundary of the Cairngorms National Park is approximately 10km to the south. Within the study area, there are 13 Local Landscape Areas (LLAs) which are regionally valuable landscapes intended to protect and enhance unique and important landscape qualities and encourage the enjoyment of these areas. In Aberdeenshire, important landscapes are designated as Special Landscape Areas.
- 4.2.42 There are 30 distinct Landscape Character Types (LCTs) 50 within the SEA study area.
- 4.2.43 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. There are also several areas of woodland located throughout the study area recorded as core native woodland on the Integrated Habitat Network (IHN), part of the Woodland Carbon Code or within Forest Research Experiment Sites.
- 4.2.44 There are various Tree Preservation Orders scattered through the study area, including several close to the existing A96 for example at Nairn, Keith and Thainstone.
- 4.2.45 The eastern end of the study area is within the Aberdeen City and Aberdeenshire Greenbelt, the purpose of which is to help avoid coalescence of settlements and sprawling development on the edge of the city, maintain Aberdeen's landscape setting, and provide access to open space.
- 4.2.46 Whilst the study area does not contain any nationally recognised scenic viewpoints, or nationally designated landscapes, there are visual sensitivities to some types of development within or visible from the locally designated landscapes. There are also numerous towns, villages and rural properties, along with numerous paths, recreational trails and areas used for outdoor recreation where there is the potential for visual effects to occur.



4.3 SEA Topic Inter-relationships

- 4.3.1 As set out in the Scottish Government's SEA Guidance (2013) 51, the inter-relationship of environmental effects between the topics will be considered within the SEA. The guidance states that, "When considering interrelationships and secondary effects, the assessment would only have to consider the effects that can reasonably be attributed to the plan. Interactions arising from external factors, beyond the control of the plan, do not need to be included".
- 4.3.2 Table 4.1 sets out the inter-relationships of environmental effects that could reasonably arise as a result of the A96 Corridor Review transport interventions/proposals being considered. These inter-relationships have been tailored to consider only what are considered significant interrelationships for the A96 Corridor Review. For example, air quality may be expected to have a significant inter-relationship with population and human health, through pollutant emissions in populated areas within the study area.

Table 4.1 Inter-relationships Between SEA Topics

SEA Topic	Climatic factors	Air Quality	Population and Human Health	Material Assets	Water Environment	Biodiversity	Geology and Soils	Cultural Heritage	Landscape and Visual Amenity
Climatic factors	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No
Air Quality	Yes	No	Yes	No	No	Yes	No	No	No
Population and Human Health	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Material Assets	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Water Environment	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Biodiversity	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes
Geology and Soils	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes

SEA Topic	Climatic factors	Air Quality	Population and Human Health	Material Assets	Water Environment	Biodiversity	Geology and Soils	Cultural Heritage	Landscape and Visual Amenity
Cultural Heritage	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes
Landscape and Visual Amenity	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No



5. Consultation and Stakeholder Engagement

5.1 SEA Consultation Requirements

5.1.1 Consultation, specific to the SEA, is required at several stages in line with the Scottish Government's SEA Guidance (2013) 52. As a minimum, the statutory SEA Consultation Authorities listed in Section 5.3 (SEA Scoping Workshop) are consulted on the need for a SEA and the scope of the SEA. The findings of the assessment are outlined in the Environmental Report and a public consultation on the plan and the report must be carried out before any plan can be adopted. The principal consultation requirements are outlined in Table 5.1. The SEA Scoping Report, Draft Environmental Report and SEA Post Adoption Statement will all be consulted on via the SEA Gateway and published on the Transport Scotland website.

Table 5.1: SEA Consultation Requirements

Steps in the SEA	Consultation requirements in Scotland
Decision on scope and level of detail of the assessment (SEA Scoping Report)	Consult Consultation Authorities (5-week statutory minimum)
Draft Environmental Report and draft plan or programme (PES)	Consult Consultation Authorities (12 weeks). Consult the public
During preparation of plan or programme	Take account of Environmental Report and opinions expressed (produce second draft of Environmental Report if substantial changes are required)
Adopted plan or programme: statement and measures concerning monitoring (SEA Post Adoption Statement)	Consult Consultation Authorities. Consult the public

5.1.2 Engaging with Consultation Authorities from the beginning of the SEA process is important, as each organisation brings their individual environmental expertise to the assessment process and ensures that the consultation process undertaken by a Responsible Authority is robust. This in turn means that the public can gain a better understanding of the likely effect of a plan on the environment and meaningfully contribute to the plan's preparation process by offering an informed view ⁵³.



5.2 Engagement with General Public

- 5.2.1 As part of the STAG appraisal, participation and engagement with public and stakeholders are key elements of the process. Public consultation has allowed the A96 Corridor Review team to capture relevant feedback to inform the identification of the current problems and opportunities affecting the corridor across all modes of transport. Suggestions for potential options to address the problems on the corridor have also been collated as part of the consultation process. The first public consultation ran for four weeks from 12 May to 10 June 2022 with briefing sessions for key stakeholders running in parallel with the public consultation. The online StoryMap ⁵⁴ published on 12 May 2022 allows information to be updated on a regular basis, keeping stakeholders and the public up-to-date with the progress of the A96 Corridor Review.
- 5.2.2 To engage the public and stakeholders, an online consultation feedback survey was created. Respondents were asked about their travel habits, their use of different modes of transport, the benefits and disadvantages of using the A96 corridor, and their general thoughts on travel and transport across the corridor. In total, 4,687 responses were received, 4,594 via the online consultation feedback survey and a further 93 submitted as email.
- 5.2.3 The SEA Screening Report ⁵⁵ was issued to Scotland's 'SEA Gateway' for subsequent issue to the Consultation Authorities. It was also made available on the Transport Scotland website in summer 2022. The Screening Report concluded that an SEA would be required, as discussed in Section 1.3.
- 5.2.4 A Stakeholder and Public Engagement Consultation Report 56 was published on the Transport Scotland website in December 2022. This included a summary of the public consultation undertaken between May and June 2022.

5.3 SEA Scoping Workshop

- 5.3.1 A list of environmental stakeholders was established for the A96 Corridor Review project. The first (virtual) meeting of these key stakeholders was for a SEA Scoping Workshop that took place on 02 February 2023.
- 5.3.2 The environmental stakeholders comprise the following organisations:
 - Transport Scotland
 - Jacobs AECOM
 - The SEA Statutory Consultation Authorities (NatureScot, HES, SEPA)
 - Scottish Forestry
 - The Highland Council
 - Aberdeen City Council
 - Aberdeenshire Council



- Moray Council
- Deveron, Bogie & Isla Rivers Charitable Trust & River Deveron District Salmon Fishery Board
- Convention of Scottish Local Authorities (COSLA).

5.4 Scoping Report Feedback

5.4.1 A Scoping Report ⁵⁷ was issued to the Consultation Authorities and wider Environmental, Social and Governance (ESG) between 17 January 2023 and 20 February 2023 for comment. Feedback was sought on whether the baseline and policy information presented was comprehensive and the proposed methodology appropriate. Responses were received from Aberdeenshire Council, HES, NatureScot, SEPA and Scottish Forestry. In their responses, the consultees were generally content with the approach but provided further detail on additional baseline and policy, which have since been updated and are presented in this Environmental Report (Appendices B and C). All consultation responses and the SEA responses to them, are provided in Appendix D (Scoping Report - Consultation Responses) of this Environmental Report.



6. The Approach to the Assessment

6.1 Assessment Overview

- 6.1.1 The SEA process has considerable overlap with the appraisal of the 'Environment' criterion within the wider STAG appraisal. The same topic specialists therefore worked on both appraisals and the results of the STAG environment criterion appraisal directly fed into the SEA for all environmental topics and their corresponding 'SEA Objectives', as listed in Section 6.3. The appraisal of the STAG 'Health, Safety and Wellbeing' criterion also fed into the SEA topic of Population and Human Health, specifically the SEA objective relating to safety. It is considered that this is the best way to ensure SEA influence throughout the development of the A96 Corridor Review and has also facilitated the identification and assessment of reasonable alternatives at each stage of the STAG process.
- 6.1.2 The SEA process and programme aligns with the Equalities Impact Assessment (EqIA) (and related assessments), described in Section 1.5 and in some cases matches the approach used for both the NTS2 SEA and the NPF4 SEA to ensure consistency.

6.2 Constraints and Opportunities Mapping

6.2.1 An interactive mapping tool was used to display environmental constraints, such as planning designations, designated ecological sites, landscape designations, cultural heritage assets, rivers and floodplains and parcels of woodland. The data which feed into the map are gathered from publicly available sources (as outlined in Chapter 4) and through consultation with the Consultation Authorities and other environmental stakeholders, as listed in Section 5.3. The mapping tool has been used to determine where environmental constraints are present in relation to the transport interventions and where there may be opportunities for enhancement.

6.3 Scope of Assessment and SEA Objectives

- 6.3.1 Following the baseline and PPS review, it was determined that there could be positive and/or negative effects on all of the SEA topics. As a result, they were all scoped into the assessment. This was agreed through the Scoping process.
- 6.3.2 The SEA utilises a set of SEA objectives that cover each of the environmental topics scoped into the assessment. The SEA objectives were developed on a national basis for the STPR2 SEA. These objectives have been further developed for the A96 Corridor Review SEA, following a comprehensive review of the baseline issues and policy requirements.
- 6.3.3 The SEA topics and the objectives that underlie them include the following:
 - Climatic Factors
 - Reduce emissions from Scotland's transport sector by reducing the need to travel, avoid or reduce materials with high embodied carbon,



encourage modal shift and help meet Scotland's wider targets to reduce greenhouse gas emissions

o Adapt the transport network to the predicted effects of climate change.

Air Quality

 Reduce all forms of transport-related air pollution and improve air quality.

Population and Human Health

- Improve quality of life and human health and increase sustainable access to essential services, employment and the natural environment
- Reduce noise and vibration associated with the transport network
- Promote, invest in, build and maintain infrastructure to support the development of high-quality places
- Improve safety on the transport network.

Material Assets

- o Promote and improve the sustainable use of the transport network
- Reduce use of natural resources and the environmental impacts associated with them.

Water Environment

 Protect, maintain and improve the quality of water bodies, wetlands and the marine environment from any direct or indirect impacts from the project, and protect against the risk of flooding.

Biodiversity

 Protect, maintain and enhance biodiversity and ecosystem services, avoiding damage to or loss of designated and undesignated wildlife or geological sites.

Geology and Soils

 Safeguard and improve soil quality and geological resources in Scotland, particularly high value agricultural land, protected geological sites and carbon-rich soil.

Cultural Heritage

 Protect and enhance (where appropriate) historic and archaeological sites and other culturally and historically important features and their settings.

• Landscape and Visual Amenity

 Safeguard and enhance the character and diversity of the Scottish landscape and areas of valuable landscape.



6.4 Stages of Assessment

- 6.4.1 It is recognised that the environmental topics of STAG do not fully cover the full range of SEA topics, as listed in Section 6.3, however, the SEA, EqIA and other supporting assessments will continue to align with each STAG stage, as this ensures the SEA is able to maximise its influence in the overall assessment process.
- 6.4.2 Any potentially negative effects identified in the ASTs have been discussed with the project team to consider reasonable alternatives and develop the mitigation and enhancement recommendations described in Section 8 of this Environmental Report.
- 6.4.3 Cumulative effects have been considered at both intra-plan (the impact of a combination of the A96 Corridor Review transport interventions) and the inter-plan level (the impact of the plan alongside other plans and policies), as described in Section 6.7.
- 6.4.4 Following the SEA assessments, relevant findings and recommendations are recorded in summary for inclusion in Chapter 7 (Assessment Findings) of this report, with assessment matrices provided in Appendix E (Assessment Matrices).

6.5 Assessment Approach

- As part of the STAG assessment process, the Preliminary Appraisal interventions and Detailed Appraisal packages (and Full Dualling) require assessment under environmental and climate change criteria. These criteria and the related sub criteria are very similar to the SEA topics and objectives. The STAG appraisal and SEA appraisal are broadly consistent with each other, except where the SEA objectives cover different topics to the STAG criteria. The assessment narrative for both appraisals is provided in this Environmental Report and in the Assessment Summary Tables of the Strategic Business Case Transport Appraisal Report (Draft) ⁵⁸. Where further appraisal has been required to meet additional SEA objectives, for topics not covered in the STAG appraisal, this is also summarised in Section 7 and provided in full in the detailed assessment matrices of Appendix E (Assessment Matrices).
- 6.5.2 The cumulative effects assessment has been summarised in a narrative for Full Dualling and each package of transport interventions in Section 7.3 and for each SEA topic in Sections 7.4 to 7.7 of this report. The assessment in Sections 7.4 to 7.7 is based on the assessment of the Refined Package and Full Dualling, to avoid any duplication in the cumulative effects assessment. The approach to the cumulative effects assessment informed the in-combination assessment (Section 7.8) and also the mitigation and enhancement opportunities (Section 8).
- 6.5.3 All assessments are limited to a high-level commentary due to the early stage and strategic nature of the design.

- 6.5.4 The SEA assessment process has used a similar rating system as the STAG appraisal for the assessment of packages, as shown in Table 6.1. The SEA rating system was developed to align with the STAG rating system to ensure consistency of approach.
- 6.5.5 This approach has several advantages, including the systematic recording of potential effects and their significance, with a narrative accompanying each rating to explain the rationale for the rating and the predicted effects. The narrative for the assessment of each package is provided in Appendix E (Assessment Matrices).

Table 6.1: Rating System for Likely Significant Effects

Rating	Descriptions	Colour Rating
Major Positive Effect	The option has a major contribution to the achievement of the SEA objective	Major Positive
Moderate Positive Effect	The option has a moderate s contribution to the achievement of the SEA objective	Moderate Positive
Minor Positive Effect	The option has a minor to the achievement of the SEA objective but not significantly	Minor Positive
Neutral Effect	The option is related to but does not have any effect on the achievement of the SEA objective	Neutral
Uncertain Effect	The option could contribute or detract from the achievement of the SEA objective but this will depend on factors such as design and how the option is implemented. In addition, insufficient information may be available to enable an assessment to be made	Uncertain
Minor Negative Effect	The option detracts from the achievement of the SEA objective but not significantly	Minor Negative
Moderate Negative Effect	The option moderately detracts from the achievement of the objective. Mitigation is therefore required	Moderate Negative
Major Negative Effect	The option significantly detracts from the achievement of the objective. Mitigation is therefore required	Major Negative



6.6 Consideration of Reasonable Alternatives

- 6.6.1 The Environment Act requires the Environmental Report to identify and assess any reasonable alternatives to the plan or programme, taking into account its objectives and geographical scope. According to Scottish Government (2013) SEA guidance ⁵⁹, alternatives must be realistic and are likely to emerge from the plan-making process.
- 6.6.2 Given the wider policy context and legislative landscape within which the transport corridor sits, and the supporting role transport plays in the delivery of multiple outcomes, a 'do nothing' scenario or a change in focus of the A96 Corridor Review are not considered 'reasonable alternatives' to delivering the main objectives of the review. Instead, reasonable alternatives have been considered at the key (STAG) stages of the A96 Corridor Review, particularly at the following stages:
 - Preliminary Appraisal assessment of a long list of transport interventions (see Appendix E);
 - Detailed Appraisal assessment of alternative packages of interventions and Full Dualling, each with a different combination of interventions (see Appendix E).
- 6.6.3 At the Preliminary Appraisal stage and the Detailed Appraisal stage, the principal consideration of reasonable alternatives has been in the assessment of Packages of transport interventions and Full Dualling against the two alternative future appraisal scenarios (with/without policy), described in Section 2.7 of this report.
- 6.6.4 Appendix E (Assessment Matrices) of this Environmental Report shows the alternative interventions considered and how the future appraisal scenarios were assessed in the matrix, using the SEA objectives.

6.7 Cumulative Effects Assessment

- 6.7.1 Cumulative effects have been considered at both intra-plan (the impact of the Detailed Appraisal packages and Full Dualling) and the inter-plan level (the impact of the A96 Corridor alongside other separate plans and policies). The inter-plan assessment will be updated when a preferred package or Full Dualling is available to consider alongside relevant national level policy/strategy, including the National Planning Framework (NPF4) and the Scottish Government's updated Climate Change Plan.
- 6.7.2 The cumulative assessment across all SEA topics used the following assessment approach to provide an average (modal) rating for each package of interventions and Full Dualling assessed:
 - If more uncertain (?) than + and -, then the average rating would be?
 - If more neutral (0) than + and -, then the average rating would be 0
 - If more + than and ?, then the average rating would be +



- If more than + and ?, then the average rating would be –
- If + or is equal to ? or 0, then the average rating would be + or -, as applicable
- If there are the same number of + and with the highest equal count, this would represent an exception and have a +/- rating.
- 6.7.3 The cumulative effects are summarised in Section 7 and provided in full in Appendix E (Assessment Matrices).



7. Assessment Findings

7.1 Preliminary Appraisal Stage Assessment

This section summarises the assessment of the Preliminary Appraisal for the A96 Corridor Review. The full assessment is provided in Appendix E (Assessment Matrices).

7.1.1 Active Communities

Draft Environmental Report

This intervention is expected to have a minor positive impact on climate change under both With and Without Policy Scenarios.

Overall, this intervention is expected to have a minor positive environmental impact under both With and Without Policy Scenarios, although this would be subject to the specific effects of the actual interventions chosen.

7.1.2 Active Connections

This intervention is expected to have a minor positive impact on climate change under both With and Without Policy Scenarios.

Overall, this intervention is expected to have a minor positive environmental impact under both the With and Without Policy Scenarios, although this would be subject to the specific impacts of the route chosen.

7.1.3 Improved Public Transport Passenger Interchange Facilities

This intervention is likely to have a neutral impact on climate change in both With and Without Policy Scenarios.

Overall, this intervention is likely to have a minor positive environmental impact, under both the With and Without Policy Scenarios but this would be subject to the extent of localised negative environmental impacts caused by the infrastructure enhancements and facilities.

7.1.4 Bus Priority Measures and Park and Ride

This intervention is expected to have a minor positive impact on climate change in both With and Without Policy Scenarios.

Overall, this intervention is expected to have a minor positive environmental impact, under both the With and Without Policy Scenarios; however, this would be subject to the degree of potential localised negative environmental impacts from any new measures implemented to achieve this intervention.

7.1.5 Investment in Demand Responsive Transport (DRT) and Mobility as a Service (MaaS)

This intervention is expected to have a minor positive impact on climate change in both With and Without Policy Scenarios.



Overall, this intervention is expected to have a minor positive environmental impact in both the With and Without Policy Scenarios.

7.1.6 Introduce Rail Freight Terminals at Inverness, Georgemas Junction, Keith and Elgin, with Associated Gauge Enhancement

This intervention is expected to have a neutral impact on climate change in both the With and Without Policy Scenarios.

Overall, at this preliminary stage in the appraisal process, the potential environmental impacts of constructing rail freight terminals within the corridor are considered to be minor negative under the With and Without Policy Scenarios, although this would be subject to final site selection and associated design. This is on the basis that although there are positive environmental impacts associated with this intervention, these would potentially be outweighed by large-scale impacts from constructing new rail freight terminals. The extent of impact would only be known through the design development process. If environmental constraints can be avoided, then adverse environmental impacts can be reduced.

7.1.7 Linespeed, Passenger and Freight Capacity Improvements on the Aberdeen to Inverness Railway Line

At this preliminary stage in the appraisal process, the potential climate change impacts of the intervention are considered to be minor positive under both the With and Without Policy Scenarios.

Overall, this intervention is likely to have a minor negative environmental impact under both the With and Without Policy Scenarios.

7.1.8 Improved Parking Provision at Railway Stations

This intervention is expected to have a neutral impact on the Climate Change criterion under the With Policy Scenario and a minor negative impact under the Without Policy Scenario.

Overall, at this preliminary stage in the appraisal process, the environmental impacts of constructing additional car parking spaces is expected to be neutral in both the With and Without Policy Scenarios.

7.1.9 Targeted Road Safety Improvements

This intervention is expected to have a minor positive impact on climate change under the With Policy Scenario and neutral under the Without Policy Scenario.

Overall, at this preliminary stage in the appraisal process, the potential environmental impacts of a suite of targeted road safety improvements are considered moderate negative in both the With and Without Policy Scenarios, although this would be subject to the location and design of such improvements. If the environmental constraints can be avoided, then adverse environmental impacts can be reduced.



7.1.10 Elgin Bypass

The provision of a bypass could enhance resilience of the A96 to the effect of climate change, however, given the potential for GHG emissions to arise during construction and the bypass to induce travel demand, the intervention is expected to have a minor negative impact on climate change under the Without Policy Scenario and neutral impact under the With Policy Scenario.

Overall, at this preliminary stage in the appraisal process, the potential environmental impacts of a bypass of Elgin are considered moderate negative under both the With and Without Policy Scenarios, although this would be subject to the location and design of the bypass. If the environmental constraints are avoided, then adverse environmental impacts could be reduced.

7.1.11 Keith Bypass

The provision of the bypass could enhance resilience of the A96 to the effect of climate change, however, given the potential for emissions to be generated during the construction period and the bypass to induce travel demand, a bypass of Keith is expected to have a minor negative impact on climate change under the Without Policy Scenario and neutral under the With Policy Scenario.

Overall, at this preliminary stage in the appraisal process, the potential environmental impacts of a bypass at Keith are considered moderate negative under both the With and Without Policy Scenarios, although this would be subject to the location and design of the bypass. If the environmental constraints are avoided, then adverse environmental impacts can be reduced.

7.1.12 Inverurie Bypass

The provision of a bypass could enhance resilience of the A96 to the effects of climate change. Given the levels of congestion in the area, and the potential for the bypass to induce travel demand, combined with emissions arising during the construction period and the limited opportunities to increase active travel within the town, a complete bypass of Inverurie is expected to have a minor negative impact on climate change under the Without Policy Scenario and minor negative impact under the With Policy Scenario.

Overall, at this preliminary stage in the appraisal process, the potential environmental impacts of a complete bypass of Inverurie is considered moderate negative under both the With and Without Policy Scenarios, given there could be significant impacts on the landscape, built heritage and ecology and other constraints, although this would be subject of the location and design of the bypass. If the environmental constraints are avoided, then adverse environmental impacts can be reduced.

7.1.13 Forres Bypass

With the potential for the bypass to induce travel demand combined with emissions arising during the construction period, the limited opportunities to increase active travel within the town and the A96 in Forres identified as at significant risk of flooding from various watercourses, a bypass of Forres is expected to have minor negative impacts on the Climate



Change criterion under the Without Policy Scenario; and minor negative on the Climate Change criterion under the With Policy Scenario.

Overall, the potential environmental impacts of a bypass at Forres are considered moderate negative for the Environment criterion under both the With and Without Policy Scenarios given there could be significant impacts on the landscape and ecology and other constraints although this would be subject of the location and design of the bypass. If the environmental constraints can be avoided, then adverse environmental impacts can be reduced.

7.1.14 Development of A96 Electric Corridor

Overall, the intervention is expected to have a moderate positive impact on the Climate Change criterion under the Without Policy Scenario and minor positive impact on the Climate Change criterion under the With Policy Scenario due to the higher uptake of electric vehicles.

Overall, the environmental impacts of alternative refuelling infrastructure are considered neutral in both the With and Without Policy Scenarios, although this would be subject to review at the next stage and be dependent on the specific interventions identified and their associated impacts.

7.2 Detailed Appraisal Stage Assessment

- 7.2.1 Tables 7.1 to 7.7 summarise the appraisal of Full Dualling, packages 1 to 5 and the Refined Package AST. A summary description of what is included in each of these packages is provided in Section 2.6.
- 7.2.2 The full assessment against each of the SEA objectives is provided in Appendix E (Assessment Matrices).

Table 7.1: A96 Full Dualling Assessment Using SEA Objectives

Scenario Type	Climate (GHG)	Climate Adaptation	Air Quality	Quality of life and sustainable access	Noise and vibration	High quality places	Safety	Sustainable transport network	Natural resources	Water quality and flood risk	Biodiversity	Geology & Soils	Cultural heritage	Landscape	Cumulative rating
With Policy	Major	Uncertain	Minor	Minor	Uncertain	Minor	Major	Moderate	Major	Major	Major	Major	Major	Major	Major
Scenario	Negative		Negative	Positive		Positive	Positive	Negative	Negative	Negative	Negative	Negative	Negative	Negative	Negative
Without Policy Scenario	Major Negative	Uncertain	Minor Negative	Minor Positive	Uncertain	Minor Positive	Major Positive	Moderate Negative	Major Negative	Major Negative	Major Negative	Major Negative	Major Negative	Major Negative	Major Negative

Table 7.2: Detailed Package 1 Assessment Using SEA Objectives

Scenario Type	Climate (GHG)	Climate Adaptation	Air Quality	Quality of life and sustainable access	Noise and vibration	High quality places	Safety	Sustainable transport network	Natural resources	Water quality and flood risk	Biodiversity	Geology & Soils	Cultural heritage	Landscape	Cumulative rating
With Policy	Minor	Uncertain	Minor	Minor	Uncertain	Minor	Moderate	Minor	Major	Moderate	Major	Moderate	Moderate	Moderate	Moderate
Scenario	Negative		Negative	Positive		Positive	Positive	Positive	Negative	Negative	Negative	Negative	Negative	Negative	Negative
Without	Minor	Uncertain	Minor	Minor	Uncertain	Minor	Moderate	Minor	Major	Moderate	Major	Moderate	Moderate	Moderate	Moderate
Policy	Negative		Negative	Positive		Positive	Positive	Positive	Negative	Negative	Negative	Negative	Negative	Negative	Negative
Scenario															

Table 7.3: Detailed Package 2 Assessment Using SEA Objectives

Scenario Type	Climate (GHG)	Climate Adaptation	Air Quality	Quality of life and sustainable	Noise and vibration	High quality places	Safety	Sustainable transport network	Natural resources	Water quality and flood risk	Biodiversity	Geology & Soils	Cultural heritage	Landscape	Cumulative rating
With Policy Scenario	Minor	Uncertain	Minor	Minor	Uncertain	Minor	Moderate	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor
	Negative		Positive	Positive		Positive	Positive	Positive	Negative	Negative	Negative	Negative	Negative	Negative	Negative
Without Policy	Minor	Uncertain	Minor	Minor	Uncertain	Minor	Moderate	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor
Scenario	Negative		Positive	Positive		Positive	Positive	Positive	Negative	Negative	Negative	Negative	Negative	Negative	Negative

Table 7.4: Detailed Package 3 Assessment Using SEA Objectives

Scenario Type	Climate (GHG)	Climate Adaptation	Air Quality	Quality of life and sustainable access	Noise and vibration	High quality places	Safety	Sustainable transport network	Natural resources	Water quality and flood risk	Biodiversity	Geology & Soils	Cultural heritage	Landscape	Cumulative rating
With Policy		Uncertain	Minor	Minor	Uncertain	Minor	Moderate	Minor	Minor	Minor	Moderate	Moderate	Minor	Moderate	Moderate
Scenario	Negative		Positive	Positive		Positive	Positive	Positive	Negative	Negative	Negative	Negative	Negative	Negative	Negative
Without	Minor	Uncertain	Minor	Minor	Uncertain	Minor	Moderate	Minor	Minor	Minor	Moderate	Moderate	Minor	Moderate	Moderate
Policy	Negative		Positive	Positive		Positive	Positive	Positive	Negative	Negative	Negative	Negative	Negative	Negative	Negative
Scenario															

Table 7.5: Detailed Package 4 Assessment Using SEA Objectives

Scenario Type	Climate (GHG)	Climate Adaptation	Air Quality	Quality of life and sustainable access	Noise and vibration	High quality places	Safety	Sustainable transport network	Natural resources	Water quality and flood risk	Biodiversity	Geology & Soils	Cultural heritage	Landscape	Cumulative rating
With Policy		Uncertain	Minor	Minor	Uncertain	Minor	Moderate	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor
Scenario	Negative		Positive	Positive		Positive	Positive	Positive	Negative	Negative	Negative	Negative	Negative	Negative	Negative
Without	Minor	Uncertain	Minor	Minor	Uncertain	Minor	Moderate	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor
Policy	Negative		Positive	Positive		Positive	Positive	Positive	Negative	Negative	Negative	Negative	Negative	Negative	Negative
Scenario															

Table 7.6: Detailed Package 5 Assessment Using SEA Objectives

Scenario Type	Climate (GHG)	Climate Adaptation	Air Quality	Quality of life and sustainable access	Noise and vibration	High quality places	Safety	Sustainable transport network	Natural resources	Water quality and flood risk	Biodiversity	Geology & Soils	Cultural heritage	Landscape	Cumulative rating
With Policy	Minor	Uncertain	Minor	Moderate	Uncertain	Minor	Moderate	Minor	Major	Moderate	Major	Moderate	Moderate	Moderate	Moderate
Scenario	Negative		Negative	Positive		Positive	Positive	Positive	Negative	Negative	Negative	Negative	Negative	Negative	Negative
Without	Minor	Uncertain	Minor	Moderate	Uncertain	Minor	Moderate	Minor	Major	Moderate	Major	Moderate	Moderate	Moderate	Moderate
Policy	Negative		Negative	Positive		Positive	Positive	Positive	Major	Moderate	Major	Moderate	Moderate	Moderate	Moderate
Scenario									Negative	Negative	Negative	Negative	Negative	Negative	Negative



Table 7.7: Refined Package Assessment Using SEA Objectives

Scenario Type	Climate (GHG)	Climate Adaptation	Air Quality	Quality of life and sustainable	Noise and vibration	High quality places	Safety	Sustainable transport network	Natural resources	Water quality and flood risk	Biodiversity	Geology & Soils	Cultural heritage	Landscape	Cumulative rating
With Policy Scenario	Minor Negative	Uncertain	Minor Negative	Minor Positive	Uncertain	Minor Positive	Moderate Positive	Minor Positive	Moderate Negative	Minor Negative	Moderate Negative	Minor Negative	Minor Negative	Minor Negative	Minor Negative
Without Policy Scenario	Minor Negative	Uncertain	Minor Negative	Minor Positive	Uncertain	Minor Positive	Moderate Positive	Minor Positive	Moderate Negative	Minor Negative	Moderate Negative	Minor Negative	Minor Negative	Minor Negative	Minor Negative



7.3 Detailed Appraisal: Cumulative Effects by Package

- 7.3.1 The Full Dualling of the A96 would be considered to have a **cumulative major negative effect** under both the With and Without Policy Scenarios. There are
 opportunities to improve safety, for example through an increase in safe overtaking
 opportunities. There are also opportunities to improve placemaking, reduce traffic
 volumes in urban areas and improve accessibility. Minor positive effects were
 predicted for most of the Population and Human Health SEA objectives, for example
 due to improved placemaking and accessibility. Major positive effects were predicted
 for the safety SEA objective, mainly due to a prediction of lower traffic passing
 through urban areas. Many areas within the corridor could also benefit from improved
 climate adaptation. The infrastructure would be designed to be resilient to predicted
 impacts arising from current and future weather events and climatic conditions.
 However, as there is considerable uncertainty associated with the future impacts of
 climate change and any construction design is yet to be developed, an uncertain
 score was assigned for the climate adaptation SEA objective.
- 7.3.2 There are still likely to be major negative effects on many environmental receptors. This is mainly due to the construction footprint on habitats, cultural heritage, water quality, soils and landscape. Major negative effects were also predicted for GHG emissions and local air quality due to construction activity and traffic emissions during the operational phase.
- 7.3.3 Overall, Package 1 is likely to have some positive environmental effects, although the likely significant negative effects from some of the physical works would result in the overall package having a cumulative moderate negative effect in both the With and Without Policy Scenarios. This is mainly due to the construction of a series of bypasses and public transport and rail freight infrastructure improvements and their potential impact on the natural environment. Minor negative effects were predicted in relation to GHG emissions and air quality, due to construction emissions and operational stage traffic emissions. However, air quality is predicted to improve in communities where new bypasses would reduce traffic passing through them. As there is considerable uncertainty associated with the future impacts of climate change and any construction design is yet to be developed, an uncertain score was assigned for the climate adaptation SEA objective. Moderate negative effects were predicted in relation to water quality, soils, cultural heritage and landscape. Major negative effects were predicted for biodiversity, primarily due to land-take and for natural resources due to the raw material demand for the construction of new infrastructure. Minor positive effects were predicted for the Population and Human Health SEA Objectives, for example due to improved placemaking and accessibility. Moderate positive effects were predicted for the safety SEA objective, mainly due to a prediction of lower traffic passing through urban areas.

- 7.3.4 Overall, Package 2 is likely to have some positive environmental effects, particularly on the air quality and population and human health SEA objectives, as the package promotes interventions that will enable modal shift to more sustainable and active travel modes. The likely significant negative effects from some of the physical works would result in the package having a cumulative minor negative effect in both With and Without Policy Scenarios. This is mainly due to the construction of public transport infrastructure, rail freight and road safety improvements and their potential impact on the natural environment. Minor negative effects were predicted in relation to GHG emissions, mainly due to construction emissions. Minor positive effects were predicted for air quality due to an expected decrease in traffic flows and reduced congestion during the operational phase. As there is considerable uncertainty associated with the future impacts of climate change and any construction design is yet to be developed, an uncertain score was assigned for the climate adaptation SEA objective. Minor negative effects were predicted in relation to water quality, soils, cultural heritage and landscape. Minor negative effects were also predicted for biodiversity, primarily due to land-take and for natural resources, mainly due to the raw material demand for the construction of new infrastructure. Minor positive effects were predicted for the Population and Human Health SEA Objectives, for example due to improved placemaking and accessibility. Moderate positive effects were predicted for the safety SEA objective, mainly due to a prediction of lower traffic passing through urban areas.
- 7.3.5 Overall, Package 3 is likely to have some positive environmental effects, particularly on air quality and population and human health objectives, as the package promotes interventions that will enable modal shift to more sustainable and active travel modes. The likely significant negative effects from a number of the physical works, particularly any public transport infrastructure, rail freight and road safety improvements, would result in the package having a cumulative moderate negative effect in both the With and Without Policy Scenarios. This is mainly due to the construction of transport infrastructure and its potential impact on the natural environment. Due to this, minor negative effects were predicted in relation to GHG emissions. Minor positive effects were predicted for air quality due to an expected decrease in traffic flows and reduced congestion during the operational phase. As there is considerable uncertainty associated with the future impacts of climate change and any construction design is yet to be developed, an uncertain score was assigned for the climate adaptation SEA objective. Minor negative effects were also predicted for natural resources, water quality and cultural heritage, whereas moderate negative effects were predicted for biodiversity, soils and landscape. This is primarily due to land-take and the raw material demand for the construction of new infrastructure. Minor positive effects were predicted for the Population and Human Health SEA Objectives, for example due to improved placemaking and accessibility. Moderate positive effects were predicted for the safety SEA objective, mainly due to a prediction of lower traffic passing through urban areas.

- Overall, Package 4 is likely to have some positive environmental effects, particularly 7.3.6 on air quality and population and human health objectives, as the package promotes interventions that will enable modal shift to more sustainable and active travel modes. The likely significant negative effects from a number of the physical works. particularly any public transport improvements, rail freight and road safety improvements and the introduction of new rail freight terminals would result in the package having a cumulative minor negative effect in both the With and Without Policy Scenarios. This is mainly due to the construction of transport infrastructure and its potential impact on the natural environment. Due to this, minor negative effects were predicted in relation to GHG emissions. Minor positive effects were predicted for air quality due to an expected decrease in traffic flows and reduced congestion during the operational phase. As there is considerable uncertainty associated with the future impacts of climate change and any construction design is yet to be developed, an uncertain score was assigned for the climate adaptation SEA objective. Minor negative effects were also predicted for natural resources, water quality, biodiversity, soils, cultural heritage, and landscape. This is primarily due to land-take and the raw material demand for the construction of new infrastructure. Minor positive effects were predicted for the Population and Human Health SEA Objectives, for example due to improved placemaking and accessibility. Moderate positive effects were predicted for the safety SEA objective, mainly due to a prediction of lower traffic passing through urban areas.
- 7.3.7 Overall, Package 5 is likely to have some positive environmental effects, particularly in terms of safety and quality of life. The likely significant negative effects from some of the physical works would result in the overall package having a cumulative moderate negative effect in both With and Without Policy Scenarios. This is mainly due to the creation of a series of bypasses, public transport, rail freight and road safety improvements and the introduction of new rail freight terminals and their potential impact on the natural environment. Minor negative effects were predicted in relation to GHG emissions and air quality, due to construction emissions and operational stage traffic emissions. However, air quality is predicted to improve in communities where new bypasses would reduce traffic passing through them. As there is considerable uncertainty associated with the future impacts of climate change and any construction design is yet to be developed, an uncertain score was assigned for the climate adaptation SEA objective. Moderate negative effects were predicted in relation to water quality, soils, cultural heritage and landscape. Major negative effects were predicted for natural resources and biodiversity, primarily due to land-take and the raw material demand for the construction of new infrastructure. Minor positive effects were predicted for most of the Population and Human Health SEA Objectives, for example due to improved placemaking and accessibility. Moderate positive effects were predicted for the safety SEA objective, mainly due to a prediction of lower traffic passing through urban areas.

The Refined Package is likely to have a cumulative minor negative effect for the With 7.3.8 and Without Policy Scenarios. Minor negative effects were predicted in relation to GHG emissions and air quality, due to construction emissions and operational stage traffic emissions. However, air quality is predicted to improve in communities where new bypasses would reduce traffic passing through them. As there is considerable uncertainty associated with the future impacts of climate change and any construction design is yet to be developed, an uncertain score was assigned for the climate adaptation SEA objective. Moderate negative effects were predicted for natural resources and biodiversity, whereas minor negative effects were predicted for air quality, water quality cultural heritage and landscape and visual amenity. The likely minor and moderate negative effects are likely to arise from some of the physical works, mainly due to the creation of two bypasses, public transport infrastructure improvements and road safety improvements and their potential impact on the natural environment. There are also many minor positive environmental effects predicted for both With and Without Policy Scenarios, including quality of life and sustainable access, high quality places and sustainable transport networks. Moderate positive effects were predicted for the safety SEA objective. These positive effects mainly arise through targeted road safety improvements, the provision of high-quality active travel routes within and between settlements and various bus and rail improvements.

7.4 Detailed Appraisal: Cumulative Effects by SEA Topic - Overview

- 7.4.1 The Refined Package represents the better performing transport interventions from the STAG appraisal in comparison to Packages 1 to 5, as discussed in Section 2.6. This includes the appraisal of the 'environment' STAG criterion. Only one of the Packages, or Full Dualling, would be likely to be implemented. To avoid any duplication in the assessment of cumulative effects, Sections 7.5 and 7.6 therefore focus on the potentially significant cumulative effects of implementing either the Refined Package or Full Dualling respectively. The results are summarised in Section 7.7.
- 7.4.2 The sections below summarise the potential cumulative effects on each SEA topic, The construction works programme associated with different transport interventions would also likely be spread over a number of years and the environmental effects may therefore not be concurrent or cumulative. The scale of the effects of these proposals on the various SEA topics will depend on the design and location of the works and further environmental assessment would need to be undertaken as the designs progress.



7.5 Refined Package Cumulative Effects by SEA Topic

Climatic Factors

- 7.5.1 GHG emissions arising from the construction stage of this package are estimated to be in the range of approximately $140,000 \text{ tCO}_2\text{e}$ to $280,000 \text{ tCO}_2\text{e}$.
- 7.5.2 Traffic flows and emissions around the A96 increase as a result of this package, due to reduced congestion and an attraction of traffic onto this part of the network. There is therefore a net increase in GHG emissions. The Net Present Value of carbon dioxide equivalent emissions of the proposal, indicates that road user GHG emissions would increase over the 60-year appraisal period.
- 7.5.3 The estimated increase in road users GHG emissions in the appraisal period between the 'with scheme' and 'without scheme' scenarios for this package of interventions is approximately 2,300 tCO $_2$ e under the With Policy Scenario and 88,000 tCO $_2$ e under the Without Policy Scenario.
- 7.5.4 The existing A96 Trunk Road is considered vulnerable to the effects of climate change, particularly in areas with a high risk of flooding such as the floodplains associated with the River Lossie near Elgin, and flood risk areas around Keith associated with the River Isla, or locations where current or future ground stability issues are known or anticipated.
- 7.5.5 The transport network improvements are expected to improve the resilience to identified flood risk areas, and other potential climate risks. The enhancements in the transport infrastructure to encourage sustainable transport modes in the area have the potential to mitigate road user emissions over time when coupled with decarbonisation of the grid, and a switch to electric vehicles.
- 7.5.6 Despite this, key long-term climate change trends for Scotland are that average temperatures will increase across all seasons; typically, summers will be warmer and drier, and winters will be milder and wetter. These are likely to have an impact on this package. Heavy rainfall events are anticipated to become more frequent in the coming decades, exacerbating flooding and landslide incidents.
- 7.5.7 Heavy rainfall events have the potential to flood railway lines, or wash sections away, leading to significant disruption on the rail network and a resultant knock-on impact on other transport modes and routes.
- 7.5.8 Paved surfaces created as part of the Refined Package options (Elgin and Keith bypasses, active communities, and targeted road safety improvements) might incur surface damage or be impacted by surface water flooding during periods of heavy rainfall. There is also an increased risk of thermal expansion and movement of paved surfaces due to increased summer temperatures. Higher summer temperatures might also lead to overheating and damage of electrical equipment developed as part of the



- A96 Electric Corridor intervention. Infrastructure might also be inaccessible during extreme weather events.
- 7.5.9 In order to account for the effects of climate change, the infrastructure would be designed to be resilient to predicted impacts arising from current and future weather events and climatic conditions, in accordance with current planning, design, engineering practice, and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential extreme weather events that are anticipated to affect the region, and other likely climate risks.
- 7.5.10 As there is considerable uncertainty associated with the future impacts of climate change and any construction design is yet to be developed, an uncertain score has been assigned for the climate adaptation SEA objective, in both With and Without Policy scenarios.
- 7.5.11 Due to the predicted GHG increases associated with constructing and operating transport infrastructure, a **minor negative cumulative effect** is predicted for the GHG SEA objective and an **uncertain cumulative effect** is predicted for the climate adaptation SEA objective.



Air Quality

- 7.5.12 The Refined Package has the potential to have negative effects in terms of air quality. The bypasses may result in an increase in the use of private vehicles due to the reduction in congestion, which may lead to a reduction in air quality in the vicinity of the bypass alignments and the wider A96 corridor.
- 7.5.13 The promotion of vehicles with lower or zero emissions through the inclusion of alternative refueling infrastructure and facilities should help to reduce vehicle emissions and thereby reduce overall air pollution. The inclusion of bypasses has the potential to reduce existing air quality concerns within the settlements of Elgin and Keith by reducing the traffic passing through them.
- 7.5.14 The inclusion of continuous vehicle-free connections between settlements to promote walking and wheeling should also reduce vehicles travelling around and between settlements. The continuous active travel measures between the settlements would result in an overall decrease in vehicles to the improvement of air quality within the settlement. The package also includes public transport and rail freight improvements which again may reduce the number of vehicles on the roads and further improve air quality. Fewer vehicle kilometres travelled would also improve the local air quality, with associated health benefits in communities along the A96.
- 7.5.15 Following the introduction of the Refined Package, total emissions of nitrogen oxides (NOx) and particulate matter (PM) are predicted to increase, under both the Low and Without Policy Scenarios. This is due to an increase in traffic flows and emissions as congestion is reduced following the inclusion of the proposed bypasses. Emissions are anticipated to reduce within the bypassed settlements as users are encouraged to transfer to more sustainable modes The package is predicted to increase NOx by two tonnes and particulate matter of 2.5 microns or less (PM_{2.5}) emissions by 0.4 tonnes in the With Policy Scenario; and NOx by 43 tonnes and PM_{2.5} emissions by 13 tonnes in the Without Policy Scenario, over the 60-year appraisal period. There are however opportunities for the transport interventions to promote and facilitate sustainable travel and assist in reducing transport-related air pollution along the corridor.
- 7.5.16 Traffic is predicted to divert away from areas of Elgin and Keith due to the potential interventions, under both the With and Without Policy Scenario scenarios.
- 7.5.17 By reducing the traffic through Elgin and Keith, there is also an opportunity to increase the active travel opportunities within these settlements. This could further reduce the use of private vehicles, with a positive effect on air quality.
- 7.5.18 A minor negative cumulative effect is predicted for the air quality SEA objective.



Population and Human Health

- 7.5.19 This package could directly improve access to local health and wellbeing infrastructure, a result of improved active travel provision, improved public transport interchange and improving the journey time and frequency of rail services. It could therefore improve access to health and wellbeing facilities in the wider A96 corridor area, for example Raigmore Hospital in Inverness, Dr Gray's Hospital in Elgin and Aberdeen Royal Infirmary, through improved linkages to public transport services. The removal of through traffic from Elgin is also anticipated to reduce congestion which should provide benefits for accessing local health and wellbeing services, such as Dr Gray's Hospital, whether it be by car, public transport or by active modes.
- 7.5.20 The proposals within this package are also likely to have positive effects in terms of communities and physical fitness. The options could see a modal shift to sustainable transport methods including bus, rail, walking and cycling. The increased opportunities to travel by these methods would be beneficial and create opportunities for communities to access key services, employment opportunities and healthcare particularly along the A96 corridor. In addition, this package of A96 improvements could reduce disruption and congestion and increase safety and accessibility. The active travel improvements between the settlements would have a positive environmental effect for the communities and physical fitness.
- 7.5.21 Enhancements to the active travel network to provide direct routes to public transport interchange points and stations would also benefit accessibility to key health and wellbeing services.
- 7.5.22 A **minor positive cumulative effect** is predicted for the quality of life and sustainable access SEA objective.
- 7.5.23 There would be positive effects in terms of a potential reduction in noise and vibration within the settlements of Elgin and Keith, with the provision of bypasses and the associated reduction in the volume of traffic passing through the settlements.
- 7.5.24 The active communities and public transport interventions associated with this package are also likely to reduce noise and vibration from vehicle traffic if the interventions lead to a modal shift.
- 7.5.25 This package may also create positive effects in terms of noise and vibration within and around settlements. The package aims to promote a shift to sustainable modes of traffic which could see a reduction in traffic. Scotland's Noise Map illustrates that the A96 Trunk Road is a significant noise contributor in the area. The modal shift to sustainable modes of transport and away from the private car should help reduce vehicle noise and vibration along the A96 and within settlements.
- 7.5.26 Scotland's Noise Map illustrates that vehicle noise from the A96 Trunk Road is a significant contributor of noise within these settlements and thereby noise effects could be reduced through both the reduction of vehicles by the interventions within

- this package and the bypassing of settlements by a large proportion of the vehicles. Noise associated with vehicles would however be prevalent along the bypass routes which could have significant effects depending on their alignment and proximity of receptors although noise mitigation could be incorporated.
- 7.5.27 However, this package also has the potential to have negative effects in terms of noise and vibration through the increase of freight on the railway and any associated rail freight facilities. The significance of the effect would depend on the location of such facilities.
- 7.5.28 An **uncertain cumulative effect** is predicted for the noise and vibration SEA objective. This is due to a combination of positive and negative impacts predicted, depending on location and the ways in which the transport interventions might be implemented.
- 7.5.29 Enhanced placemaking, along with reduced demand for unsustainable travel for shorter everyday trips, would also offer improvements to visual amenity in communities where centres become more about a sense of place rather than a connection of roads for the purpose of movement. Improved routes and crossing facilities for walking, wheeling and cycling would also offer better access to existing local green space. Improved public realm allows for people to gather and socialise. Studies have linked the quality of public spaces to people's perceptions of attractiveness of an area, contributing towards their quality of life.
- 7.5.30 However, there is potential for negative environmental effects on visual amenity during construction and operation of any new road infrastructure, development of new alternative fuelling stations and any rail line improvements such as the construction of passing loops. This would need to be assessed in more detail during the development of this aspect of the package.
- 7.5.31 A **minor positive cumulative effect** is predicted for the placemaking (high quality places) SEA objective.
- 7.5.32 Personal security is likely to improve through an increase in people walking, wheeling and cycling in and around key communities along the A96 corridor as there would be an increase in natural surveillance. Furthermore, public realm improvements such as the provision of street lighting can prevent road traffic collisions and increase pedestrian activity through reduction in the fear of crime.
- 7.5.33 Public transport interchange improvements and DRT/MaaS may also improve personal security and make a safer network for travellers, either directly through improved security facilities at interchanges, such as improved lighting and CCTV coverage or indirectly through better passenger assistance or through minimising wait times. These interventions could therefore improve the attractiveness of public transport stops and stations as they would likely be perceived to be safer.

- 7.5.34 Safety would also be improved through better passenger assistance or through minimising wait times due to better information about services. Public transport stops and stations can become more attractive and would likely be perceived to be safer.
- 7.5.35 MaaS and DRT can also help those with mobility issues travel, thereby reducing social isolation by allowing trips to be made more easily. These interventions could also deliver better access to healthcare and wellbeing infrastructure, with additional safety benefits where people are currently travelling longer distances to bus stops using roads with poor pedestrian infrastructure.
- 7.5.36 Additionally, reducing vehicle trips with greater active travel trips and public transport use would contribute to fewer accidents on the network. A mode shift for freight to reduce the number of HGV trips would also contribute to this.
- 7.5.37 A moderate positive cumulative effect is predicted for the safety SEA objective.

Material Assets

- 7.5.38 There is potential for minor positive effects on the sustainable use of the transport network by promoting or improving the sustainable use of the transport network through planning for future travel arrangements where journeys are made by a number of different modes (including active travel modes).
 - 7.5.39 There is also a potential opportunity for road schemes to improve surface conditions, and, alongside advancement in the types of materials used, reduce overall maintenance needs in the longer-term, with associated positive effects.
 - 7.5.40 Depending on the source and type of materials/natural resources used to construct some of the new infrastructure, there is potential for negative effects on material assets in terms of natural resources usage.
- 7.5.41 A minor positive cumulative effect is predicted for the Material Assets (sustainable transport network) SEA objective, whereas a moderate negative cumulative effect is predicted for the Material Assets (use of natural resources) SEA objective.



Water Environment

- 7.5.42 The bypasses and other construction works associated with this package have the potential for significant negative effects on the water environment. There are large areas of floodplain around Elgin associated with the River Lossie, some of which have flood mitigation. There are areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent. The construction of the bypasses also has the potential to have a negative impact on water quality of these water courses and consideration would be needed as to the alignment of the bypasses in terms of water crossings and bridge design.
- 7.5.43 The physical works associated with implementing the package, including improving public transport interchanges, linespeed improvements and increasing passenger and freight capacity has the potential to have negative effects in terms of water quality (risk of surface water drainage pollution) and flooding during the construction phase.
- 7.5.44 There are areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent. These areas are potential constraints to the proposed physical works associated with implementing this package.
- 7.5.45 The construction of this package also has the potential to have an adverse impact on water quality of these water courses and consideration would be needed in terms of water crossings and bridge design. Any impacts would be of varying degrees depending on scale, design and location.
- 7.5.46 The rail improvements at Keith have the potential to result in some negative effects on flooding due to the areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent.
- 7.5.47 Construction works have the potential to lead to moderate environmental effects given the scale of these works are likely to be more significant and may affect environmental designations. For the continuous active travel route, this may need to follow the current A96 route.
- 7.5.48 The scale of the effects of these proposals would depend on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have adverse environmental effects on water drainage and flooding which could be significant particularly if environmental designations are affected.
- 7.5.49 Construction works have the potential to lead to minor negative environmental effects given the scale of these works are likely to be more significant and may affect the water environment. For the continuous active travel route, this may need to follow the current A96 route.

- 7.5.50 The magnitude of environmental effects will depend on the design and location of the works and further environmental assessment would need to be undertaken as the designs progress. There is potential for adverse environmental effects on water drainage and flooding, which could be particularly significant if environmental designations are affected.
- 7.5.51 A **minor negative cumulative effect** is predicted for the water environment SEA objective.

Biodiversity

- 7.5.52 The bypasses have the potential to have moderate negative effects on biodiversity and habitats, landscape and forestry. These effects could be moderate negative (depending on alignment), given the scale of development associated with these bypasses.
- 7.5.53 The physical works associated with the other interventions within this package are likely to have negative environmental effects of varying degrees depending on scale, design and location. Some of these impacts may be short-term during the construction phase only and could be mitigated. The rail improvements at Keith and Huntly have the potential to result in some negative effects however, these effects may be limited, considering there are no environmental designations in the areas of proposed interventions. There may be some localised landscape and biodiversity effects through the loss of vegetation, however mitigation could be incorporated, such as appropriate landscaping and tree planting to reduce these effects. The construction of the Public Transport Interchange Facilities and electric corridor interventions also have the potential for negative effects but this is dependent on the extent of physical works and location. The environmental effects are likely to be low.
- 7.5.54 The scale of the effects of these proposals would depend on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have negative environmental effects on biodiversity and habitats, landscape, historic environment, water drainage and flooding, geology and soils, agriculture and forestry, all of which could be significant particularly if the above designations are affected.
- 7.5.55 A **moderate negative cumulative effect** is predicted for the biodiversity SEA objective.

Geology and Soils

- 7.5.56 Soils are important for biodiversity and carbon sequestration. They also provide important ecosystem services such as crop production, pollutant filtration and protection of archaeological resources.
- 7.5.57 Construction works associated with the Refined Package have the potential to have negative effects on soils within and around the construction footprint, including high



- grade agricultural land, Geological Conservation Review sites, carbon rich soils and peat.
- 7.5.58 Potential construction impacts include pollution, erosion, removal, degradation, compaction and sealing.
- 7.5.59 A **minor negative cumulative effect** is predicted for the Geology and Soils SEA objective.

Cultural Heritage

- 7.5.60 The bypasses and other construction works associated with this package have the potential to have negative effects on cultural heritage. These effects could be minor negative (depending on alignment), given the scale of development associated with these bypasses.
- 7.5.61 The physical works associated with implementing the package, including improving public transport interchanges, linespeed improvements and increasing passenger and freight capacity has the potential to have negative effects during the construction phase. The impacts would be of varying degrees depending on scale, design and location. The rail improvements at Keith and Huntly are likely to result in some negative effects on cultural heritage. However, these effects may be limited, considering there are no cultural heritage designations in the areas of proposed interventions.
- 7.5.62 The construction of transport interventions along the current A96 route have the potential to affect designated Historic Battlefields, Gardens and Designed Landscapes, Scheduled Monuments and other designated and undesignated cultural heritage assets. The scale of the effects of these proposals would depend on the design and location of the works and further environmental assessment would be undertaken as the designs progress.
- 7.5.63 A **minor negative cumulative effect** is predicted for the Cultural Heritage SEA objective.



Landscape and Visual Amenity

- 7.5.64 The bypasses and improvements to public transport interchanges have the potential to have negative effects on landscape. These effects could be minor negative (depending on alignment), given the scale of development associated with these bypasses.
- 7.5.65 The physical works associated with the other interventions within this package are likely to have negative environmental effects of varying degrees depending on scale, design and location. Some of these impacts may be short-term during the construction phase only and could be mitigated. The rail improvements at Keith and Huntly have the potential to result in some negative effects however, these effects may be limited, considering there are no environmental designations in the areas of proposed interventions. There may be some localised landscape effects through the loss of vegetation, however mitigation could be incorporated, such as appropriate landscaping and tree planting to reduce these effects. The construction of transport interventions associated with the Refined Package also have the potential for negative effects but this depends on the extent of physical works and location.
- 7.5.66 Whilst the study area does not contain any nationally recognised scenic viewpoints, or nationally designated landscapes, there are visual sensitivities to some types of development within or visible from the Local Landscape Areas. There are also numerous towns, villages and rural properties, along with numerous paths, recreational trails and areas used for outdoor recreation where there is the potential for visual effects to occur.
- 7.5.67 A minor negative cumulative effect is predicted for the Landscape and Visual Amenity SEA objective.

7.6 Full Dualling Cumulative Effects by SEA Topic

Climatic Factors

- 7.6.1 GHG emissions arising from the construction stage are estimated to be in the range of approximately 700,000 tonnes CO_2e (tCO_2e) to 1,400,000 tCO_2e .
- 7.6.2 Traffic flows and emissions around the A96 increase as a result of this option due to a combination of reduced congestion, which potentially attracts traffic to the route, and an increase in route length which combine to increase overall vehicle kilometres under the Without Policy Scenario, resulting in a net increase in GHG emissions. The Net Present Value of carbon dioxide equivalent emissions (CO₂e) of the proposal, indicates that road user GHG emissions would increase over the 60-year appraisal period.

- 7.6.3 The estimated increase in road user GHG emissions in the appraisal period between the 'with scheme' and 'without scheme' scenarios for the Full Dualling option is approximately 150,000 tCO₂e under the With Policy Scenario and approximately 1,450,000 tCO₂e under the Without Policy Scenario.
- 7.6.4 The existing A96 Trunk Road is considered vulnerable to the effects of climate change, particularly in areas at high risk of flooding, or locations where current or future ground stability issues are known or anticipated. Such areas identified in the environmental assessment for this package are the floodplains associated with the River Lossie near Elgin, flood risk areas around Keith associated with the River Isla, and flood risk areas around Inverurie associated with the River Urie and River Don.
- 7.6.5 The transport network improvements are expected to improve the resilience to identified flood risk areas, and other potential climate risks. The enhancements in the transport infrastructure to encourage sustainable transport modes in the area have the potential to partially mitigate road user emissions over time when coupled with decarbonisation of the grid and a switch to electric vehicles.
- 7.6.6 Whilst there is potential to reduce transport emissions, current key long-term climate change trends for Scotland suggest that average temperatures will increase across all seasons; typically, summers will be warmer and drier, and winters will be milder and wetter. These are likely to have an impact on the Full Dualling option. Heavy rainfall events will become more frequent in the coming decades, exacerbating flooding and landslide incidents. These events have the potential to flood railway lines, or wash sections away, leading to significant disruption on the rail network and a resultant knock-on impact on other transport modes and routes.
- 7.6.7 Paved surfaces created as part of the Full Dualling might incur surface damage or be impacted by surface water flooding during periods of heavy rainfall. There is also an increased risk of thermal expansion and movement of paved surfaces due to increased summer temperatures. Infrastructure might also be inaccessible during other extreme weather events.
- 7.6.8 In order to account for the effects of climate change, the infrastructure would be designed to be resilient to predicted impacts arising from current and future weather events and climatic conditions, in accordance with current planning, design, engineering practice, and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential extreme weather events that will affect the region, and other likely climate risks.
- 7.6.9 As there is considerable uncertainty associated with the future impacts of climate change and any construction design is yet to be developed, an uncertain score was assigned for the climate adaptation SEA objective, in both With and Without Policy scenarios.

7.6.10 Full Dualling was assessed to have a **major negative cumulative effect** on the GHG emissions SEA Objective and an **uncertain cumulative effect** in relation to the climate adaptation SEA objective.

Air Quality

- 7.6.11 Full Dualling has the potential to have positive effects on air quality. Where the existing A96 Trunk Road alignment passes through settlements that would be bypassed by full dualling, these areas may experience an improvement in air quality due to a reduction in vehicle emissions, with traffic modelling indicating that at a daily level the anticipated traffic flow would reduce on the current A96 Trunk Road through the towns of Forres, Elgin, Keith and Inverurie with A96 Full Dualling in place by between approximately 45% and nearly 90% depending on location. However, as the A96 does not travel through the centre of Forres and Inverurie, benefits to air quality would not be as significant in the centre of these towns where traffic volumes are likely to remain relatively unaffected. Negative impacts on air quality may arise in the vicinity of the dualling alignment itself due to an increase in vehicles using the route. However, these are not expected to be significant due to the improved flow of traffic and the likely lower numbers of properties adjacent to the bypass route.
- 7.6.12 The option is anticipated to increase transport-based emissions over the 60-year appraisal period. There is a predicted increase of 94 tonnes of NOx and 140 tonnes of particulate matter of 2.5 microns or less (PM_{2.5}) emissions in the With Policy Scenario; and an increase of 821 tonnes of NOx and 159 tonnes of PM_{2.5} emissions in the Without Policy Scenario.
- 7.6.13 Full Dualling was assessed to have a **minor negative cumulative effect** on the air quality SEA Objective.

Population and Human Health

- 7.6.14 Full Dualling is likely to have positive effects in terms of communities and physical fitness. The network improvements could reduce disruption and congestion and increase accessibility, including access to services. The inclusion of the bypasses could lead to improvements in quality of life and accessibility for Elgin, Keith and Inverurie through removing some of the through traffic from the network. This has the opportunity to improve the roads in those locations to increase active travel opportunities and reduce some of the barriers to active travel. Creating a sense of place through improving these areas could increase active travel and physical fitness.
- 7.6.15 Full Dualling was assessed to have a **minor positive cumulative effect** on the quality of life and sustainable access SEA Objective.
- 7.6.16 Full Dualling has the potential to alleviate noise and vibration within the settlements, depending on the alignment of the dual carriageway, as it is assumed that dualling is likely to bypass settlements. Scotland's Noise Map illustrates that vehicle noise from the A96 Trunk Road is a significant contributor of noise within the settlements on the

A96 corridor and thereby noise effects could be reduced where the proposed dualling bypasses such settlements. Full dualling would inevitably result in greater noise impacts in proximity to its alignment. The significance of these effects would depend on the preferred alignment and its proximity to sensitive receptors, although noise mitigation could be incorporated. The construction of interventions included in this package and associated traffic is also likely to lead to minor negative effects on noise and vibration during the construction phase.

- 7.6.17 Full Dualling was assessed to have an **uncertain cumulative effect** on the noise and vibration SEA Objective.
- 7.6.18 Where the alignment of the dual carriageway results in the provision of bypasses, Full Dualling provides the opportunity to deliver interventions within towns to enhance placemaking and reduce real and perceived severance, reducing demand for unsustainable travel, particularly for shorter everyday trips. Facilitating the transition to sustainable models could further reduce traffic volumes within settlements along the corridor such as Elgin and Keith, enhancing the sense of place and supporting health and wellbeing. This is also expected to have a positive impact on the environment within any community bypassed, with improved air quality and result in benefits in relation to noise and vibration and visual amenity resulting from reduced traffic volumes within these settlements. It should however be noted that this option does not include the provision of active travel measures within bypassed settlements.
- 7.6.19 Full Dualling was assessed to have a **minor positive cumulative effect** on the placemaking (high quality places) SEA Objective.
- 7.6.20 The provision of a dual carriageway and an increase in safe overtaking opportunities between Hardmuir and Craibstone would result in the safer operation of the network and reduced accident rates and severity. This is particularly relevant at locations where there is a safety problem or a potential safety risk. From the analysis of accident data, the rural sections of the A96 Trunk Road have overall Personal Injury Accident (PIA) rates lower than or similar to the national average based on all A-roads of the equivalent type. There are however selected urban sections of the A96 trunk road that show a PIA rate higher than the national average, with specific locations in Forres and Keith. The rate of the Killed or Seriously Injured (KSI) accidents is also significantly Higher than the national average in these two towns, nearly five times the national average in Keith and just above three times the national average in Forres. A number of rural sections of the A96 Trunk Road also have a rate of KSIs higher than the national average these being between Hardmuir and Forres, Fochabers and Keith, Keith and East of Huntly and Kintore and Craibstone. The improvement in safety would likely result in reduced accident rates and severity as well as a reduction in driver stress, through the provision of safe overtaking opportunities.
- 7.6.21 Full Dualling was assessed to have a **major positive cumulative effect** on the safety SEA Objective.



Material Assets

- 7.6.22 Full Dualling has significant potential for negative impacts on the sustainable transport SEA objective as dualling could potentially lead to increased vehicle traffic and associated negative impacts on several SEA topics such as climate (GHG emissions), air quality, noise and vibration, water quality and flood risk, biodiversity, cultural heritage and landscape.
- 7.6.23 However, there is a potential opportunity for road schemes to improve surface conditions, and, alongside advancement in the types of materials used, reduce overall maintenance needs in the longer-term, with associated positive effects. The full dualling option also has potential for minor positive effects on the sustainable use of the transport network by promoting or improving the sustainable use of the transport network through planning for future travel arrangements where journeys are made by a number of different modes (including active travel modes).
- 7.6.24 Bearing the potential negative and positive effects in mind, Full Dualling was assessed to have a **moderate negative cumulative effect** on the Material Assets sustainable transport network SEA Objective.
- 7.6.25 Depending on the source and type of materials/natural resources used to construct some of the new infrastructure associated with several of the proposed interventions, there is potential for major negative effects on material assets in terms of natural resources usage.
- 7.6.26 Full Dualling was assessed to have a **major negative cumulative effect** on the Material Assets natural resources SEA Objective.

Water quality and flood risk

- 7.6.27 Full Dualling has the potential for significant negative effects on water, drainage and flooding. There are large areas of floodplain around Elgin associated with the River Lossie, some of which have flood mitigation. There are areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent. There are also areas of flood risk around Inverurie associated with the River Urie and River Don. The construction of the new dual carriageway also has the potential to have a negative impact on water quality of these watercourses and consideration would be needed as to the alignment in terms of water crossings and bridge design.
- 7.6.28 The scale of the effects of these proposals would depend on the design and location of the works. These have the potential to have adverse environmental effects on water drainage and flooding which could be significant particularly if environmental designations are affected.
- 7.6.29 Full Dualling was assessed to have a **major negative cumulative effect** on the water quality and flood risk SEA Objective.



Biodiversity

- 7.6.30 Due to the overall scale of the required infrastructure, Full Dualling has the potential to have major negative effects on biodiversity and habitats, and forestry. Such impacts could either be direct such as demolition/land loss/habitat loss, or indirect such as impacts on setting or views and would depend on the alignment of the dualling. The A96 corridor and its surroundings, contain various local, regional, national, and international designated sites, the impacts on which would need to be considered. Depending on the alignment of the Full Dualling option, there could be significant effects on the environment given the scale of works which would likely be irreversible particularly given the sensitive locations along the existing route.
- 7.6.31 The local, regional, national, and international designated sites include for example SACs, SPAs and SSSIs. There are large swathes of Long-Established Woodland (of plantation origin), pockets of Ancient Woodland (of semi-natural origin) and areas with Tree Preservation Orders.
- 7.6.32 The scale of the effects will depend on the design and alignment of the dualling and further detailed environmental assessment would need to be undertaken as part of any further option development.
- 7.6.33 Full Dualling was assessed to have a **major negative cumulative effect** on the biodiversity SEA Objective.

Geology and Soils

- 7.6.34 Soils are important for biodiversity and carbon sequestration. They also provide important ecosystem services such as crop production, pollutant filtration, water retention and protection of archaeological resources.
- 7.6.35 Due to the overall scale of the full dual carriageway option, this package has the potential to have major negative effects on soils within and around the construction footprint, including high grade agricultural land, Geological Conservation Review sites, carbon rich soils and peat.
- 7.6.36 Potential construction impacts include pollution, erosion, removal, degradation, compaction and sealing.
- 7.6.37 Full Dualling was assessed to have a **major negative cumulative effect** on the soils SEA Objective.

Cultural heritage

7.6.38 Due to the overall scale of the required infrastructure, Full Dualling has the potential to have major negative effects on the historic environment. Such impacts could either be direct such as demolition/land loss or indirect such as impacts on setting or views and would depend on the alignment of the dualling. The A96 corridor and its surroundings, contain various local, regional, national, and international designated



sites, the impact on which would need to be considered. Depending on the alignment of the Full Dualling option, there could be significant effects on designated and undesignated cultural heritage assets given the scale of works, which would likely be irreversible particularly given the sensitive locations along the existing route. This includes, but is not exclusive to, potential impacts on Gardens and Designed Landscapes, Conservation Areas, Historic Battlefields Sites and Scheduled Monuments.

- 7.6.39 The scale of the effects will depend on the design and alignment of the dualling and further detailed environmental assessment would need to be undertaken as part of any further option development.
- 7.6.40 Full Dualling was assessed to have a **major negative cumulative effect** on the cultural heritage SEA Objective.

Landscape

- 7.6.41 Due to the overall scale of the required infrastructure, Full Dualling has the potential to have adverse effects on landscape. Such impacts could either be direct such as demolition/land loss/loss of vegetation or indirect such as impacts on setting or views and would depend on the alignment of the dualling. The A96 corridor and its surroundings, contain various local, regional, national, and international designated sites, the impacts on which would need to be considered. Depending on the alignment of the full dualling option, there could be significant effects on the environment given the scale of works which would likely be irreversible particularly given the sensitive locations along the existing route.
- 7.6.42 In addition, according to the National Forest Inventory, wooded areas occur along the entire study area, concentrating on the outskirts of the towns of Nairn, Forres and Keith. In the southern part of the study area near Inverurie, there is less forestation than in the north. Conifers predominate, but there are also areas of fallen trees, broadleaved trees and young trees. According to the Ancient Woodland Inventory, long-established areas (of plantation origin) are found mainly from Inverness to Huntly.
- 7.6.43 The eastern end of the study area is within the Aberdeen City and Aberdeenshire Green Belt, the purpose of which is to help avoid coalescence of settlements and sprawling development on the edge of the city, maintain Aberdeen's landscape setting, and provide access to open space.
- 7.6.44 Whilst the study area does not contain any nationally recognised scenic viewpoints, or nationally designated landscapes, there are visual sensitivities to some types of development within or visible from the Local Landscape Areas. There are also numerous towns, villages and rural properties, along with numerous paths, recreational trails and areas used for outdoor recreation where there is the potential for visual effects to occur.



- 7.6.45 The scale of the effects associated with the full dualling of the A96 will be dependent on the design and alignment of the dualling and further detailed environmental assessment would need to be undertaken as part of any further option development.
- 7.6.46 Full Dualling was assessed to have a **major negative cumulative effect** on the landscape SEA Objective.

7.7 Summary of Cumulative Effects Assessment

7.7.1 In general the Refined Package has fewer negative effects and lower magnitude negative effects than Full Dualling in terms of potentially significant cumulative effects. This reflects the fact that the Refined Package was developed specifically to maximise the level of potential benefits provided by combining the best performing options from Packages 1 to 5. Both the Refined Package and Full Dualling have positive effects predicted for the Population and Human Health topics, for example due to targeted road safety improvements. However, the considerable amount of land-take, raw materials requirements and GHG emissions associated with constructing a fully dualled road for the entire corridor length has led to Full Dualling being assessed as having major or moderate negative effects for most of the SEA Objectives. In contrast, the Refined Package was assessed to be likely to lead to minor negative effects for most SEA Objectives, albeit with moderate negative effects predicted for natural resources and biodiversity due to the raw material demand and land-take associated with constructing the Refined Package bypasses.

7.8 In-combination Assessment

- 7.8.1 As stated in the <u>UK Government SEA Guidance</u>, "Cumulative effects arise, for instance, where several developments each have insignificant effects but together have a significant effect; or where several individual effects of the plan (for example noise, dust and visual) have a combined effect" ...
- 7.8.2 Cumulative effects on an SEA topic can arise from the combined effects of plans. For example, proposals along a linear route, such as a transport corridor, may cumulatively affect the landscape qualities experienced along that route 61.
- 7.8.3 The Local Development Plans (LDP) relevant to the Nairn, Forres, Elgin, Keith and Inverurie settlements have been reviewed to establish site allocations of proposed development on the periphery of the settlements, in order to identify land covered by housing policy and possible future planned large-area housing developments that need highlighting when assessing potential cumulative impacts. To focus on the development applications that are most likely to lead to significant in-combination effects, only plans to build 100 homes or more are referred to in Table 7.8.

Table 7.8: Development Land Allocations

Name/Application Site (LDP Ref)	Overview	Additional information
Nairn NA05 Nairn East	Site Type: Housing, Business, Community, Industry Area: 98.3 ha Indicative Housing capacity: 250 (650-850 Total) units	Masterplan for a new village of 650 homes on the eastern fringes of Nairn. Springfield Properties, which is nearing completion of more than 400 houses at its Lochloy development, has proposals for 650 homes on land at Balmakeith, Househill and Achnacloich.
		The three sites total 250 acres and, if approved, will begin close to Sainsbury's stretching out towards Auldearn, tying in with the new Nairn bypass.
Forres R2 Farrylea	Site Type: Residential Area: 22.2 ha Indicative Housing capacity: 380 units	Phases 1 and 2 of development has commenced with 249 units consented.
Elgin Policy R10 Spynie Hospital North	Site Type: Housing Area: 21.63 ha Indicative Housing capacity: 435 units	Development commenced. 202 units remaining.
Elgin Policy R11 Findrassie	Site Type: Housing Area: 100 ha Indicative Housing capacity: 1500 units	An application for housing and amenities has been permitted for the 100ha site of R11.
Elgin Policy R17 Driving Range Site	Site Type: Housing Area: 4.81 ha Indicative Housing capacity: 132 units	Development commenced.



Name/Application Site (LDP Ref)	Overview	Additional information
Elgin Policy R18 Linkwood Steading	Site Type: Housing Area: 3.49 ha Indicative Housing capacity: 111 units	Development commenced.
Inverurie Policy OP4 Phase 2 Portstown	Site Type: Mix of uses including 416 homes and commercial land	Full Planning Permission for 416 homes and 4 commercial units was approved in April 2018. The site is under construction with delivery continuing throughout the lifetime of the Plan.
Inverurie Policy OP5 Crichie	Site Type: Mix of uses including 737 homes, community facilities and a primary school	Planning Permission in Principle for 737 homes, business and industrial development, community facilities including a primary school was approved in December 2018.
Inverurie Policy OP7 Uryside Phase 2	Site Type: Housing including 681 homes	An application for the removal of a clause on an application for 611 dwellings is the only application for the site in the last five years and was withdrawn.

7.8.4 The remaining major vacant development sites include:

- Nairn Policy NA04 Sandown (36.3ha area proposed for housing, business and community - 350 units)
- Nairn Policy NA05 Nairn East (98.3ha area proposed for housing, business, community and industry - 850 units)
- Forres Policy R1 Knockomie (6.7ha area proposed for housing 100 units)
- Forres Policy R3 Lochyhill (61ha area proposed for housing 850 units)
- Forres Policy R6 Dallas Dhu (18.85ha area proposed for housing -136 units)
- Forres Policy Long1 Lochyhill (19ha area proposed for long-term residential and potential new school)
- Forres Policy OPP7 Whiterow (13.3ha area proposed for residential and/or small-scale business)
- Elgin Policy R3 Bilbohall South (9.9ha area proposed for housing -105 units)



- Elgin Policy R4 South West of Elgin High School (4ha area proposed for housing -107 units)
- Elgin Policy R12 Lossiemouth Road North East (16.5ha area proposed for housing - 150 units)
- Elgin Policy R16 Barmuckity (12.5ha area proposed for housing -190 units)
- Elgin Policy R19 Easter Linkwood and Linkwood (48ha area proposed for housing - 675 units)
- Elgin Policy R20 Glassgreen, Elgin South (18ha area proposed for housing -195 units)
- Elgin Policy LONG 1A/B North East (located on the northern edge of Elgin and has been identified as area proposed for housing)
- Keith Policy MU (Area of 16.66ha on the eastern edge of Keith (Banff Road South) has been allocated for housing and community facilities)
- Inverurie Policy OP15 Land West of Bennachie View Care Home (Housing including 130 homes).
- 7.8.5 The in-combination effects between the A96 Corridor Review and these other plans and projects are likely to affect all of the SEA topics but will vary considerably depending on the timing of construction of each. Some effects, such as construction stage noise and vibration and air pollution are likely to be negative, but there may also be positive in-combination outcomes, for example related to improved safety or improved active travel connections. More in-depth, in-combination assessments for all environmental topics will be required at the project level when Environmental Impact Assessments are undertaken.

7.9 Assessment Summary

7.9.1 The results of the SEA matrix-based assessment showed that the Refined Package and Packages 2 and 4 are likely to have the lowest impact on the environment overall, with cumulative minor negative effects predicted. By comparison, Packages 1, 3 and 5 were assessed to lead to cumulative moderate negative effects and Full Dualling was assessed to potentially lead to major negative effects.

7.10 Related Assessments - Summary of Assessment Findings

Habitats Regulations Appraisal (HRA)

7.10.1 The EU Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (hereafter referred to as the Habitats Directive) was adopted in 1992 (as amended). The primary aim of the Habitats Directive is to promote the conservation of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species of European interest listed in the Annexes to the Directive at a favourable conservation status. It also introduces robust protection for those habitats and species of European importance.

- 7.10.2 Article 6(3) of the EC Habitats Directive requires that any plan which is not directly connected with or necessary to the management of a European site but may be likely to have a significant effect on such a site, either individually or in combination with other plans or projects, shall be subject to an 'appropriate assessment' of its implications for the European site in view of the site's conservation objectives. The application of the precautionary principle is implicit in the Habitats Directive, which requires that the conservation objectives of European sites should prevail where there is uncertainty 62. Where scientific information is insufficient, inconclusive, or uncertain, the precautionary principle is applied. This procedure is applied in Scotland through The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), and is known as the 'Habitats Regulations Appraisal' (HRA) of plans. These regulations remained in place post 31 December 2020, with only minor changes being introduced by the Conservation (Natural Habitats, &c.) 63 (EU Exit) (Scotland) (Amendment) Regulations 2019.
- 7.10.3 Under the Habitats Regulations, a network of sites has been designated across Scotland and its marine environment for the purposes of nature conservation. This network comprises sites known as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). SACs are designated for the protection of habitats, plants and non-avian animal species of conservation concern. SPAs are designated to protect rare or vulnerable species of bird, as well as certain regularly occurring migratory bird species. In addition, Candidate and Possible SACs, Potential SPAs and Ramsar wetlands (designated under the Convention on Wetlands of International Importance) should be included in appraisals as they are afforded the same level of protection as European sites under domestic policy. European sites are designated due to the presence of specific habitats and species of internationally important biodiversity value, otherwise known as 'qualifying interest features'.
- 7.10.4 Prior to the UK's exit from the European Union (EU), Scotland's SACs and SPAs were part of a wider European network of such sites known as the 'Natura 2000 network'. They were consequently referred to as 'European sites'. Now that the UK has left the EU, Scotland's SACs and SPAs are no longer part of the Natura 2000 network but form a part of a UK-wide network of designated sites referred to as the 'UK site network'. However, it is current Scottish Government policy to retain the term 'European site' to refer collectively to SACs and SPAs (including any which are designated following the UK's exit from the EU).

- 7.10.5 An HRA Screening Report has been prepared to determine if the transport interventions being considered as part of the A96 Corridor Review might lead to any potential indirect or direct significant effects on European sites. The Screening Report considered potentially significant effects on 18 European Sites within a Zone of Influence. Of these, likely significant effects on the qualifying habitats and species of seven sites were ruled out. For the remaining 11 European sites, likely significant effects on the qualifying features could not be excluded at this stage, on the basis of information currently available and/or in the absence of avoidance or mitigation measures. The next stage in the HRA process, Appropriate Assessment, is therefore required for these 11 European Sites.
- 7.10.6 To avoid unnecessary appraisal of Packages and Full Dualling, with elements of them that may at a later stage be removed from consideration and not recommended to be progressed, the Appropriate Assessment will not be initiated until a final set of interventions has been determined. Despite this, in order that due diligence continues to be exercised in relation to European sites, and to inform the design of interventions being considered as part of the A96 Corridor Review, the HRA team will continue to provide high-level information on mitigation measures that may be required to avoid adverse effects on the integrity of the European sites.
- 7.10.7 A summary of the HRA process completed to date will be included in the SEA Post Adoption Statement.

Climate Compatibility Assessment

- 7.10.8 The Scottish Government has confirmed the need for a transparent and evidence-based review of the A96 Dualling between Inverness and Aberdeen, including a <u>climate compatibility assessment</u> to assess direct and indirect impacts on the climate and the environment.
- 7.10.9 Jacobs AECOM have developed an assessment methodology, informed by existing best practice and alignment to national strategy and policy. The approach to the Climate Compatibility Assessment (CCA) was developed during the STAG Initial Appraisal (Case for Change) and Preliminary Appraisal stages and used to assess the interventions under consideration at the Detailed Appraisal stage. The CCA will remain as a separate and standalone assessment to the SEA's Environmental Report, with both documents to be published for consultation at the same time.



Equality Impact Assessment

- 7.10.10 As a public body, Transport Scotland has a legal duty when creating new plans and policies to pay due regard to the Public Sector Equality Duty (PSED) included within the Equality Act 2010. The PSED aims to eliminate unlawful discrimination, promote equality and cohesion between different groups and advance equality of opportunity. Supplementary legislation (the Equality Act 2010 (Specific Duties) (Scotland) Regulations 2012), requires Transport Scotland to be proactive in meeting the PSED of eliminating unlawful discrimination, advancing equality and fostering good relations.
- 7.10.11 An EqIA report has been prepared to determine if the A96 Corridor Review packages of transport interventions and Full Dualling might lead to any potential impacts on protected characteristic groups and help demonstrate Transport Scotland's due regard to the PSED.
- 7.10.12 The EqIA outlined the key evidence and issues relating to protected characteristic groups. It has identified both positive and negative impacts relating to Full Dualling and the transport intervention packages and Full Dualling assessed as part of the A96 Corridor Review. Overall, there is likely to be a minor or moderate positive impact on protected characteristic groups with Full Dualling and the transport packages contributing to improving outcomes by increasing accessibility to a range of transport options and enabling improved access to key educational and other destinations along the corridor.
- 7.10.13 The EqIA process started during the early stages of transport intervention development to ensure intervention options maximise positive outcomes and, where possible, include appropriate engagement with organisations representing protected characteristic groups to understand specific requirements.
- 7.10.14A detailed EqIA should be undertaken for any outcomes of the A96 Corridor Review that progress to the next stages of design. This should include further consultation with protected characteristic groups and actions to enhance positive impacts and reduce negative impacts.

Fairer Scotland Duty Assessment (FSDA)

7.10.15 A FSDA report has been prepared to determine if Full Dualling and the transport interventions being considered as part of the A96 Corridor Review might lead to any potential impacts on socio-economically disadvantaged groups and help to reduce inequalities of outcome resulting from socioeconomic disadvantage. The FSDA report demonstrates Transport Scotland's due regard to the Fairer Scotland Duty.

- 7.10.16 The FSDA report has outlined the key evidence and issues relating to socio-economically disadvantaged groups. It identified both positive and negative impacts relating to Full Dualling and the transport interventions. Overall, there is likely to be a minor positive impact on socio-economically disadvantaged groups with Full Dualling and the transport interventions contributing to reducing inequalities of outcome for socio-economically disadvantage groups by increasing accessibility to a range of transport options and enabling improved access to key employment, education and other destinations along the corridor.
- 7.10.17 The FSDA will need to be updated when Full Dualling or any transport packages are taken forward to the next stages of design.

Child Rights and Wellbeing Impact Assessment (CRWIA)

- 7.10.18 As a public body, Transport Scotland has a duty when creating new plans and policies to pay due regard to children and young people, as per the Children and Young People (Scotland) Act 2014, to avoid actions which breach children's rights under the United Nations Convention on the Rights of the Child.
- 7.10.19 A CRWIA report has been prepared to consider if Full Dualling and the packages of transport interventions being considered as part of the A96 Corridor Review might lead to any potential impacts on children and young people and to help demonstrate Transport Scotland's due regard to Section 1 of the Children and Young People (Scotland) Act.
- 7.10.20 The CRWIA report outlined the key evidence and issues relating to children and young people. It identified both positive and negative impacts relating to Full Dualling and the transport intervention packages (and Full Dualling) assessed as part of the A96 Corridor Review. Overall, there is likely to be a minor or moderate positive impact on children and young people with Full Dualling and the transport packages contributing to improving outcomes by improving noise and air quality, increasing accessibility to a range of transport options and enabling improved access to key educational and other destinations along the corridor.
- 7.10.21 As of July 2024, Transport Scotland have a legal responsibility to undertake a CRWIA for any new legislation which bring an Act into force or decisions of a strategic nature relating to the rights and wellbeing of children and young people. A detailed CRWIA will be completed for any transport intervention option taken forward as an outcome of the A96 Corridor Review that requires a Scottish Statutory Instrument. This should include further consultation with children and young people and proposed actions to enhance positive impacts and reduce negative impacts.



Partial Business and Regulatory Impact Assessment (BRIA)

- 7.10.22 A Business and Regulatory Impact Assessment (BRIA) has been undertaken as part of the A96 Corridor Review. A BRIA helps to assess the likely costs, benefits, and risks of any proposed primary or secondary legislation, voluntary regulation, codes of practice, guidance, or policy changes that may have an impact on the public, private or third sector (such as charities, community groups and other non-profit-making organisations). The Scottish Government recommends and encourages the completion of a BRIA as best practice to assess the impact of new legislation, as well as other changes such as voluntary guidance or policy changes, even where they do not necessarily present obvious additional obvious burdens. In such cases, it can either help confirm understanding that the impact will not change or identify and address unintended impacts which have not been identified previously.
- 7.10.23 The content of a BRIA should be proportionate to the problem involved and the size of the proposal. A Business and Regulatory Impact Assessment Toolkit and Template ⁶⁴ has been developed to provide guidance and information for completing a BRIA. This guidance encourages the preparation of a partial BRIA to inform consultation with stakeholders.
- 7.10.24 In line with the toolkit, an initial draft partial BRIA was developed. This provided baseline information on businesses and affected parties within the area as well as an initial screening assessment of the likely impacts, costs, benefits and risks of the various transport interventions. This was used to engage with selected relevant stakeholders in early 2023.
- 7.10.25 Assessment of the transport interventions shows that Full Dualling of the A96 could potentially reduce congestion. However, it is likely that widening the road and creating more capacity for traffic could actually induce more cars on the road. This would facilitate the issue of a high volume of cars on the road and businesses could still encounter issues due to this.
- 7.10.26 In contrast, the interventions contained within each transport package could provide more benefits to businesses. Active travel and public transport measures in particular would generally reduce the number of cars on the road and therefore allow more capacity for business trips.
- 7.10.27 The Partial BRIA will need to be updated when Full Dualling or any transport packages are taken forward to the next stages of design.

Island Communities Impact Assessment

7.10.28 An Island Communities Impact Assessment (ICIA) has not been undertaken due to the geographic location of the A96 corridor.

8. Mitigation and Enhancement Measures

8.1 Overview

- 8.1.1 The SEA aims to prevent, reduce or offset any significant adverse effects as far as possible before mitigation measures are proposed. In addition to preventing or minimising adverse effects, mitigation measures have also been provided for SEA topics where many uncertain effects were predicted in the assessment.
- 8.1.2 Undertaking the SEA process alongside the A96 Corridor Review throughout the project helps ensure that modifications can be made at the strategic level, for example via alternatives and identifying issues which can be addressed through other relevant Plans, Programmes and Strategies.
- 8.1.3 Where location-specific mitigation requirements are identified, these are described with appropriate recommendations for future implementation at a project level, as transport interventions are constructed.
- 8.1.4 In addition to mitigation measures, recommendations for A96 corridor enhancement opportunities have been provided wherever possible.
- 8.1.5 The mitigation measures and enhancement opportunities consider:
 - the environmental baseline data provided in Appendix C (Environmental Baseline)
 - the environmental requirements emerging from the PPS review, provided in Appendix B (Plans, Programmes and Strategies Review)
 - the SEA objectives provided in Section 6.3
 - feedback received from the consultation on the SEA Scoping Report, described in Section 5.4, including local context and feasibility
 - key issues and opportunities identified during the continuing development of the A96 Corridor Review, the EqIA and other Impact Assessments
 - feedback from the SEA Consultation Authorities and other key stakeholders.
- 8.1.6 Sections 8.2 to 8.9 provide general strategic mitigation and enhancement recommendations for each of the SEA topics. However, these recommendations will be finalised in the Final Environmental Report, to ensure any location-specific circumstances and other strategic opportunities are considered. The topics of Climatic Factors and Material Assets have been combined due to the synergies between the two topics in relation to sustainability and GHG emissions reduction.



8.2 Climatic Factors and Material Assets

Early Planning to Avoid or Reduce Greenhouse Gas Emissions

- 8.2.1 Planning to avoid or reduce GHG emissions at this strategic planning stage is essential for improving the carbon outcomes of the transport proposals being considered as part of the A96 Corridor Review. This applies to the packages of transport proposals as well as Full Dualling.
- 8.2.2 The opportunities associated with early planning for carbon reduction include the following:
 - Challenge the root cause of the need for a new transport asset explore alternative (no build) solutions to deliver objectives.
 - Hold carbon opportunities workshops from the earliest planning stage onwards.
 - Identify strategic carbon reduction opportunities across Scotland as part of the A96 Corridor Review.
 - Close collaboration with local authority planners to ensure travel demand and trip lengths are reduced.
 - Reduce the need to travel through supporting more digital technologies to allow more people to access services such as health care appointments, shopping or to work from home. Support for high speed broadband and good mobile phone network coverage will be required in order to reduce the need to travel.
 - Consider the potential for wider use of behavioural change and other policy solutions and funding instead of providing new infrastructure, for example, the commitment to reduce car kilometres by 20% by 2030.
 - Re-use and refurbish transport assets, extending their life rather than replacing them.
 - Support modal shift to active travel and public transport.
 - Future-proof transport infrastructure to allow the introduction or wider roll-out of emerging zero or low-carbon technologies.
 - Plan for the wider usage of zero-emission vehicles and low emission vehicles.
 - Consider how to link transport infrastructure with active travel networks, to make active travel as easy and safe as possible.
 - Select 'soft' rather than 'hard' engineering solutions where possible, for example, nature-based solutions.
 - The design of the project should seek to minimise material usage and the need for earthworks.
 - Identify the key emission sources associated with each intervention, and how they can be reduced.



- Avoid disturbance of vegetation and soils, particularly those with high carbon value for example, peat and carbon-rich soils, wetlands and ancient woodland.
- 8.2.3 Opportunities for offsetting should be considered where appropriate to contribute towards the national legislative target of achieving net zero emissions by 2045.

Choice of Materials

- 8.2.4 Although the choice of construction materials is not necessarily a consideration at the strategic planning stage, the decision to construct is often taken at the strategic planning stage. Early planning could potentially avoid the need to use materials with a high embedded carbon content at the construction stage. Each material that could potentially be used in the construction of a new transport asset or in the maintenance of an existing asset has an embodied carbon content associated with it.
- 8.2.5 The relative impact of each stage will depend upon the material choice. Recycled material will often have a lower carbon footprint as less energy and transport may be required. Heavier weight products may have more impact in transport and more highly processed materials may have most emissions within the manufacturing process.
- 8.2.6 To minimise emissions from the implementation of packages or Full Dualling, designers should take cognisance of the latest best practice, which is evolving due to advancements in material science, manufacturing and construction processes. This best practice should include identifying low-carbon materials and durable materials that require less maintenance, repair or replacement, in order for the operational emissions of transport assets to be minimised.
- 8.2.7 From a qualitative perspective, emissions from the implementation of packages or Full Dualling would depend on location, scale, primary materials and construction methods. For instance, interventions requiring significant volumes of concrete and steel such as bridges, junctions and viaducts, would have a high embodied carbon content due to the carbon intensity of the manufacture of the materials used in their construction.
- 8.2.8 Carbon life cycle assessment should be employed to reflect embodied carbon from demolition, materials, transport and maintenance, as well as the operational carbon associated with heat and power. Carbon life cycle models should calculate the whole life carbon for 2030 and 2045 carbon reduction target dates, in line with legislative requirements.

- 8.2.9 The delivery of one of the A96 Corridor Review packages or Full Dualling should include provisions for sustainable procurement that accounts for the carbon footprint of materials and products (including country of origin, transport requirements, production process). Consideration should be given to assessing the carbon benefit of prolonged lifespan arising from adequate maintenance. Sustainable procurement provisions should include circular economy principles that prioritise the re-use of materials in construction, use low-carbon construction materials and design principles that allow for materials to be re-used or recycled upon decommissioning. Consideration should also be given to the location of suppliers, to minimise transportation distances, subject to any procurement limitations.
- 8.2.10 Opportunities to utilise previously developed land to implement one of the A96 Corridor Review packages or Full Dualling should be explored. This may help reduce the requirements for raw materials and reduce the need to encroach on agricultural land or land with biodiversity, heritage, drainage, amenity or landscape value.

Construction Methods

- 8.2.11 In addition to embedded carbon considerations, construction activities also need to be considered and planned for. Any construction that requires significant earthwork movements will have a high energy demand from earth moving equipment and tipper trucks moving earth around/off/to the site. The source of power supply is a significant factor when assessing emissions from construction whether the machine is powered by diesel generators or can be plugged into the electricity grid.
- 8.2.12 Operational maintenance and refurbishment emissions also need to be considered for an asset throughout its operational life. For example, a road will require periodic resurfacing or a bridge could require the replacement of cables. These emissions tend to be assessed based on assumptions made on the design life of materials to determine how many times they will be replaced during the lifespan. The final consideration for materials is end-of-life emissions, which captures dismantling and disposal. PAS 2080 ⁶⁵ provides useful guidance on how to manage carbon emissions throughout the life of an infrastructure project.

Carbon Sequestration Opportunities

8.2.13 The delivery of one of the A96 Corridor Review packages or Full Dualling being considered as part of the A96 Corridor Review should consider how to protect carbonrich soils, wetlands and other natural resources that are important for carbon sequestration. The Plan should also require the identification of opportunities to create habitats and plant trees (for example, alongside linear transport infrastructure) that will also have carbon sequestration benefits.

Climate Adaptation Opportunities

- 8.2.14 The potential impacts of climate change on existing and proposed infrastructure need to be planned for and considered in the delivery of one of the A96 Corridor Review packages or Full Dualling being considered as part of the A96 Corridor Review, where possible. Transport infrastructure will need to be future-proofed for projected changes to:
 - flood risk from all sources
 - changes to temperature (variations and extremes)
 - increased risk of landslips, bridge scouring and erosion
 - increased windspeeds, high intensity rainfall and storminess.
- 8.2.15 Asset management plans for existing transport infrastructure may therefore need to be revised to respond to the latest climate impact projections. Larger gullies and increased use of SuDS may also be required. Sufficient space may need to be allowed for additional SuDS and permeable surfacing that can accommodate projected trends in rainfall and surface water flooding.
- 8.2.16 Consideration should also be given to how climate change could affect the spread of invasive species and tree diseases and could therefore have implications for vegetation management and access arrangements associated with the strategic transport network.
- 8.2.17 The third climate change risk assessment (CCRA3, SNIFFER, 2021) report recommends that more adaptation is particularly needed in relation to the increased risks to transport from high and low temperatures, high winds and lightning. The CCRA also calls for more action to ensure that projected increases in heavy rainfall are factored into long-term renewal programmes, especially for the rail network. Additional adaptation actions include:
 - improved numerical tools for infrastructure asset owners to predict failures
 - improved instrumentation and monitoring systems to detect pre-failure slope behaviour linked to decision support systems
 - more detailed characterisation of engineered soil assets
 - continued use of slope inspection programs
 - greater use of soft engineering techniques, such as vegetation management to reinforce vulnerable slopes
 - enhanced maintenance of drainage systems for roads and railways and increasing drainage capacity in new road infrastructure.

8.3 Air Quality

8.3.1 Further environmental assessment will be required to assess air quality impacts for sensitive human and designated ecological habitats across the A96 corridor, and possibly beyond, depending on the extent of any road traffic re-routing, to ensure air quality constraints and opportunities are identified.

- 8.3.2 There are however opportunities being considered as part of the A96 Corridor Review to promote and facilitate sustainable travel and assist in reducing transport-related air pollution along the corridor. In particular, the SEA recommends where practical:
 - A suite of active travel recommendations are taken forward and implemented in order to maximise potential modal shift from private vehicles to more sustainable methods of transport and include traffic-free paths wherever feasible, to encourage active travel.
 - Implement bus priority measures to focus on delivering faster and more reliable journey times and improvements to public transport facilities at bus and railway stations to encourage modal shift.
 - Improved access to travel opportunities to encourage modal shift in areas with low bus network connectivity or where fixed route services may not be suitable or viable through investment in Demand Responsive Transport (DRT)
 - Distinct improvements to three areas of railway between Aberdeen and Inverness to enable a more frequent passenger service and the provision of freight facilities to enable intermodal freight to operate.
 - Improved parking facilities at railway stations to encourage modal shift for medium and long distance travel along the corridor.
 - Provision of alternative refuelling infrastructure and facilities for electric vehicles along the A96 corridor and local road network to encourage sustainable transport modes.

8.4 Population and Human Health

- 8.4.1 Several of the proposed transport packages and Full Dualling in the A96 Corridor Review are expected to positively impact Population and Human Health, as detailed in the assessment summary of Chapter 7 (Assessment Findings). As well as these benefits, there are strategic opportunities to further enhance the positive effects. In order to fully utilise these benefits and opportunities, the SEA recommends:
 - A suite of active travel recommendations are taken forward and implemented in order to maximise the potential modal shift from private vehicles to walking, wheeling and cycling.
 - Seek opportunities for transport infrastructure to reduce community severance and increase accessibility for all.
 - Any new transport infrastructure, or enhancements to existing infrastructure, should maximise accessibility for those with limited mobility.
 - Any new transport infrastructure, or enhancements to existing infrastructure, should consider crime and security in the location and design of any schemes.
 - Plan to reduce the impact of the road network on local communities for example through the use of low-noise materials, noise barriers and natural buffers which could also help to improve biodiversity and air quality.
 - Any new electric charging infrastructure should be accessible to all.
 - Provision of high-quality, attractive, dense and safe networks for people to walk, wheel and cycle to places of work, essential services, community facilities and spaces and public transport hubs should be considered. These should be

- provided within communities and link with other communities. Road space reallocation for active travel should be considered to help increase uptake and improve safety.
- The provision of real-time information on weather conditions or other disruptions affecting the transport network in public places could potentially improve safety on the network. Any innovations, such as transport apps, may need to be made available in different languages.
- New projects within the A96 corridor should aim to improve safety through project design, and also be subject to ongoing safety monitoring. Targeted safety campaigns may also be required, for example campaigns aimed at motorcyclists.
- Introduce or extend traffic calming measures.
- Install sensors and communication technology to reduce traffic idling and improve flow.
- Seek opportunities to implement active travel measures in, or close to areas
 with concentrations of poor health, low levels of physical activity, areas of
 deprivation or areas where the air quality is poor. Consideration could be given
 to loaning bicycles or equipment to those who cannot afford to buy or run
 them.
- The development of one of the transport packages or Full Dualling should prioritise the provision of high-quality green or blue infrastructure (natural spaces, including waterways) or improve accessibility to existing green and blue infrastructure. This is likely to lead to significant benefits for mental and physical health, as well as sense of place and local pride.
- A communications strategy should be implemented to keep local communities informed of the progress of any A96 transport infrastructure construction and to provide channels for enquires/inputs/complaints. This may include a community liaison officer being appointed to facilitate regular meetings with local communities.

8.5 Water Environment

8.5.1 The development of one of the transport packages or Full Dualling will provide opportunities to reduce flood risk and increase the installation of SuDS which will help maintain or improve water quality and prevent flooding. In general terms, avoiding watercourses and areas designated for the protection of aquifers would be prudent. Consideration will also need to be given to potential disturbance to sites with historic contamination due to previous land uses, as groundworks could potentially release pollutants into soil and water. The implementation of climate adaptation measures (see Section 8.2) and nature-based solutions, as described in Section 8.6, will also help maintain or improve water quality through the protection of soil and reduction of erosion. Opportunities to enhance the amenity, accessibility and biodiversity value of SuDS should also be pursued.

- 8.5.2 Appropriate pollution control for all polluting activities is required during construction to prevent the deterioration of the status of water bodies. Considering SEPA guidelines, pre and post construction water quality monitoring may be required where deemed necessary. Similarly, hydrogeology and geotechnical surveys may be necessary to determine groundwater levels within the vicinity of any transport proposals. Specific measures may be required to prevent or limit the input of pollutants to groundwater.
- 8.5.3 The design of any transport proposals being considered as part of any of the transport packages or Full Dualling should be undertaken in line with best practice and relevant guidance, considering the requirements of The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) (CAR) and in consultation with SEPA.
- 8.5.4 Site-specific flood risk assessments should be undertaken in accordance with the Design Manual for Roads and Bridges (DMRB), SEPA and other relevant guidance, as more localised detail becomes available at each design stage. Across all design stages, watercourse crossings should seek to cause no increase in flood risk to sensitive receptors and should improve upon the present situation. Additionally, new infrastructure within the functional floodplain should be avoided or limited, and adequate compensatory flood storage provided where appropriate.

8.6 Biodiversity

- 8.6.1 The following mitigation measures will be required for any one of the transport packages or Full Dualling in relation to biodiversity.
- 8.6.2 Further environmental assessment will need to be undertaken to ensure site-level biodiversity constraints and opportunities are identified and thereby allow any negative effects on biodiversity to be avoided or minimised. This includes consideration of designated and undesignated biodiversity. This environmental assessment will need to prioritise delivering nature-based solutions with multiple benefits and achieving positive effects for biodiversity, such as the Scottish Government's agreement to protect at least 30% of Scotland's land and seas by 2030 (also known as the '30 by 30' commitment) and to highly protect 10% ...
- 8.6.3 Where new transport infrastructure is proposed, particularly linear infrastructure, opportunities to provide green or blue infrastructure for biodiversity benefits and climate resilience should be explored for example to provide new wildlife corridors between biodiversity sites. Careful design will be required to ensure any new wildlife corridors support connectivity without facilitating the spread of invasive non-native species. This green or blue infrastructure is also likely to provide benefits for other SEA topics for example, tree planting can provide shading and cooling and potentially intercept airborne particulate matter. A number of potential opportunities are described below:



- Opportunities to enhance habitats with a high carbon sink value and amenity or accessibility value should be explored.
- Opportunities to restore ecosystems and ensure their future protection should be explored.
- If any planting can be done alongside transport infrastructure, native species should be prioritised.
- New transport projects should also look to deliver positive effects for biodiversity by integrating nature into new or retro-fitted infrastructure projects.
- Where new transport infrastructure is proposed, this should seek to reduce overall land-take and avoid sites designated for their biological interest, particularly sites of international and national importance.
- Flood risk management and changing ecosystems must be factored into future development to ensure nature-based adaptation.
- The project should seek to ensure permeability for wildlife. This could include, where appropriate, the provision of mammal crossings.
- The loss of woodland and other notable habitats should be replaced through tailored planting mitigation to ensure the ecological connections between these habitats are maintained or improved.
- Further engagement with NatureScot will be required in relation to the development of any new infrastructure, improvements to existing infrastructure or provision of green and blue infrastructure. This will allow any biodiversity opportunities to be maximised.
- 8.6.4 As discussed in Section 1.5, an HRA is being prepared. Further appraisal of the potential for the transport packages or Full Dualling to result in adverse effects on the integrity of 11 designated European sites is required as part of the next stage of the HRA process of the A96 Corridor Review the Appropriate Assessment (AA). The AA will include detailed mitigation measures to protect European Sites.

8.7 Geology and Soils

- 8.7.1 The following mitigation measures will be required in relation to Geology and Soils:
 - Further environmental assessment will need to be undertaken to ensure site-level development avoids any adverse effects on nationally important carbon-rich soils, deep peat and priority peatland under Class 1 (areas likely to be of high conservation value) and Class 2 (areas of potentially high conservation value and restoration potential), areas important for carbon sequestration and sites designated for their geological interest, such as Geological Conservation Review (GCR) sites.
 - Further environmental assessment will also help identify opportunities to protect and/or enhance the health and biodiversity of soils, and their role in



- helping control biochemical processes for nutrient cycles, GHG emissions, pollution amongst other ecosystem services.
- Where new transport infrastructure is required, prioritise the development of vacant and derelict land to avoid or minimise loss of undisturbed soils. Where soils or peat are unavoidably disturbed, mitigation should be considered which reduces organic matter loss, contamination, erosion risk, compaction/structural degradation and soil biodiversity is maintained.

8.8 Cultural Heritage

- 8.8.1 The role that the historic environment plays in existing transport infrastructure needs to be recognised in the planning of any of the transport packages or Full Dualling.
- 8.8.2 The following mitigation measures will be required in relation to cultural heritage:
 - Further environmental assessment will need to be undertaken to ensure site-level heritage constraints and opportunities are identified. This includes consideration of designated and undesignated heritage assets. For rail infrastructure, the environmental assessment will also need to consider the potential impacts associated with access work, electrification and issues for historic bridges and other heritage assets relating to gauge clearance work. Consultation with HES is likely to be required for site-specific work at heritage assets on the transport network, such as railway stations and road bridges.
 - At the project level, the location and design of transport proposals developed for any one of the transport packages or Full Dualling should avoid direct effects on cultural heritage resources or their setting, where feasible.
 Opportunities to improve the existing setting of cultural heritage resources should also be considered and discussed with Historic Environment Scotland.
 - At the project level, opportunities should be sought to maintain, restore and repurpose historic assets to support sustainable placemaking (in line with the NPF4). This includes adherence to circular economy principles for example, some historic assets could potentially be restored or deconstructed and reused or repurposed rather than demolished and disposed of. This will align with the HES Climate Action Plan 2020-2025 or and help meet Scotland's Zero Waste targets of 70% recycling by 2025 and no more than 5% to landfill by 2025. An emphasis on maintenance, repair and re-use would also align the Sustainable Investment Hierarchy in the Infrastructure Investment Plan of and the Skills Investment Plan.
 - Consider how to maintain or improve existing historic infrastructure, such as the canal network, former railway lines and military roads, to allow it to continue playing a key role in the active travel network. This may require reuse, repair and maintenance, in consultation with HES.
 - Consider how to maintain or improve active travel access to cultural heritage resources.



 Further engagement with HES will be required in relation to the development of any new infrastructure or improvements to existing infrastructure.

8.9 Landscape and Visual Amenity

- 8.9.1 The following mitigation measures will be required for the transport one of the transport packages or Full Dualling in relation to Landscape and Visual Amenity:
 - Embed landscape mitigation into design, including careful route selection and alignments, input into the design of structures and form and extent of earthworks, woodland planting and cutting slopes, with suitable cognisance of the surrounding landscape, and avoiding or reducing the loss of existing natural landscapes.
 - Opportunities to improve the public realm and enhance sense of place and sense of journey should be considered.
 - Opportunities to maximise landscape benefits should be explored, for example through focusing development on vacant and derelict land.
 - In built-up areas it is important to avoid effects on designated areas such as Conservation Areas, or direct effects on buildings/structures listed for their architectural significance or their setting.
 - Transport infrastructure development proposals should be designed to a high quality so that the scale and nature of the development contributes positively to the character and sense of place of the area. Any new signage and infrastructure for pedestrians, cyclists and wheelers should be designed to be sympathetic to local distinctiveness but also be clear and informative.
 - Minimise the loss of existing vegetation wherever practicable and in particular retain mature trees and woodland and ancient woodland. Where loss of existing vegetation is unavoidable, seek to provide replacement planting which corresponds to, or exceeds, the natural capital value of the landscape elements and ecosystem services lost as a result of the intervention in keeping with landscape character.
 - Ensure the design of SuDS features considers opportunities for multifunctionality and delivers amenity and biodiversity benefits as well as attenuation and treatment. Mitigate adverse landscape and visual effects by integrating with surrounding topography, using natural characteristics in design and planting with native aquatic and terrestrial species suitable to local context to provide wildlife habitat and visual interest in keeping with landscape character.
 - Take account of local species composition, forest and woodland strategies, landscape character, climate change adaptation and biosecurity threats when developing planting proposals.



- Develop planting and landscape proposals that integrate with the surrounding landscape and secure positive effects for biodiversity and landscape character.
 Prioritise native and local species in planting proposals.
- Maintain and, where feasible, enhance ecological, landscape, active travel and recreational connectivity and minimise fragmentation.
- Consider and contribute towards local and strategic biodiversity priorities through planting proposals.
- Secure adequate land to allow integrated solutions. This may include allowance for grading-out embankments and cuttings to smoothly transition into surrounding landforms, or to later return land to agriculture and minimise the final scheme footprints.
- Retain existing features and re-use site-won materials for example, approximately balancing cut and fill, storing soils appropriately for re-use and translocating some plants and habitats.
- Design for low maintenance and management of soft estate.
- Preserve vistas/focal points from key viewpoints and maintain or enhance the
 evolving narrative of any existing scenic routes (walking, wheeling, cycling,
 hiking or driving), and ensure long-term management of these facilities to
 maintain views.
- Avoid or minimise light pollution to reduce any negative landscape, visual and biodiversity effects.
- Consult with NatureScot and local councils about potential landscape constraints and opportunities associated with specific interventions.

8.10 Further Environmental Assessment

8.10.1 As discussed in the sections above, further environmental assessment will be required at the project level. Individual transport proposals that arise from the A96 Corridor Review should be subject to the usual consideration through the relevant consenting process, supplemented where appropriate by Environmental Impact Assessment (EIA), Habitats Regulations Appraisal (HRA), and via site controls and Environmental Management Plans. This environmental assessment will therefore enable the clear identification of constraints, opportunities and ecosystem services at the site/project level, which in turn will allow the development of targeted and detailed mitigation, enhancement and monitoring measures.



9. Monitoring

9.1 Overview

- 9.1.1 Section 19 of the 2005 Environmental Assessment (Scotland) Act requires the Responsible Authority, Transport Scotland, to monitor significant environmental effects arising as a result of the implementation of the plan, programme or strategy. The purpose of the monitoring is to identify any unforeseen adverse effects at this early planning stage and to enable appropriate remedial action to be taken.
- 9.1.2 There is a wide range of existing monitoring programmes in place at the national and local level to monitor environmental status and assess performance against established environmental indicators, many of which are relevant to the A96 Corridor Review. The final environmental monitoring framework for the A96 Corridor Review will be included in the SEA Post Adoption Statement. This will refer to existing monitoring regimes wherever possible, to avoid any duplication of monitoring.



10. Next Steps

10.1 Overview

- 10.1.1 The feedback received in relation to the Draft Environmental Report consultation will be reviewed and used to inform the finalised version of the Environmental Report and will also inform the SEA Post Adoption Statement.
- 10.1.2 The key SEA milestones are as follows:
 - Consultation on the Draft (public consultation version) Environmental Report for 12 weeks
 - Finalise Environmental Report
 - SEA Post Adoption Statement.



Appendices



Appendix A. Environment Figures

The Environment Figures can be accessed via the following link:

Appendix A. Environment Figures



Appendix B. Plans, Programmes and Strategies Review



Appendix B: Plans, Programmes and Strategies Review

1. Introduction

- 1.1.1 This appendix provides a review of national, regional and local Plans, Programmes and Strategies (PPS) of relevance to the A96 Corridor Review Strategic Environmental Assessment (SEA) and assesses which SEA topics they are of relevance to.
- 2.1.1 National PPS have been grouped under the assessment criteria for the Scottish Transport Appraisal Guidance (STAG) criteria to which they most directly relate. The list of regional and local PPS has been identified from a review of publications by the authority areas within the scope of the study area. A matrix of PPS shown in relation to relevant SEA topics is provided in Table B-1 to Table B-8.

1



Table B-1: National - Summary of Plans, Programmes and Strategies against SEA Topics

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
National Transport Strategy 2 (NTS2) 2020	Yes	Yes	No	No	Yes	No	No	No
National Transport Strategy 2 Delivery Plan 2022 to 2023	Yes	Yes	No	No	Yes	No	No	No
Strategy Transport Projects Review 2 (2022)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
National Planning Framework 4 (NPF4) 2023	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Just Transition – A Fairer, Greener Scotland 2021	Yes	Yes	No	No	No	No	No	No

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
A National Mission with Local Impact – Infrastructure Investment Plan for Scotland 2021-22 to 2025-26	Yes	Yes	Yes	Yes	Yes	No	No	Yes
A Fairer, Greener Scotland: Programme for Government 2021-2022	Yes	Yes	Yes	No	Yes	No	No	Yes

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Table B-2: Environment - Summary of Plans, Programmes and Strategies against SEA Topics

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Scotland's Third Land Use Strategy 2021- 2026 – Getting the best from our land (2021)	No	Yes	Yes	Yes	Yes	No	Yes	No
Scotland's Biodiversity – It's in Your Hands	Yes	No	Yes	Yes	Yes	No	Yes	No
2020 Challenge for Scotland's Biodiversity	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Scottish Biodiversity Strategy Post- 2020: A Statement of Intent	No	No	Yes	No	Yes	No	No	No

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Delivering Scotland's Ambition to Secure Positive Effects for Biodiversity 2020	No	No	Yes	No	Yes	No	No	No
The UK Forestry Standard 2017	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Scotland's Forestry Strategy 2019-2029	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
The Scottish Government's Policy on Control of Woodland Removal 2009	Yes	No	Yes	Yes	Yes	Yes	Yes	No
Historic Environment Policy for Scotland 2019	No	No	No	No	No	Yes	Yes	No

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Our Place in Time - The Historic Environment Strategy for Scotland (2014)	No	No	No	No	No	Yes	Yes	No
The Environment Strategy for Scotland: Visions and Outcomes 2020	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Scotland's National Peatland Plan 2015	No	No	Yes	Yes	Yes	No	No	No
Scottish Soil Framework (2009)	No	No	No	Yes	No	No	No	No

Table B-3: Climate Change - Summary of Plans, Programmes and Strategies against SEA Topics

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Scotland's Contribution to the Paris Agreement 2021	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Climate Change Plan – Third Report on Proposals and Policies 2018- 2032	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Update to the Climate Change Plan 2018-2032 (2020)	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Scotland's Energy Strategy Position Statement 2021	Yes	No	No	No	No	No	No	Yes

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
The Scottish Energy Strategy: The Future of Energy in Scotland (2017)	Yes	No	No	No	No	No	No	Yes
Switched on Scotland Phase Two: An Action Plan for Growth (2013)	Yes	No	No	No	No	No	No	No
Climate Ready Scotland: Second Scottish Climate Change Adaptation Programme 2019-2024	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Low Carbon Scotland: Meeting the Emissions Reduction Targets 2010- 2022 (The Report on Proposals and Policies)	Yes	Yes	Yes	Yes	Yes	No	No	No
A Route Map to Achieve a 20% Reduction in Car Kilometres by 2030 (2022	Yes	Yes	No	No	No	No	No	No
Clean Air Strategy 2018 (DEFRA)	Yes	No	No	No	No	No	No	No
Carbon Account for Transport No.12: 2020 Edition	Yes	No	No	No	No	No	No	No

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Cleaner Air for Scotland 2: Towards a Better Place for Everyone (2021)	Yes	Yes	No	No	No	No	No	No
UK Climate Projections 2018	Yes	No	No	No	No	No	No	No
Decarbonising the Scottish Transport Sector 2019	Yes	No	No	No	No	No	No	No
Scotland's Climate Assembly: Recommend- ations for Action - Scottish Government Response	Yes	No	No	No	No	No	No	No
Air Quality Strategy for England, Scotland, Wales and Northern Ireland	Yes	Yes	No	No	No	No	No	No

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Local Air Quality Management Policy Guidance 2016	Yes	Yes	No	No	No	No	No	No
The Ten Point Plan for a Green Industrial Revolution (2020)	Yes	Yes	No	No	No	No	No	No

Table B-4: Health, Safety and Wellbeing - Summary of Plans, Programmes and Strategies against SEA Topics

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Fairer Scotland Action Plan 2016	No	Yes	No	No	No	No	No	No
Creating Places: A policy statement on architecture and place for Scotland (2013)	No	Yes	No	No	No	Yes	Yes	Yes
Place Principle (2019)	No	Yes	No	No	No	No	No	No
People, Place and Landscape: A Position Statement (2019)	No	Yes	No	No	No	Yes	Yes	No
Fitting Landscapes: Securing More Sustainable Landscapes 2014	No	Yes	Yes	No	No	Yes	Yes	No

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Covid Recovery Strategy: for a fairer future 2021	No	Yes	No	No	No	No	No	No
Let's Get Scotland Walking: The National Walking Strategy (2014)	No	Yes	No	No	No	No	No	No
A More Active Scotland: Scotland's Physical Activity Delivery Plan	No	Yes	No	No	No	No	No	No
A Long-Term Vision for Active Travel in Scotland 2030	Yes	Yes	No	No	No	No	Yes	No
Active Travel Framework 2020	No	No	No	No	No	No	No	No
Cycling Action Plan for Scotland 2017-2020 (2017)	Yes	Yes	No	No	No	No	No	No

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Scotland's Road Safety Framework to 2030	No	Yes	No	No	No	No	No	No
Scottish Trunk Road Network Asset Management Strategy (2018)	Yes	Yes	No	No	No	No	No	Yes



Table B-5: Economic - Summary of Plans, Programmes and Strategies against SEA Topics

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Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Economic Recovery Implementation Plan 2020	No	Yes	No	No	No	No	No	No
Scottish Planning Policy (SPP) 2020	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Indicative Regional Spatial Strategies – Summary of Emerging Work 2020	Yes	Yes	Yes	No	No	No	Yes	No
A Low Carbon Economic Strategy for Scotland (2010)	Yes	Yes	Yes	No	Yes	No	No	No
Making Things Last: a circular economy strategy for Scotland (2016)	No	Yes	No	No	No	No	No	Yes

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Scotland's Economic Strategy 2015	No	Yes	No	No	No	No	No	Yes
Scotland's National Strategy for Economic Transformation: Delivering Economic Prosperity (2022)	Yes	Yes	No	No	No	No	No	Yes



Table B-6: Equality and Accessibility - Summary of Plans, Programmes and Strategies against SEA Topics

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Going Further – Scotland's Accessible Travel Framework 2016	No	Yes	No	No	No	No	No	No
The Scottish Ferry Service: Ferries Plan (2013-2022)	No	Yes	No	No	Yes	No	No	Yes
Smart and Integrated Ticketing and Payments - Delivering Strategy 2018	No	Yes	No	No	No	No	No	No
A Connected Scotland: our strategy for tackling social isolation and loneliness and building stronger social connections 2018	No	Yes	No	No	No	No	No	No

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Future Intelligent Transport Systems Strategy (2017)	No	Yes	No	No	No	No	Yes	Yes
Union Connectivity Review: Final Report – November 2021	No	Yes	No	No	No	No	Yes	Yes



Table B-7: Regional - Summary of Plans, Programmes and Strategies against SEA Topics

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
HITRANS – Regional Transport Strategy 2017	Yes	Yes	No	No	Yes	No	No	No
Nestrans – Regional Transport Strategy for the North East of Scotland 2021	Yes	Yes	No	No	No	No	Yes	No
Regional Economic Strategy for the North East 2015	Yes	Yes	No	No	No	No	No	Yes



Table B-8: Local - Summary of Plans, Programmes and Strategies against SEA Topics

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
The A96 Growth Corridor Development Framework: Creating distinctive green Highland places 2007	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
The Highland Council Local Transport Strategy 2011- 2014 (2010)	No	Yes	No	No	No	No	Yes	Yes
Highland-wide Local Development Plan 2012	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Highland Historic Environment Strategy 2013	No	No	No	No	No	Yes	Yes	No

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Inner Moray Firth Local Development Plan 2015	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
The Highland Council Supplementary Guidance: A96 Corridor Green Network 2011	No	Yes	Yes	No	No	No	Yes	No
The Highland Council Supplementary Guidance: Green Networks 2013	No	No	Yes	No	Yes	No	Yes	No
The Highland Council Supplementary Guidance: Trees, Woodlands & Development 2013	No	No	Yes	No	No	No	No	No

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
The Highland Council Supplementary Guidance: Physical Constraints 2013	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
The Highland Council Supplementary Guidance: Protected Species 2013	No	No	Yes	No	No	No	No	No
The Highland Council Supplementary Guidance: Flood Risk & Drainage Impact 2013	No	No	No	No	Yes	No	No	No
The Highland Council Supplementary Guidance: Sustainable Design Guide 2013	No	Yes	No	No	No	No	No	No

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Cairngorms National Park Local Development Plan 2021	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cairngorms National Park Local Development Plan 2021 Non- Statutory Guidance: Policy 3 – Design and Placemaking	No	Yes	No	No	No	Yes	Yes	No
Moray Local Transport Strategy 2011	Yes	Yes	No	No	Yes	No	No	Yes
Moray Local Development Plan: Open Space Strategy 2018	Yes	Yes	Yes	No	No	No	Yes	No
Moray Local Development Plan 2020	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Moray Council Active Travel Strategy 2022- 2027 (Consultation Draft)	Yes	Yes	No	No	No	No	No	No
Moray Woodland & Forestry Strategy Supplementary Guidance 2018	No	Yes	Yes	No	No	No	Yes	No
Moray Local Development Plan 2020 Planning Policy Guidance, Part 1, 2 and 3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Moray Onshore Wind Energy Non-Statutory Guidance 2020	Yes	No	No	No	No	No	No	No

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Moray Flood Risk and Drainage Impact Assessment for New Developments 2020	No	Yes	No	No	Yes	No	No	No
Aberdeenshire Local Development Plan 2017	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Aberdeenshire Local Development Plan2023	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Aberdeenshire Council Local Transport Strategy 2012	Yes	Yes	No	No	No	No	No	No

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Aberdeenshire Local Development Plan Supplementary Guidance 5 2017: Local Nature Conservation Sites	No	No	Yes	Yes	Yes	No	Yes	No
Aberdeenshire Forestry and Woodland Strategy 2017	Yes	No	Yes	Yes	No	No	Yes	No
Aberdeen Local Development Plan 2017	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Proposed Aberdeen Local Development Plan 2020	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Aberdeen City Local Transport Strategy 2016- 2021	Yes	Yes	No	No	No	No	No	Yes

Plan/Strategy	Air Quality/ Climatic Factors	Population and Human Health	Biodiversity	Soils	Water Environment	Cultural Heritage	Landscape and Visual	Material Assets
Aberdeen Sustainable Urban Mobility Plan 2019	Yes	Yes	No	No	No	No	No	Yes
Aberdeen Active Travel Action Plan 2021-2026	No	Yes	No	No	No	No	No	No

2. National PPS

2.1A range of related National PPS are displayed in Table B-9, with their corresponding document summaries and relevant SEA topics.

Table B-9: Related National PPS, Document Summaries, and Relevant SEA Topics.

All STAG Criteria

National

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
National Transport Strategy 2 (NTS2) (2020)¹ Publishing Authority: Transport Scotland	NTS2 sets out a vision for Scotland's transport system for the next 20 years to protect the climate and improve lives through a sustainable, inclusive and accessible transport system. The strategy includes four priorities to support the vision: Reduces inequalities Takes climate action Helps deliver inclusive economic growth Improves our health and wellbeing NTS2 requires a Sustainable Travel Hierarchy, and Sustainable Investment Hierarchy to be used to inform investment decisions on transport which are integral to prioritising investments which support the transition to net zero and considering the whole lifecycle of transport.	Air Quality/ Climatic Factors, Population and Human Health, Water Environment
National Transport Strategy 2 (NTS2) Second Delivery Plan 2022 to 2023 (2022) ² Publishing Authority: Transport Scotland	The Second NTS 2 Delivery Plan sets out the actions that Transport Scotland will take over the next two years, as part of delivering on their 20-year vision committed to in the NTS2 – to deliver a transport system that is sustainable, inclusive, safe and accessible. The actions in the Delivery Plan reinforce the Sustainable Travel and Investment Hierarchies and promote walking, wheeling and cycling, and shared transport options in preference to private car use.	Air Quality/ Climatic Factors, Population and Human Health, Water Environment
Strategic Transport Projects Review 2 2022 ³	The second strategic transport review will inform transport investment in Scotland and help to deliver the visions, priorities and outcomes set out in the NTS2. Covering a 20-year period (2022-2042), STPR2 takes	All SEA topics

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Publishing Authority: Transport Scotland	into consideration the transport needs of communities across Scotland, examining provisions available for active travel (walking, cycling, wheeling) as well as bus, rail, road and ferry links for both commercial and personal use.	
	 STPR2 has five key objectives that it aims to address: Takes climate action Addresses inequalities & accessibility Improved health & wellbeing Supports sustainable economic growth Increases safety & resilience. 	
	Public consultation on the STPR2 Technical Report and its accompanying SEA (Jacobs/AECOM, 2022b) ended in April 2022. The final STPR2 SEA Environmental Report and Post Adoption Statement were published in December 2022.	
National Planning Framework 4 (NPF4) (2023) ⁴ Publishing Authority: Scottish Government	The Scottish Government's Programme for Government highlights the significance of the National Planning Framework (NPF) to put planning at the heart of delivering green, inclusive and long-term sustainable development in Scotland. The NPF includes a long-term spatial strategy to 2045. This reflects the range of Scottish Government policies, including the Infrastructure Investment Plan (IIP) 2021-22 to 2025-26. It will guide spatial development, set out national planning policies, designate national developments and highlight regional spatial priorities.	All SEA Topics
	The National Planning Framework 4 was adopted in February 2023. NPF4 sets out a need to "embrace and deliver radical change to tackle and adapt to climate change, restore biodiversity loss, improve health and wellbeing, build a wellbeing economy and create great places." The NPF4 recognises the need to plan our places in a way that reduces the need to travel, especially by unsustainable modes, and promotes a shift to active and sustainable travel.	
	The Revised Draft NPF4 embeds, for the first time, the NTS2 Sustainable Travel Hierarchy and Sustainable	

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Just Transition – A Fairer, Greener Scotland (2021) ⁵ Publishing Authority: Scottish Government	Investment Hierarchy into planning decision making and development planning. The Revised Draft NPF4 spatial strategy sets out a local living approach whereby future places, homes and neighbourhoods will be connected, liveable, thriving places with sustainable travel options and where car dominance is reduced. To meet many of the future needs of society it is crucial that services and facilities are easily and affordably accessed. Therefore, Revised Draft NPF4 advocates the infrastructure-first approach in planning for future development to provide communities with the opportunity to travel sustainably from the outset. The STPR2 and the Islands Connectivity Plan represent the national transport investment needed to support NPF4. This document sets out the Scottish Government's long-term vision for a just transition and provides details on the National Just Transition Planning Framework. It will inform the development of the National Strategy for Economic Transformation, the refreshed Energy Strategy, the delivery of subsequent specific Just Transition Plans and the next Climate Change Plan. "A just transition is both the outcome — a fairer, greener future for all — and the process that must be undertaken in partnership with those impacted by the transition to net zero. Just transition is how we get to a net zero and climate resilient economy, in a way that delivers fairness and tackles inequality and injustice." (p.5) Four overarching themes are: Planning for a managed transition Equipping people with the knowledge and skills they need, while putting in place safety nets to ensure no-one is left behind Involving those who will be impacted - co-design and collaboration Spreading the benefits of the transition widely, while making sure the costs do not burden those least able to pay.	Air Quality/ Climatic Factors, Population and Human Health
<u>A National</u>	The Infrastructure Investment Plan 2021-22 to 2025-	Air Quality/

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Mission with Local Impact – Infrastructure Investment Plan for Scotland 2021-22 to 2025-26 (2021) ⁶ Publishing Authority: Scottish Government	 26, published on 4 February 2021, focuses on three core strategic themes for guiding investment decisions in Scotland: Enabling the transition to net zero emissions and environmental sustainability Driving inclusive economic growth Building resilient and sustainable places The IIP also introduces the Common Investment Hierarchy, which is aligned to Transport Scotland's Sustainable Investment Hierarchy. This thereby provides overall alignment between the outcomes of the STPR2 and the Scottish Government's investment priorities. The investment in infrastructure is targeted to maximise wider economic benefits and the delivery of the National Outcomes. The investment is often made by the Scottish Government or in partnership with local government. Where possible, however, the Scottish Government looks to create opportunities and the right conditions to leverage additional private sector investment across Scotland. 	Climatic Factors, Population and Human Health, Biodiversity, Soils, Water Environment, Material Assets
A Fairer, Greener Scotland: Programme for Government 2021-2022 (2021) ⁷ Publishing Authority: Scottish Government	Sets out the Scottish Government's legislative programme and priorities for 2021-2022, guided by Scotland's National Performance Framework. Drafted within the context of the COVID-19 pandemic, the climate emergency, and following the cooperation agreement between the Scottish Government and the Scottish Green Party, the programme is intended to advance the delivery of a fairer, greener and more prosperous Scotland. It commits to actions intended to: • establish a caring nation (with a vision for health and social care) • create opportunity, supporting young people and promoting a fair and equal society • securing a net zero nation • creating an economy that works for all Scotland's people and places • living better (supporting thriving, resilient and diverse communities)	All SEA topics

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
	 Establish Scotland in the world (with a referendum on independence). 	
	It follows from previous PfGs, in setting out a 'Mission Zero' for transport, with priorities related to decarbonising aviation and rail, £500m investment in bus priority infrastructure, investment in low emission vehicles, active travel, and introduction of Low Emission Zones in the four main cities.	

Environment

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Scotland's Third Land Use Strategy 2021- 2026 – Getting the best from our land (2021) ⁸ Publishing Authority: Scottish Government	This sets out the Scottish Government's long-term vision for sustainable land used in Scotland as well as the objectives and key policies for delivery. "This third Land Use Strategy is intended to help stimulate and inform the growing national, regional and local conversations on the future of our land, who it benefits and how it is used, managed and owned. It recognises that determining our national, regional and local priorities and delivering change at the scale required is, and will continue to be, grounded in social processes that will involve discussions by people with differing views and interests." (p.7)	All SEA topics
Scotland's Biodiversity: It's in Your Hands (2004) Publishing Authority: Scottish Executive	Scotland's Biodiversity is a 25-year strategy to conserve and enhance biodiversity in Scotland. Alongside implementation plans it seeks to address biodiversity themes such as: cross cutting issues; interpretation, communication and education; urban biodiversity; rural biodiversity; marine biodiversity and local delivery. Actions to meet this aim are grouped under the following five major strategic objectives: • Species & Habitats: To halt the loss of biodiversity and continue to reverse previous losses through targeted action for species and habitats	Air Quality/ Climatic Factors, Biodiversity, Soils, Water Environment, Landscape and Visual

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
2020 Challenge for Scotland's Biodiversity (2013) ¹⁰ Publishing Authority: Scottish Government	 People: To increase awareness, understanding and enjoyment of biodiversity, and engage many more people in conservation and enhancement Landscapes & Ecosystems: To restore and enhance biodiversity in all Scotland's urban, rural and marine environments through better planning, design and practice Integration & Co-ordination: To develop an effective management framework that ensures biodiversity is taken into account in all decision making Knowledge: To ensure that the best new and existing knowledge on biodiversity is available to all policy makers and practitioners. The 2020 Challenge accompanies Scotland's Biodiversity: It's in Your Hands and focuses on how the Scottish Government, its public agencies, Scottish business and others can contribute to the Strategy's aims as well as supporting economic growth through protecting biodiversity and harnessing nature. Scotland's 2020 Challenge aims to: Protect and restore biodiversity on land and in our seas, and to support healthier ecosystems Connect people with the natural world, for their health and wellbeing and to involve them more in decisions about their environment Maximise the benefits for Scotland of a diverse natural environment and the services it provides, contributing to sustainable economic growth. (p.6) 	Air Quality/ Climatic Factors, Biodiversity, Soils, Water Environment, Landscape and Visual, Material Assets
Scottish Biodiversity Strategy Post- 2020: A Statement of Intent (2020) ¹¹	The Biodiversity Strategy Statement of Intent provides high level detail on Scotland's ambitions to tackling biodiversity loss and impacts of climate change. Detail is also provided on how these ambitions will be used to develop a post-2020 biodiversity strategy and delivery plan.	Biodiversity, Soils, Water Environment
Publishing Authority: Scottish Government	The Statement of Intent outlines priorities for biodiversity in Scotland and the impact of climate change, including publishing a new high level strategy which takes account of the new global biodiversity	

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
	framework, goals and targets; highlighting the need for new locally driven projects to improve ecological connectivity across Scotland, extending nature protected areas to at least 30% of Scotland by 2030, and securing positive effects for biodiversity through the National Planning Framework 4.	
The UK Forestry Standard 5th Edition (2024) ¹² Publishing Authority: Forestry Commission	The UK Forestry Standard (UKFS) is the standard for sustainable forest management within the UK. It outlines context related to forestry within the UK, the UK Government's approach to sustainable forest management, outlines requirements and standards and monitoring. The UKFS is applicable to all forest management and to all forest types and management systems in the UK. The Forestry Standards requirements are split into legal requirements and good forestry practice requirements. These are then categorised into different elements of sustainable forest management, including: General Forestry Practice Biodiversity Climate Change Historic Environment Landscape People Soil Water.	Air Quality/ Climatic Factors, Biodiversity, Soils, Water Environment, Cultural Heritage, Landscape and Visual, Material Assets
Scotland's Forestry Strategy 2019-2029 (2019) ¹³ Publishing Authority: Scottish Government	The Forestry Strategy for Scotland provides a 50-year vision for Scotland's forests and woodlands and outlines priority areas over 10 years. The Strategy supports the aims of the Scottish Government's National Performance Framework and the Land Use Strategy in respect of valuing and enhancing Scotland's environment and promoting responsible management of woodland resources. The vision set out by the Forestry Strategy is that: "In 2070, Scotland will have more forests and woodlands, sustainably managed and better integrated with other land uses. These will provide a more resilient, adaptable	All SEA topics

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
	resource, with greater natural capital value, that supports a strong economy, a thriving environment, and healthy and flourishing communities." (p.15).	
	In order to achieve this vision, the following objectives are set out in the Strategy to be delivered over a 10-year period from 2019:	
	 Increase the contribution of forests and woodlands to Scotland's sustainable and inclusive economic growth Improve the resilience of Scotland's forests and 	
	 woodlands and increase their contribution to a healthy and high quality environment Increase the use of Scotland's forest and woodland resources to enable more people to improve their health, well-being and life chances. (p.16) 	
The Scottish Government's Policy on Control of Woodland	The Control of Woodland Removal document provides policy to assist in decisions regarding woodland removal in Scotland.	Air Quality/ Climatic Factors, Biodiversity,
Removal (2009) ¹⁴ Publishing Authority: Forestry Commission	It sets out guiding principles, where there is a strong presumption in favour of protecting woodland resources, and that removal should be allowed only where it would achieve significant additional public benefits, which may include consideration of proposals for compensatory planting.	Soils, Water Environment, Cultural Heritage, Landscape and Visual
Historic Environment Policy for Scotland (HEPS) (2019) ¹⁵	The policy statement replaces the Historic Environment Scotland Policy (HESPS) (2016) and provides direction on decision-making that affects the historic environment. There are six policies within the document which define how the historic environment should be managed including:	Cultural Heritage, Landscape and Visual
Publishing Authority: Historic Environment Scotland	 Decisions affecting the historic environment should be informed by an inclusive understanding of its breadth and cultural significance. Decisions affecting the historic environment should ensure that its understanding and enjoyment as well as its benefits are secured for present and future generations. 	

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
	 Plans, programmes, policies and strategies and the allocation of resources should protect and promote the historic environment. Where detrimental impacts on the historic environment arising from these are identified and unavoidable, steps should be taken to demonstrate that alternatives have been explored and mitigation measures put in place. When considering changes to specific assets and their context, detrimental impacts should be avoided. Where appropriate opportunities for enhancement should be sought. Where detrimental impacts on the historic environment are unavoidable, these should be minimised, and steps should be taken to demonstrate that alternatives have been explored and mitigation measures put in place. Decisions affecting the historic environment should contribute to the sustainable development of communities and places. Decisions affecting the historic environment should demonstrate how everyone has had the opportunity to enjoy it, to contribute to our shared knowledge and to influence decision-making. 	
Our Place in Time - The Historic Environment Strategy for Scotland (2014) ¹⁶ Publishing Authority: Scottish Government	Scotland's Historic Environment Strategy is a high-level framework which sets out a 10-year vision for the historic environment. The key outcome is to ensure that the cultural, social, environmental and economic value of Scotland's historic environment continues to make a strong contribution to the wellbeing of the nation and its people. It was developed collaboratively and identified the need for strategic priorities to help align and prioritise sector activity towards a common goal.	Cultural Heritage, Landscape and Visual
The Environment Strategy for Scotland: Visions and Outcomes (2020) ¹⁷ Publishing Authority: Scottish	The Environment Strategy creates an overarching framework for Scotland's existing environmental strategies and plans, including the Climate Change Plan. These will be reviewed over time, to reflect international targets and other policy developments. The vision and outcomes set out in this document will help to guide the future development and delivery of these strategies and plans by establishing the long-term direction and	Air Quality/ Climatic Factors, Population and Human Health

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Government	shared goals. "Our Vision – By 2045: By restoring nature and ending Scotland's contribution to climate change, our country is transformed for the better – helping to secure the wellbeing of our people and planet for generations to come." (p.3) The Plan recognises the wide range of benefits provided	Biodiversity, Soils, Water Environment Landscape and Visual, Material Assets Biodiversity,
Scotland's National Peatland Plan (2015) ¹⁸ Publishing	by healthy peatlands and sets out a number of aims to protect it. Principal aim:	Soils, Water Environment
Authority: NatureScot	 'Protect, manage and restore peatlands to maintain their natural functions, biodiversity and benefits.' The supporting aims are to: Protect those areas of peatland currently in good condition and supporting their potential range of ecosystem functions Enhance ecosystem resilience to climate change through appropriate management Restore peatland ecosystem functions and biodiversity, evaluating and understanding the benefits to help inform future decisions Secure greater peatland restoration capabilities and understanding of these amongst land managers, developers, advisers and the public Ensure peatland values are reflected in the support given to those who manage and restore them; and Demonstrate and communicate the wider public benefits of healthy peatland landscapes and peatland restoration. 	
The Scottish Soil Framework (2009) ¹⁹ Publishing Authority: Scottish Government	The Scottish Soil Framework sets out the vision for soil protection in Scotland. It acknowledges the multiple functions of soils and includes a vision that soils be recognised as a vital part of our economy, environment, and heritage, and be safeguarded for existing and future generations. It notes that while Scotland's soils are generally in good health, they face two significant	Soils

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
	pressures: climate change and the loss of organic matter. Aim:	
	 Promote the sustainable management and protection of soils consistent with the economic, social and environmental needs of Scotland. 	
	Vision:	
	 Soils are recognised as a vital part of our economy, environment and heritage, to be safeguarded for existing and future generations. 	

Climate Change

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Scotland's Contribution to the Paris Agreement (2021) ²⁰ Publishing Authority: Scottish Government	The Scottish Government is committed to raising global climate ambition and action at all levels from all sections of society. As part of their commitment ahead of COP26 in Glasgow they published their indicative n nationally determined contribution in the spirit of the Paris Agreement to encourage others to similarly set out their climate change policies and plans and in order to support increased individual and collective ambition and action. "Our aim is that setting out our framework and commitments on climate mitigation and adaptation in this way can support the learning, openness and working alongside each other we all require, as together we can tackle those challenges and move to a Net Zero, fairer and more sustainable future." (p.2)	All SEA Topics
Climate Change Plan – Third Report on Proposals and Policies 2018-	The Climate Change Plan (CCP) provides an update on previous targets and sets out ambitious decarbonisation plans up to 2032. The CCP sets out how Scotland will meet the emissions reduction targets under the current legislation. It should be noted that this plan was	All SEA topics

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
2032 (2018) ²¹ Publishing Authority: Scottish Government	 published prior to the current statutory target for net zero greenhouse gas emissions by 2045 being brought into legislation in 2019. The plan sets out how Scotland can deliver its target of 66% emissions reductions for the period 2018-2032. Part one sets out the context for the Scottish Government's climate change proposals and policies. The Scottish Government's statutory duties are covered in Part Two, alongside annual emissions targets to 2032. Part three provides detailed information on the emissions envelopes and emissions reduction trajectories for each sector. The overall vision for Scotland's Climate Change Plan 2018-2032 is that "by 2032, Scotland will have reduced its emissions by 66% against 1990 levels" (p.22). As part of the vision, the Plan states three main outcomes which should be achieved by 2032. These are: A healthier society An enhanced and protected natural environment A diversified, resilient and sustainable economy. 	
Update to the Climate Change Plan 2018-2032 (2020) ²² Publishing Authority: Scottish Government	The update to the climate change plan builds upon the work undertaken by the last two Programmes for Government (2020-2021 and 2019-2020) which have committed to delivering a Green New Deal, outlining how investments can help in reducing climate change. The update focuses on a Green Recovery from the COVID-19 pandemic and as such provides actions which align with the new emissions reductions targets up to 2032 since the previous plan. The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 received Royal Assent in October 2019 and set revised annual and interim emissions reduction targets to achieve the net zero by 2045 target set by the Scottish Government. The Scottish Government's vision for 2045 is "one of a society that prioritises the environment and the	All SEA topics

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
	wellbeing of its people" (p.21).	
	By 2045 the vision, in line with NTS2, includes "having a sustainable, inclusive, safe and accessible transport system, helping deliver a healthier, fairer and more prosperous Scotland for communities, business and visitors" (p.118).	
Scotland's Energy Strategy Position Statement (2021) ²³ Publishing Authority: Scottish Government	The Energy Strategy position statement provides an overview of our key priorities for the short to mediumterm in ensuring a green economic recovery, whilst remaining aligned to our net zero ambitions, in the lead up to COP26. Key priorities for energy: Decarbonisation of Heat and Energy Efficiency Local Energy Energy Transition Renewables Consumers.	Air Quality/ Climatic Factors, Material Assets
The Scottish Energy Strategy: The Future of Energy in Scotland (2017) ²⁴ Publishing Authority: Scottish Government	Scotland's Energy Strategy sets out the Scottish Government's vision for energy generation and consumption to 2050. The strategy centres around three themes: meeting our energy supply needs, transforming Scotland's energy use and smart local energy systems. The Scottish Governments Vision for energy in Scotland is: "A flourishing, competitive local and national energy sector, delivering secure, affordable, clean energy for Scotland's households, communities and businesses."	Air Quality/ Climatic Factors, Material Assets
Switched on Scotland Phase Two: An Action Plan for Growth (2013) ²⁵ Publishing authority:	The action plan outlines the activities that Transport Scotland will undertake in the second phase of implementing the Switched on Scotland Roadmap, which sets out a long-term vision and strategic approach to advance widespread adoption of electric vehicles. The plan defines 10 outcome-focused actions which will collectively deliver three positive impacts, namely: decreased costs, enhanced convenience, and a	Air Quality/ Climatic Factors

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Transport Scotland	change in culture where electric vehicles are preferred to fossil fuelled vehicles.	
Climate Ready Scotland: Second Scottish Climate Change Adaptation Programme 2019-2024 (2019) ²⁶ Publishing Authority: Scottish Government	The programme describes an 'outcome-based' approach. This includes: "Outcome 3: Our inclusive and sustainable economy is flexible, adaptable and responsive to the changing climate". Part 3: Outcome 3 includes the following policies that relate to soil: Sub-outcome 3.1 Soil and Nutrient Network (p.96) Farming with Nature (p.96) Economy (p.115) The programme also includes various other policies that relate less directly to soil.	Air Quality/ Climatic Factors, Biodiversity, Soils, Water Environment Landscape and Visual, Material Assets
Low Carbon Scotland: Meeting the Emissions Reduction Targets 2010- 2022 (The Report on Proposals and Policies) (2011) ²⁷ Publishing Authority: Scottish Government	This report sets out how Scotland can deliver annual targets for reductions in emissions to 2022, including a 42% reduction in emissions by 2020 compared to 1990. The report also outlines the essential elements for monitoring progress towards meeting targets, and monitoring progress on the implementation of proposals and policies (p.7). The vision set out in this report is for a low carbon society that will use less energy and fewer resources at home, at work, on the move and across the public sector.	Air Quality/ Climatic Factors, Population and Human Health, Biodiversity, Water Environment
Clean Air Strategy 2019 (2019) ²⁸ Publishing Authority: Department for Environment, Food & Rural Affairs	The Clean Air Strategy shows how the UK will tackle all sources of air pollution, making the air healthier to breathe, protecting nature and boosting the economy. It sets out a wide range of actions on which the UK Government is consulting and shows how devolved administrations intend to make their share or emissions.	Air Quality/ Climatic Factors
Carbon Account for Transport No.12: 2020	The Carbon Account for Transport (CAT) provides a balance sheet for Scotland's greenhouse gas emissions	Air Quality/ Climatic

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Edition (2020) ²⁹ Publishing Authority: Transport Scotland	due to transport.	Factors
Cleaner Air for Scotland 2: Towards a Better Place for Everyone (2021) ³⁰ Publishing Authority: Scottish Government	Cleaner Air for Scotland 2 - Towards a Better Place for Everyone is Scotland's second air quality strategy, setting out how the Scottish Government and its partner organisations propose to further reduce air pollution to protect human health and fulfil Scotland's legal responsibilities over the period 2021-2026. CAFS2 was published in July 2021, accompanied by a Delivery Plan, and replaces Cleaner Air for Scotland – The Road to a Healthier Future (CAFS) which was published in 2015. CAFS2 aims to achieve the ambitious vision for Scotland "to have the best air quality in Europe".	Air Quality/ Climatic Factors, Population and Human Health
UK Climate Projections (2018) ³¹ Publishing Authority: MetOffice	Explores how the UK's climate could change over the next 100 years under three different greenhouse gas emission scenarios and provides guidance for climate change risk assessments and adaptation plans.	Air Quality/ Climatic Factors
A Route Map to Achieve a 20 Percent Reduction in Car Kilometres by 2030 (2022) 32 Publishing Authority: Scottish Government and the Convention of Scottish Local Authorities (COSLA)	In January 2022 the Scottish Government and the Convention of Scottish Local Authorities (COSLA) developed a Route Map to deliver the shift in travel behaviours required to meet the 20% reduction target, recognising the need for ongoing collaboration and partnership working between national, regional and local government as well as public, private and third sector partners. The Route Map sets out the suite of policies from across Government that will be implemented to support car use reduction in order to both address climate change and deliver a healthier, fairer and more prosperous Scotland. Successful implementation of the actions set out in the Route Map are expected to lead to a transformational way of living in Scotland, where a new localism thrives in villages, towns and city neighbourhoods; where streets	Air Quality/ Climatic Factors

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
	become places that are safe for people of all ages to travel by walking, wheeling and cycling whilst maintaining private vehicle access for those with disabilities; where longer journeys are made by convenient and affordable public or shared transport; and with greater use of online access to key services and opportunities. This future will both enable statutory climate change targets to be met, whilst at the same time creating better ways of living, improved health and wellbeing and the associated social and economic benefits of a society less dominated by private cars.	
Decarbonising the Scottish Transport Sector (2021) ³³ Publishing Authority: Element Energy Ltd for Transport Scotland	In 2019, Scotland introduced a new set of economy wide emission targets to reflect the updated advice of the UK Committee on Climate Change. This led to Scotland setting a target to reduce emissions to net zero by 2045.	Air Quality/ Climatic Factors
Scotland's Climate Assembly: Recommend- ations for Action - Scottish Government Response (2021) ³⁴ Publishing Authority: Scottish Government	The document is structured to mirror the Assembly's Full Report – Recommendations for Action. This document provides Scottish Government response to the 16 identified goals and the subsequent 81 recommendations that underpin them. Both the scale and urgency of the climate emergency is recognised as the driving force for this report. It is also noted that where required Scottish Government will work collaboratively with the UK Government to achieve action or suggest alternative options that are believed to meet the aim of the recommendation.	Air Quality/ Climatic Factors
Air Quality Strategy for England, Scotland, Wales and Northern Ireland: Volume 1	Areas in which measured levels of airborne pollutants exceed the objectives set out in the Air Quality Strategy are designated as Air Quality Management Areas (AQMAs). Local authorities have a duty to develop and implement Air Quality Action Plans in these locations in order to improve air quality to an acceptable level.	Air Quality/ Climatic Factors, Population and Human Health

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
(2011) ³⁵ Publishing Authority: Department for Environment, Food & Rural Affairs		
Local Air Quality Management Policy Guidance (2022) ³⁶ Publishing Authority: Department for Environment, Food & Rural Affairs	Explains the objectives for improving air quality and provides a framework for activities in Local Air Quality Management Areas.	Air Quality/ Climatic Factors, Population and Human Health
The Ten Point Plan for a Green Industrial Revolution (2020) ³⁷	A plan which sets out the UK Government's priorities for starting a 'Green Industrial Revolution', written within the context of securing a recovery from COVID-19 and working to meet the legislative obligation for net zero carbon emissions.	Air Quality/ Climatic Factors, Population and Human
Publishing Authority: UK Government	Many of the actions which are highlighted in the plan are devolved matters, so within the Scottish context the Economic Recovery Implementation Plan 2020, and the Climate Change Plan Update 2021 set out the Scottish Government's proposals and investments to meet net zero emissions and achieve sustainable and inclusive economic recovery and growth; but the 10-point plan is useful in understanding how these fit within the wider UK context.	Health

Health, Safety and Wellbeing

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Fairer Scotland Action Plan (2016) ³⁸	The Fairer Scotland Action Plan is a summary of the key discussions surrounding social justice which also seeks to address key themes highlighted. These include:	Population and Human Health
Publishing Authority: Scottish Government	 Work and living standards Homes and communities Early years, education and health; Community participation and public services Respect and dignity. 	
	The plan sets 50 Fairness actions for this parliamentary term which will help in achieving the ambitions set (refer to 1.2.82). In relation to travel, the Scottish Government committed to publishing "Scotland's first accessible travel framework to help disabled people enjoy the same travel rights as everyone else" before the end of 2016 (p.31).	
	The plan outlines five ambitions that the Scottish Government will focus on until 2030:	
	 A fairer Scotland for all Ending child poverty A strong start for all young people Fairer working lives A thriving third age. 	
Fairer Scotland Action Plan: progress report 2020 (2020) ³⁹ Publishing Authority: Scottish	This Fairer Scotland Action Plan Progress Report provides an update on the actions within the Fairer Scotland Action Plan, and also includes an update on the recommendations in the two reports produced by the Independent Advisor on Poverty and Inequality.	Population and Human Health
Government Creating Places: A	The policy statement sets out the Scottish Government's	Population
policy statement on architecture and place for Scotland (2013) ⁴⁰	position on architecture and place. It emphasises the important relationship between architecture and place which contribute to the government's National Outcomes.	and Human Health, Cultural Heritage, Landscape

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Publishing Authority: Scottish Government	The statement sets out six qualities of successful places which the government consider in delivering good places: • distinctive • safe and pleasant • easy to move around • welcoming • adaptable • resource efficient.	and Visual, Material Assets
Place Principle (2019) ⁴¹ Publishing Authority: Scottish Government	The Scottish Government's Place Principle promotes a shared understanding of place, and the need to take a more collaborative approach to a place's services and assets to achieve better outcomes for people and communities. The principle encourages and enables local flexibility to respond to issues and circumstances in different places. The Place Principle supports the National Performance Framework's collective purpose for Scotland.	Population and Human Health
People, Place and Landscape: A Position Statement (2019) ⁴²	The Position Statement sets out the vision and approach of NatureScot (SNH) and Historic Environment Scotland (HES) for managing change in Scotland's landscapes in more detail. The Statement includes the following vision:	Population and Human Health, Cultural Heritage
Publishing Authority: Scottish Natural Heritage and Historic Environment Scotland	"All Scotland's landscapes are vibrant and resilient. They realise their potential to inspire and benefit everyone. They are positively managed as a vital asset in tackling climate change. They continue to provide a strong sense of place and identity, connecting the past with the present and people with nature, and fostering wellbeing and prosperity."	Landscape and Visual
	To deliver this vision, the following actions are proposed:	
	 Talking about landscape and its range of benefits. Engaging more local communities and other stakeholders in helping shape future landscape change. Strengthening the role of landscape approaches in 	

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
	the planning, management and design of built development and other land uses. Progress on these actions will be measured against the Scottish Government's National Performance Framework.	
Fitting Landscapes: Securing More Sustainable Landscapes (2014) ⁴³ Publishing Authority: Transport Scotland	This document provides the Scottish Government's policy statement on addressing the landscape design and management of transport corridors, which should meet functional objectives but also fit with the landscape through which they pass, protect landscape quality and reflect local distinctiveness. It provides four key aims to: • ensure high quality of design and place • enhance and protect natural heritage • use resources wisely • build in adaptability to change. It identified that the consideration of active travel opportunities and facilitating connections with paths, cycleways and other Non-motorised User (NMU) provision is considered and committed to early in the design process. It provides guidance throughout the stages of projects from setting objectives, concept solutions, detailed design, implementation, maintenance and management. It provides examples and guidance on objectives including minimising adverse environmental effects; protecting species, habitats and ecosystems; using	Population and Human Health, Biodiversity, Landscape and Visual
	natural characteristics in design; native planting and biodiversity; retaining features and re-using materials; low maintenance and management design; integration with landform; and distinctive place quality.	
Covid Recovery Strategy: for a fairer future (2021) ⁴⁴	The Covid Recovery Strategy acknowledges the hardship experienced during the global pandemic was not felt evenly, it has both highlighted the inequalities in society and made them worse. This strategy focuses on the	Population and Human Health

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Publishing Authority: Scottish Government	efforts required to tackle inequality and disadvantage. If people are secure and have firm foundations then communities, businesses, economy and society will be more resilient. This strategy makes clear that a thriving economy underpins a successful recovery and requires urgent action from government, local and national, from community groups, charities and voluntary organisations and from businesses large and small. The strategy aims to: address the systemic inequalities made worse by Covid make progress towards a wellbeing economy accelerate inclusive person-centred public services.	
Let's Get Scotland Walking: The National Walking Strategy (2014) ⁴⁵ Publishing Authority: Scottish Government	 The strategy sets the vision of creating a Scotland where everyone benefits from walking as part of everyday journeys, enjoys walking the in the outdoors and where places are well designed to encourage walking. It has three strategic aims: create a culture of walking where everyone walks more often as part of their everyday travel and for recreation and wellbeing. better quality walking environments with attractive, well designed and managed built and natural spaces for everyone. enable easy, convenient and safe independent mobility for everyone. 	Population and Human Health
A More Active Scotland: Scotland's Physical Activity Delivery Plan (2018) ⁴⁶	The plan sets out a commitment to increase physical activity in Scotland. Focus is given to supporting an increased uptake in active travel, including a commitment to invest in active travel infrastructure. Vision:	Population and Human Health
Publishing Authority: Scottish Government	"A Scotland where more people are more active, more often."	
Active Travel	Sets out key policy approaches to improving the uptake	Air Quality/

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Framework (2020) ⁴⁷ Publishing Authority: Transport Scotland	of walking and cycling in Scotland for travel.	Climatic Factors, Population and Human Health, Landscape and Visual
A Long-Term Vision for Active Travel in Scotland 2030 (2014) ⁴⁸ Publishing Authority: Transport Scotland	Aims to encourage more people to walk and cycle for shorter everyday journeys. Focus on areas such as infrastructure, transport integration, cultural and behaviour change, community ownership and planning.	Air Quality/ Climatic Factors, Population and Human Health, Landscape and Visual
Cycling Action Plan for Scotland 2017-2020 (2017) ⁴⁹ Publishing Authority: Transport Scotland	The aim of the third iteration of the Cycling Action Plan for Scotland was to gauge progress since the previous editions in 2010 and 2013 and to develop a robust set of actions that will help achieve the shared vision of "10% of everyday journeys to be made by bike, by 2020". The action plan outlines 19 actions of how the Scottish Government, local authorities and all key partners will achieve Scotland's active travel commitments. Actions include Transport Scotland holding an Annual Active Travel Summit, continuing to deliver and maintain high quality local infrastructure, improve integration with public transport, increase levels of access to bikes through projects that support inclusive cycling initiatives and increasing participation for young people of all abilities.	Air Quality/ Climatic Factors, Population and Human Health
Scotland's Road Safety Framework to 2030 (2021) ⁵⁰ Publishing Authority: Transport Scotland	The Road Safety Framework to 2030 sets out a long-term vision for road safety, Vision Zero, where there are zero fatalities and injuries on Scotland's roads by 2050. The journey to achieving this vision will also include interim targets where the number of people being killed or seriously injured on our roads will be halved by 2030.	Population and Human Health
Scottish Trunk	Transport Scotland's Asset Management Policy reaffirms	Air Quality/

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Road Network Asset Management Strategy (2018) ⁵¹ Publishing Authority: Transport Scotland	their commitment to ensure that Scotland's transport network is able to serve its function in addition to being safe, resilient and in the best condition. Related to the environment, the policy seeks to "Reduce carbon and waste and enhance environments". In addition, the policy document outlines how Transport Scotland is protecting Scotland's transport assets from the environment, including developing its Climate Change Adaptation and Resilience Plans and that activities are carried out in line with the current and future Scottish Climate Change Adaptation Plan (SCCAP).	Climatic Factors Population and Human Health

Economy

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Economic Recovery Implementation Plan (2020) ⁵² Publishing Authority: Scottish Government	This plan provides the Scottish Government's response to the recommendations of the Advisory Group on Economic Recovery, established to consider how Scotland can recover from the impacts of the COVID-19 pandemic. It is built on Scotland's National Performance Framework and is founded on three pillars of inclusion, growth and sustainability. It states we will "Begin building a greener, fairer and more equal society: a wellbeing economy". It consolidates actions which have been undertaken with new and planned additional measures to secure a jobsfocused and socially just economic recovery, including:	Population and Human Health
	 Supporting business recovery and sustainable green growth. Creating jobs and a Just Transition through investment-led sustainable growth. 	
Scottish Planning Policy (SPP) (2014) ⁵³	Scottish Planning Policy (SPP) describes the relationship between Plans, Policies and Strategies (PPS), from national to local level and illustrates how these are related to the Scottish Government's vision. SPP	All SEA Topics

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Publishing Authority: Scottish Government	contains subject based national planning policy which provides direction to planning authorities on the preparation of development plans and development management decisions.	
	SPP and NPF3 share a vision for the planning system in Scotland:	
	"We live in a Scotland with a growing, low-carbon economy with progressively narrowing disparities in well-being and opportunity. It is growth that can be achieved whilst reducing emissions and which respects the quality of environment, place and life which makes our country so special. It is growth which increases solidarity – reducing inequalities between our regions. We live in sustainable, well-designed places and homes which meet our needs. We enjoy excellent transport and digital connections, internally and with the rest of the world." (p.6)	
	In achieving this vision, SPP sets the following outcomes:	
	 Outcome 1: A successful, sustainable place – supporting sustainable economic growth and regeneration, and the creation of well-designed, sustainable places Outcome 2: A low carbon place – reducing our (Scotland's) carbon emissions and adapting to climate change Outcome 3: A natural, resilient place – helping to protect and enhance our (Scotland's) natural and cultural assets, and facilitating their sustainable use Outcome 4: A more connected place – supporting better transport and digital connectivity. 	
A Low Carbon Economic Strategy for Scotland (2010) ⁵⁴ Publishing	The Low Carbon Economic Strategy is an integral part of the Government's Economic Strategy (GES) to secure sustainable economic growth in addition to being key in the Scottish Government's approach to meeting Scotland's climate change targets and the transition to a low carbon economy.	Air Quality/ Climatic Factors
Authority: APS Group Scotland for the Scottish	The strategy identifies decarbonising and improving the efficiency of transport as a key enabler for enhanced	and Human Health,

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Government	productivity and increasing sustainable economic growth.	Biodiversity, Water Environment
Making Things Last: a circular economy strategy for Scotland (2016) ⁵⁵ Publishing Authority: Scottish Government	This strategy sets out our priorities for moving towards a more circular economy - where products and materials are kept in high value use for as long as possible. It builds on Scotland's progress in the zero waste and resource efficiency agendas. A more circular economy will benefit: the environment - cutting waste and carbon emissions and reducing reliance on scarce resources the economy - improving productivity, opening up new markets and improving resilience communities - more lower cost options to access the goods we need with opportunities for social enterprise.	Population and Human Health, Material Assets
Scotland's Economic Strategy (2015) ⁵⁶ Publishing Authority: APS Group Scotland for the Scottish Government	 The strategy sets out the Scottish Government's approach, focus on outcomes and commitment to partnership working. Scotland's Economic Strategy sets out an overarching framework for a more competitive and fairer Scotland and sets out the strategic direction for current and future Scottish Government policy. It is noted in the document that "Our approach to delivering Scotland's Economic Strategy is underpinned by four priorities for sustainable growth: Investing in our people and our infrastructure in a sustainable way. Fostering a culture of innovation and research and development. Promoting inclusive growth and creating opportunity through a fair and inclusive jobs market and regional cohesion. Promoting Scotland on the international stage to boost our trade and investment, influence and networks. Each priority is critical to the delivery of our vision for Scotland. Our policies and resources will be aligned to deliver our purpose of increased sustainable growth, with 	Population and Human Health, Material Assets

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
	opportunities for all to flourish" (p.13).	
Delivering for Today, Investing for Tomorrow – The Government's Programme for Scotland 2018- 19 (2018) ⁵⁷ Publishing Authority: Scottish Government	 The programme sets out a plan that will deliver for people, communities and businesses now and make the investments that will benefit future generations. The government's plan of action from 2018-19 aims at: building a globally competitive, sustainable and inclusive economy a healthy and active nation the best place to grow up and learn an empowered, equal and safe Scotland a creative, open and connected nation. 	Population and Human Health
Scotland's National Strategy for Economic Transformation: Delivering Economic Prosperity	This strategy was published in March 2022, and it sets out the Scottish Government's ambition for a successful Scotland by 2032. This success is characterised in the strategy as meaning "a strong economy where good, secure and well-paid jobs and growing business have driven a significant reduction in poverty and, in particular child poverty" (p.1).	Population and Human Health
(2022) ⁵⁸ Publishing Authority: Scottish Government	Over the next 10 years the vision is to create a wellbeing economy and navigate the economic and social impacts that Brexit will have on the country. It is noted that the strategy intentionally focuses on a small number of priorities and does not seek to do everything instead focusing on six policy programmes of action:	
	 Entrepreneurial People and Culture New Market Opportunities Productive Businesses and Regions Skilled Workforce A Fairer and More Equal Society A Culture of Delivery 	

Equality and accessibility

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Going Further -	The first national Accessible Travel Framework for	Population

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Scotland's Accessible Travel Framework (2016) ⁵⁹ Publishing Authority: Scottish Government	 Scotland. It provides a national vision and outcomes for accessible travel, new ways of working to include disabled people and a high-level action plan to tackle issues. The purpose of the framework is to: support disabled people's rights by removing barriers and improving access to travel ensure disabled people are fully involved in work to improve all aspects of travel. 	and Human Health
The Scottish Ferry Service: Ferries Plan 2013-2022 (2012) ⁶⁰ Publishing Authority: Transport Scotland	 The plan sets out strategic guidance for the provision of ferry services in Scotland between 2013-2022. It aims to maximise the economic and social potential of remote rural and island communities in Scotland. Achieving economic prosperity for Scotland's island communities requires a high-quality, reliable and affordable service to promote growth in sectors such as tourism, whisky, fishing and renewable energy. The Ferries Plan makes recommendations regarding: where investment should be focused to make improved connections for island and remote rural communities improving reliability and journey times seeking to maximise the opportunities for employment, business, leisure and tourism promoting social inclusion. 	Population and Human Health, Water Environment Material Assets
Smart and Integrated Ticketing and Payments - Delivering Strategy (2024) ⁶¹ Publishing Authority: Transport Scotland	The Scottish Government has an ambition to roll out smart and integrated ticketing and payment across Scotland, aligning with the Scottish Government Digital Strategy. The strategy intends to support public transport operators to modernise their services through multi-modal, smart ticketing and electronic payment systems to make travel easier, more accessible, and sustainable for the public.	Population and Human Health
A Connected Scotland: our strategy for	The Scottish Government's first national strategy to tackle social isolation and loneliness and build stronger connections. The role of the transport network in	Population and Human

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
tackling social isolation and loneliness and building stronger social connections (2018) ⁶² Publishing Authority: Scottish Government	building social connections and importance of physical activity is noted in the strategy.	Health
Future Intelligent Transport Systems Strategy (2017) ⁶³ Publishing Authority: Transport Scotland	The core aim of the Future ITS Strategy is to provide clarity on Transport Scotland's priorities of Intelligent Transport Systems to contribute to the safe and efficient operation of Scotland's trunk roads and motorways and meet the needs of customers. The strategy identifies six strategic themes which provide a starting point for the development of action plans and delivery programmes. Theme 3: Environment and Sustainability comprises using ITS to contribute to improved air quality, lower noise levels and reduce the adverse effects of heavy traffic. In addition, it seeks to determine how best to support a low carbon economy through the selection and use of ITS technology and greener travel choices, including low carbon and electric vehicles and supporting active travel.	Population and Human Health, Landscape and Visual, Material Assets
Union Connectivity Review: Final Report (2021) ⁶⁴ Publishing Authority: Department for Transport	The report provides a breakdown of current road, rail, air and sea connectivity within the UK, and sets out the economic context for better connectivity. It outlines a number of existing transport projects that, according to the evidence submitted so far, should be considered for future investment, as well as the potential development of a new UK strategic transport network. The report also assesses the current environmental impact of transport within the UK.	Population and Human Health, Landscape and Visual, Material Assets

Regional

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
HITRANS – Regional Transport Strategy Draft (2017) ⁶⁵ Publishing Authority: The Highlands and Islands Transport Partnership	The strategy looks to support and promote the approach that transport services in any given area will be determined by the needs of that community and focus should be given to addressing these needs with a locality-based approach. The dualling of the A96 is listed amongst others as an already committed project and is noted that the project must deliver a transport corridor that enhances connectivity between and within many large communities that will be impacted by the project (p.35). The vision of the strategy is set out as being "To deliver connectivity across the region which enables sustainable economic growth and helps communities to actively participate in economic and social activities" (p.5).	Air Quality/ Climatic Factors Population and Human Health, Water Environment
Nestrans 2040 – Regional Transport Strategy for the North-East of Scotland (2021) ⁶⁶ Publishing Authority: Transport Partnership for Aberdeen City and Shire	Nestrans is the Regional Transport Partnership for the North East of Scotland with a statutory duty to produce and deliver a Regional Transport Strategy. This RTS is a long-term strategy for the areas of Aberdeen City and Aberdeenshire, which sets the vision and direction for transport in the region for the next 20 years. The A96 is noted amongst a list of already committed projects in the pipeline for development and says the following: "Improvements to the A96 support the objectives of the Regional Economic Strategy and Nestrans will continue to work closely with both Transport Scotland and Aberdeenshire Council to ensure improvements deliver the intended benefits for the North East, promote facilities for non-motorised users along the corridor as well as effective future integration with the public transport network (bus and rail)" (p.70). The strategy looks to prioritise sustainable transport, promoting modes of active transport such as walking and cycling as most favourable followed by public transport and discouraging the need for private cars where possible. "Our Vision: To provide a safer, cleaner, more inclusive,	Air Quality/ Climatic Factors, Population and Human Health, Landscape and Visual

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
	accessible and resilient transport system in the North East, which protects the natural and built environment and contributes to healthier, more prosperous and fairer communities" (p.22).	
Regional Economic Strategy Securing the future of the north east economy (2015) ⁶⁷ Publishing Authority: Partnership for Aberdeen City and Shire and Opportunity North East	This document provides a vision and strategy for the future of the North East of Scotland's economy. It will act jointly as an economic strategy for the region and ensure a long term commitment to a range of priorities and objectives across partner organisations to maintain and grow our economy. There are four key strands: Investment in Infrastructure, Innovation, Inclusive Economic Growth and Internationalisation. Focusing on these areas, the strategy outlines a long-term plan for investment to boost the economic development of the North East.	Population and Human Health
Regional Economic Strategy – A sustainable economic future for the North East Of Scotland (2023) ⁶⁸ Publishing Authority: Aberdeen City Council	This document provides an overview of Aberdeen City's strategic vision for the year 2035, outlining key initiatives and goals aimed at sustainable development, economic growth, and enhanced quality of life for its residents.	Population and Human Health

Local

The Highlands

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
The A96 Growth Corridor Development Framework: Creating distinctive green Highland places 2007 ⁶⁹	This document was created following the proposals of the A96 dualling and explores the opportunities that this development could provide to accommodate the levels of anticipated growth in the region. Creating meaningful Highland places and reinforcing the landscape and its assets is the focus of this framework and seeks to explore the benefits that the A96 can bring in achieving this.	All SEA topics
Publishing	"The Vision:	
Authority: The Highland Council	A masterplan for the A96 Corridor should provide for distinctive 'green' Highland places where people can choose to live, learn and earn successfully. Collaboratively, all stakeholders will endeavour to deliver the masterplan through pioneering governance and commercial astuteness."	
	"The A96 Growth Corridor Development Framework provides a context for creating attractive places to live, learn and earn. A choice of living and working environments will be fashioned to meet the needs of a diverse community. This will provide for a high quality of life, sustainable and accessible places, the creation of identifiable places reflecting Highland vernacular and community investment."	
The Highland Council Local Transport Strategy 2025 – 2035 (2010) ⁷⁰ Publishing	The Highland Council is in the process of developing a new Local Transport Strategy (LTS) for the next 10-year period from 2025 to 2035. Its purpose is to guide policy and investment on transport within Highland Council and partner bodies involved in the delivery of transport infrastructure and	Population and Human Health, Landscape and Visual, Material
Authority: The	transport services throughout the Highland area.	Assets
Highland Council	The A96 is noted as a key travel corridor for Highland settlements and communities and the strategy seeks to improve transport links at key junctions and promote the A96-A9 link.	

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Highland Wide Local Development Plan (2012) ⁷¹ Publishing Authority: The Highland Council	 Maintenance of the existing transport system. Targeted road infrastructure improvements. Safety of the transport system. Resilience of the transport system. Climate change adaptation. Strengthening consideration of maintenance needs and costs in design Supporting access needs for economic growth. The plan sets out the overarching spatial planning policy for the whole of the Highland Council area except the area covered by the Cairngorms National Park Local Plan. The document provides a vision statement and spatial strategy for the area and replaces The Highland Structure Plan (2001): 'By 2030, Highland will be one of Europe's leading regions. We will have created sustainable communities, balancing population growth, economic development and the safeguarding of the environment across the	All SEA topics
Highland Historic Environment Strategy (2013) ⁷² Publishing Authority: The Highland Council	area and have built a fairer and healthier Highlands.' This strategy has been prepared as supplementary guidance to the Highland-wide Local Development Plan, with specific interest in the natural, built and cultural heritage. "The purpose of this strategy is to define Highland Council's approach to the protection of the historic environment through the planning process. This document will, through the implementation of the strategic aims, ensure that there is a proactive and consistent approach to the protection of the historic environment. The Historic Environment Strategy is a material consideration when proposals for development are being considered" (p.2).	Cultural Heritage, Landscape and Visual
Inner Moray Firth Local Development Plan 2015 ⁷³ Publishing	"The Inner Moray Firth Local Development Plan (IMFLDP) is the first of three new area local development plans that, along with the Highland-wide Local Development Plan (HwLDP) and Supplementary Guidance, will form The Highland Council's	All SEA topics

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Authority: The Highland Council	Development Plan that guides future development in the Highlands. The IMFLDP focuses on where development should and should not occur in the Inner Moray Firth area over the next 10-20 years" (p.2).	
	It is thought that the delivery of the A96 dualling and bypasses will address concerns regarding capacity of the road networks and will contribute and complement the employment and settlement growth planned.	
	The vision set out is that by 2030, the Inner Moray Firth LDP will:	
	 have increased the number of jobs, people and facilities have a growing city have safeguarded and enhanced its special places have made it easy for people and wildlife to move about through a green network have more efficient forms of travel have resolved its infrastructure constraints have diversified its economy be regenerated and renewed. 	

Supplementary Guidance - Highlands

Supplementary guidance that supports the implementation of the policies, plans and strategies relevant to the SEA are:

- <u>The Highland Council Green Networks Supplementary Guidance: A96 Corridor Network 2011</u>⁷⁴
- The Highland Council Supplementary Guidance: Green Networks 2013⁷⁵
- <u>The Highland Council Supplementary Guidance: Trees, Woodlands & Development</u> 2013⁷⁶
- <u>The Highland Council Supplementary Guidance: Managing Waste in New</u> Developments 2013⁷⁷
- The Highland Council Supplementary Guidance: Physical Constraints 2013⁷⁸
- The Highland Council Supplementary Guidance: Protected Species 2013⁷⁹
- <u>The Highland Council Supplementary Guidance: Flood Risk & Drainage Impact</u> Assessment 2013⁸⁰
- The Highland Council Supplementary Guidance: Sustainable Design Guide 2013⁸¹

The Cairngorms

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Cairngorms National Park Local Development Plan (2021) ⁸² Publishing Authority: Cairngorms National Park Authority	 The plan will influence future built development in the National Park focusing on the five-year period until 2025. The plan also includes development proposals for the 10-year period until 2030, as well as providing a general indication of the likely scale and location of development as far as 20 years into the future. The plan has four statutory aims to: conserve and enhance the natural and cultural heritage of the area promote sustainable use of the natural resources of the area promote understanding and enjoyment (including enjoyment in the form of recreation) of the special qualities of the area by the public promote sustainable economic and social development of the area's communities. 	All SEA topics

Supplementary Guidance - Cairngorms

Supplementary guidance that supports the implementation of the policies, plans and strategies relevant to the SEA are:

• <u>Cairngorms National Park Local Development Plan 2021 Non-Statutory Guidance:</u>
<u>Policy 3 – Design and Placemaking</u>⁸³

Moray

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Moray Local Transport Strategy Part 2	This is the second Local Transport Strategy for the Moray area and its purpose is to set out a framework for taking forward transport policy and infrastructure within	Air Quality/ Climatic Factors,
(2011)84	Moray. The strategy is split into two parts.	Population and Human

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Publishing Authority: Moray Council	Part One – provides information on the main strategy, outlines the key and secondary objectives together with action plans and information on committed schemes	Health, Water Environment Material Assets
	Part Two – summarises the background information, achievements to date, key issues, linkages with other National, Regional and Local policies guidance and also the relationships with other key agencies.	
Moray Local Development Plan: Open Space Strategy 2018 85	The strategy provides a strategic vision for the provision, development, maintenance and management of open space with Moray. It will be used to inform decision making on existing open space and open space provision within new development.	Air Quality/ Climatic Factors
Publishing Authority: Moray Council	Open space is important for a number of reasons highlighted by the strategy: • health and wellbeing • sustainable economic growth • climate change • environment • placemaking	Population and Human Health, Biodiversity, Landscape and Visual
Moray Local Development Plan 2020 Publishing Authority: Moray Council	The plan aims to direct the right development to the right place and takes a more "place, infrastructure first and delivery" focus than the previous Local Development Plan. The document has been split into five volumes which should be read in its entirety. The five volumes are: 1. Vision, spatial strategy and policies	All SEA topics
	2. City, town and village settlements	
	3. Rural groupings	
	4. Action/delivery programme	
	5. Supplementary guidance	
	It is noted in the plan that the dualling of the A96 "will bring significant economic benefits to Moray, reducing travel times, helping to sustain, grow and attract new businesses and should reduce the rate and severity of	

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
	accidents. The Moray Local Development Plan 2020 is required to set out a vision. The vision is set out opposite, supported	
	by a series of objectives. Plan Aims/Objectives	
	 Apply a placemaking approach to development to create sustainable, welcoming, well connected and distinctive places that are safe, healthy and inclusive. Provide a generous supply of housing land to meet the needs of various sectors of the market. A strong framework for investment that provides sufficient land for development and supports sustainable economic growth (including the tourism economy). Identify and provide for new or upgraded social and physical infrastructure to support the expanding population whilst safeguarding existing infrastructure. Promote the vitality and viability of town centres. Encourage efficient use of land and promote low carbon and sustainable development. Protect and enhance the built and natural environment. Improve resilience of the natural and built environment to climate change" (p.7). 	
Moray Council Active Travel Strategy 2022- 2027 Consultation Draft (2021)87 Publishing Authority: Moray Council	The strategy aims to make active travel "the natural choice for short, everyday journeys across all our communities". It builds on the previous active travel strategy and keeps walking, wheeling and cycling at the forefront of projects being delivered in Moray. It is noted in the strategy that the COVID-19 pandemic had a significant impact of active travel as large increases in cycling and walking were seen both locally and nationally, a trend this strategy wishes to continue encouraging.	Air Quality/ Climatic Factors, Population and Human Health

Supplementary Guidance - Moray

Sets of supplementary guidance that are considered to support the implementation of the policies, plans and strategies those that are relevant are:

- Moray Woodland & Forestry Strategy Supplementary Guidance 2018[™]
- Moray Local Development Plan 2020 Planning Policy Guidance®
- Moray Wind Energy Landscape Sensitivity Study 2023[®]
- Moray Flood Risk and Drainage Impact Assessment for New Developments 2020⁹¹

Aberdeenshire

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Aberdeenshire Local Development Plan 2023 Publishing Authority: Aberdeenshire Council	This plan is part of a set of documents which make up the statutory development plan for the area. The local development plan sets out the policies that will be used for assessing planning applications and is reviewed alongside other documents that consider development. This plan has the following aims: Economic Growth Sustainable Transport Quality Places Green- Blue Networks Environmental Protection	All SEA topics
Proposed Aberdeenshire Local Development Plan 2020 ⁹³ Publishing Authority: Aberdeenshire Council	The plan sets out exactly where development is expected to take place over the next five years and beyond up to 2031. It encourages and promotes the efficient use of land to deliver long-term benefits for the public, while protecting and improving natural heritage, built heritage and local culture. "Policies and development land allocations must deliver successful, sustainable, low-carbon, better connected and resilient places, linked by accessible and natural spaces" (p.12).	All SEA topics

Supplementary Guidance - Aberdeenshire

Supplementary guidance supports the implementation of the policies, plans and strategies relevant to the SEA are:

- Aberdeenshire Council Local Transport Strategy 2012⁹⁴
- Aberdeenshire Local Development Plan Supplementary Guidance 5 2017: Local Nature Conservation Sites⁹⁵
- Aberdeenshire Forestry and Woodland Strategy 2017%

Aberdeen City

PPS/Year/ Publishing Authority	Summary of Document	Relevant SEA Topics
Aberdeen Local Development Plan 2023 ⁹⁷ Publishing Authority: Aberdeen City Council	The Local Development Plan provides a land use framework within which Aberdeen aims to be a sustainable city as the heart of a vibrant and inclusive city region. Aberdeen is Scotland's third largest city and plays an important role in many aspects of the life of the country which was reflected in Scotland's Third National Planning Framework (NPF3).	All SEA topics
Proposed Aberdeen Local Development Plan 2020% Publishing Authority: Aberdeen City Council	This plan represents Aberdeen City Council's land-use strategy for the city covering a 10-year period from 2022. It aims to support the council's vision of creating a sustainable and socially equitable future for the city as a home to its residents, regional centre of the North East and as one of Scotland's most important economic engines. As Scotland's third largest city it remains an important regional centre for culture, retailing and leisure which must be reflected in the development and investment decisions made.	All SEA topics

PPS Supplementary Guidance - Aberdeen City

Supplementary guidance that supports the implementation of the policies, plans and strategies relevant to the SEA are:

- Aberdeen City Local Transport Strategy 2016-2021
- Aberdeen Sustainable Urban Mobility Plan 2019[™]
- Aberdeen Active Travel Action Plan 2021-2026¹⁰¹
- Aberdeen Planning Guidance 2023: Transport and Accessibility¹⁰²
- Aberdeen Planning Guidance: Air Quality¹⁰³
- Aberdeen Planning Guidance: Noise 104
- Aberdeen Planning Guidance: Natural Heritage 105
- Aberdeen Planning Guidance: Trees and Woodlands
- Aberdeen Planning Guidance: Flooding, Drainage & Water Quality

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- Aberdeen Planning Guidance: Open Space & Green Infrastructure 100
- Aberdeen Planning Guidance: Landscape®

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Appendix C. Environment Baseline

Appendix C: Environmental Baseline

1. Background

- 1.1 It is a requirement of the Environmental Assessment (Scotland) Act 2005 that plan-making authorities provide details of the character of the environment which may be affected by their plan, including any existing pressures and the likely evolution of the environment in the absence of the plan. The A96 Corridor Review will be assessed against this baseline to provide an indication of the type and significance of any environmental impacts that could arise.
- 1.2 There are many requirements for environmental protection and enhancement detailed within existing legislation, programmes, strategies, plans and policies at the international, UK and national levels across all the SEA topics. These requirements form the context for the SEA. Under each SEA topic, a high-level summary of the existing environmental protection requirements is provided in Appendix B (Plans, Programmes & Strategies Review).
- 1.3 The environmental baseline covered in this appendix applies to a 15km-wide corridor (7.5km either side of the existing A96 Trunk Road). This corridor was used by the previous A96 Dualling SEA¹, and is illustrated on the figures provided in Appendix A (Environmental Figures). Presenting the baseline at this level allows the SEA to reflect on the interaction of the A96 Corridor Review with wider environmental trends.
- 1.4 Current trends and pressures will be explored further for each SEA topic scoped into the assessment, and information will be drawn from a range of sources, including the Scottish Government, NatureScot, Historic Environment Scotland (HES), the Scottish Environmental Protection Agency (SEPA), and Scotland's Environment Web, amongst others.
- 1.5 The study area includes a wide range of natural capital assets, including, forests, moorland, rivers, lochs, farmland, coastal areas as well as the seabed. As stated in the Natural Capital Asset Index, a range of benefits or ecosystem services can be derived from these assets, and these will be set out in the baseline.

2. Climatic Factors

2.1 Baseline

Greenhouse Gas Emissions

2.1.1 In 2019, domestic transport was the largest source of net emissions in Scotland at $12MtCO_2e^2$. Domestic transport is understood as transport, excluding international aviation and shipping (emissions from domestic aviation, road transport, railways, domestic navigation, fishing and aircraft support vehicles). According to the

1

Scottish Transport Statistics 2021, transport accounted for 29.2% of Scotland's total greenhouse gas emissions in 2019. The largest source of transport emissions is cars at 38%, followed by HGVs at 25%, and aviation at 16%³. In addition, 25% of emissions were generated by a combination of LGVs & HGVs. The proportion of single occupancy car trips also shows an underlying increasing trend, with 66% in 2018 compared with a figure of 65% in 2013 and 60% in 2008⁴.

Climate Change

- 2.1.2 There is consensus in the scientific community that anthropogenic climate change poses an ongoing threat to the planet. The uninhibited consumption of fossil fuels since the industrial revolution has steadily increased the atmospheric concentration of greenhouse gases to unprecedented levels. This increasing concentration has amplified the 'greenhouse effect' where the carbon dioxide (CO₂) traps heat from the sun, resulting in higher average global temperatures. A minor increase in global temperature threatens to imbalance delicate tipping points, causing uncontrollable and irreversible changes to ecosystems, such as melting permafrost that would release significant amounts of methane and the melting of polar ice caps, causing sea-level rise.
- 2.1.3 The Climate Projections report⁵ indicates that over the last few decades, Scotland has experienced a warming trend, shifting rainfall patterns, and rising sea levels. Key changes include:
 - Scotland's 10 warmest years on record have all occurred since 1997. The average temperature in the last decade (2010-2019) was 0.69°C warmer than the 1961-1990 average, and the warmest year on record was 2014.
 - There has been an increase in rainfall over Scotland in the past few decades (with an increasing proportion of rainfall coming from heavy rainfall events).
 The annual average rainfall in the last decade (2010-2019) was 9% wetter than the 1961-1990 average, with winters 19% wetter.
 - Mean sea level around the UK has risen by approximately 1.4 mm/year from the start of the 20th century.
- 2.1.4 Historic climate data for the study area has been obtained from the Met Office⁶ recorded by the closest meteorological station to the A96 corridor (Nairn, location: 57.593, -3.821) for the period 1981-2010 and is presented in Table C2.1.

Table C2.1: Historic Climate Data for Climate Station: Nairn, 1981-2010

Climatic Variable	Month	Value
Average annual maximum daily temperature (°C)	n/a	12.02
Warmest month on average (°C)	July	18.66
Coldest month on average (°C)	December	0.45
Mean annual rainfall levels (mm)	n/a	606.86
Wettest month on average (mm)	October	67.37

2.1.5 The Met Office historic 10-year averages from the meteorological stations in Kinloss, Keith and Aberdeen Airport identify gradual warming and increased rainfall between 1961 and 2020 in the study area⁷. Information on mean maximum annual temperatures and mean annual rainfall recorded by the meteorological stations within the study area which are: Kinloss, Keith and Aberdeen Airport is summarised in Table C2.2.

Table C2.2: Historic 10-year Averages for Temperature and Rainfall

Aberdeen Airport

Climate Period	Mean Max annual temp (°C)	Mean Annual Rainfall (mm)
1961-1990	11.48	790.13
1971-2000	11.74	799.89
1981-2010	11.96	814.93
1991-2020	12.21	832.55

Kinloss

Climate Period	Mean Max annual temp (°C)	Mean Annual Rainfall (mm)
1961-1990	11.91	620.61
1971-2000	12.15	624.36
1981-2010	12.39	664.64

1991-2020	12.67	662.68
1771 2020	12.07	002.00

Keith

Climate Period	Mean Max annual temp (°C)	Mean Annual Rainfall (mm)
1961-1990	11.18	876.42
1971-2000	11.41	845.34
1981-2010	11.68	883.63
1991-2020	12.01	888.75

2.2 Inter-relationships with other Topics

Biodiversity

2.2.1 Grassland habitats, forestry and peatland within the corridor have significant carbon sequestration value but are also important for biodiversity. Any positive or negative effects of the A96 Corridor Review on these natural assets would therefore affect both SEA topics.

Soils

- 2.2.2 Soils may be altered by changes to rainfall patterns, erosion and increased temperatures due to climate change, while the release of CO₂ sequestered in peat soils from development contributes to climate change.
- 2.2.3 Peatland conservation is therefore essential for climate change mitigation.

Material Assets

2.2.4 The materials required to construct any transport options have embodied carbon emissions that will be released in the manufacture of components of the infrastructure. The natural material assets within the route corridor including forestry and peat soils, hold a high carbon sequestration and sink value.

Water Environment

2.2.5 Climate change projections indicate that this region will experience wetter winters and more regular high intensity rainfall events which could affect the resilience of the corridor.

2.3 Evolution of the Baseline and Trends

Greenhouse Gas Emissions

- 2.3.1 The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 amended the greenhouse gas emissions targets in the Climate Change (Scotland) Act 2009 and set a 'net zero' target emissions year of 2045 by which time emissions are to be 100% lower than the baseline year of 1990.
- 2.3.2 To facilitate delivery of the long-term targets, Scotland's climate change legislation also includes annual targets for every year to net zero. The levels of these targets are set out in Table C2.3⁸.

Table C2.3: Scotland's Annual GHG Reduction Targets

Year	Percentage reductions from the 1990/1995 baseline
2018	54.0%
2019	55.0%
2020 (interim target)	56%
2021	57.9%
2022	59.8%
2023	61.7%
2024	63.6%
2025	65.5%
2026	67.4%
2027	69.3%
2028	71.2%
2029	73.1%
2030 (interim target)	75%
2031	76.5%
2032	78.0%
2033	79.5%
2034	81.0%
2035	82.5%
2036	84.0%
2037	85.5%
2038	87.0%

Year	Percentage reductions from the 1990/1995 baseline
2039	88.5%
2040 (interim target)	90%
2041	92.0%
2042	94.0%
2043	96.0%
2044	98.0%
2045	100% (net zero emissions)

- 2.3.3 Various plans and policies, including the NTS2 and its Delivery Plan and the Climate Change Plan, have since been implemented to facilitate and encourage the required reduction in emissions by 2045⁹. Key proposals include vehicle technology improvement (increased uptake of electric and low carbon vehicles), alternative fuels, and demand management and behaviour change with a shift towards sustainable travel modes (walking, cycling and public transport); all of which will reduce emissions from the transport sector over the coming decades.
- 2.3.4 A key component of Scotland's climate change strategy is to encourage a shift to more sustainable forms of transport, away from private vehicles. The long-term trends for public transport and vehicular travel remain uncertain, and it is currently unclear whether there would be an increase or reduction in greenhouse gases as a result.

Climate Change

- 2.3.5 The effects of climate change are expected to continue to exacerbate, even as Scotland transitions to a low-carbon economy. Climate change projections indicate that the climate trends observed over the last century will continue and intensify over the coming decades.
- 2.3.6 Key long-term climate change trends for Scotland are that average temperatures will increase across all seasons. Typical summers will be warmer and drier, winters will be milder and wetter and sea levels will rise. Heavy rainfall events will become more frequent in the coming decades, exacerbating flooding and landslide incidents¹⁰.
- 2.3.7 Climate change has the potential to increase the occurrence of extreme weather events in the study area, with increases in mean summer and winter temperatures, increases in mean precipitation in winter and decreases in mean precipitation in summer. This is likely to increase the risks associated with climate change, with an increased need for resilience and adaptation.

The future baseline data is based on UK Climate Projections 2018 (UKCP18) data 2.3.8 from the Met Office¹¹. UKCP18 uses a range of possible scenarios, classified as Representative Concentration Pathways (RCPs), to inform differing future emission trends. Representative Concentration Pathways (RCPs) are used in the process of modelling possible future climate evolution. They capture assumptions about the economic, social and physical changes to environment that will influence climate change within a set of scenarios. RCPs Radiative forcing targets for 2100 have been set at 2.6, 4.5, 6.0 and 8.5 watts per square metre and these targets are incorporated into the names of the RCPs; RCP2.6, RCP4.5, RCP6.0 and RCP8.5. Each pathway results in a different range of global mean temperature increases over the 21st century. These RCPs "... specify the concentrations of greenhouse gases that will result in total radiative forcing increasing by a target amount by 2100, relative to preindustrial levels". RCP8.5 has been used for the purposes of this assessment as a worst-case scenario - this is the UK Government's recommended approach.

Temperatures

- 2.3.9 The weather will remain variable and may become more variable, as the amount of change that occurs will depend on the level of reduction in greenhouse gas emissions globally.
- 2.3.10 The obtained projections for temperatures changes do not materially vary across the 25km grids within the study area. Table C2.4 presents data from the 25km grid in the central part of the study area, as per Figure C2.1 and can therefore be applied to the whole study area.

25km Grid Cell* 362500.00, 837500.00

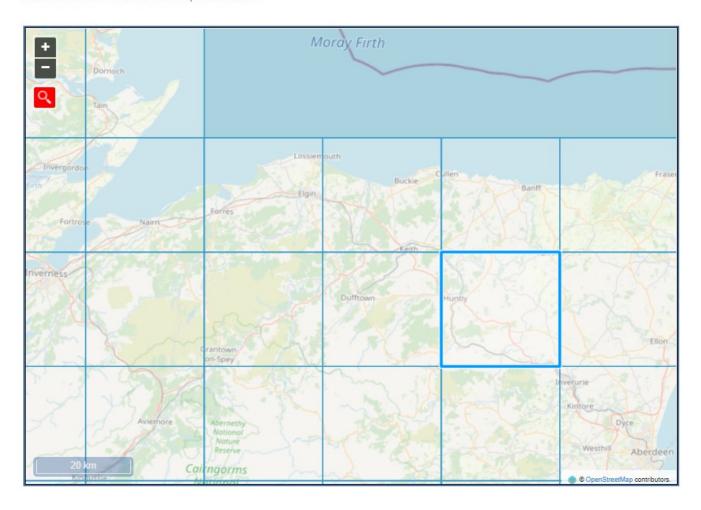


Figure C2.1: 25km Grid in the Central Part of the Study Area.

2.3.11 These figures are expressed as temperature/precipitation anomalies in relation to the 1981-2010 baseline. The figures in bold are the central estimate (50th percentile). The figures in the following section are the range of change that is considered likely (10th-90th percentile).

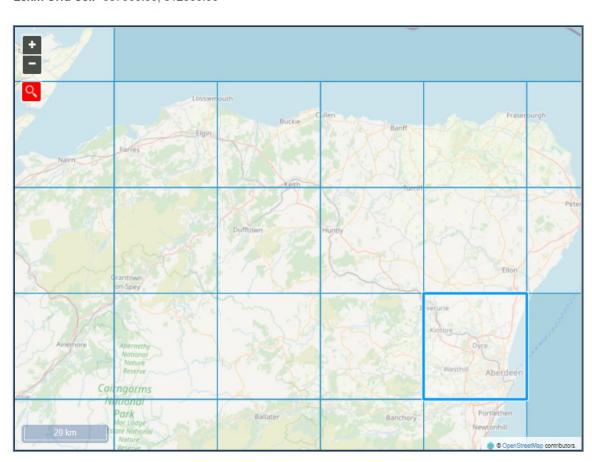
Table C2.4: Temperature Variables (°C), 50% Probability (10% and 90% probability in parenthesis) for 25km grid square within the central part of the study area

Climate Variable	2020-2049	2040-2069	2070-2099
Change in mean annual air temperature anomaly at 1.5m (°C)	+0.89 (+0.35 to +1.48)	+1.56 (+0.67 to +2.53)	+3.04 (+1.52 to +4.69)
Change in mean summer air temperature	+0.81 (+0.10 to +1.52)	+1.54 (+0.31 to +2.82)	+3.22 (+1.09 to +5.48)

Climate Variable	2020-2049	2040-2069	2070-2099
anomaly at 1.5m (°C)			
Change in mean winter air temperature anomaly at 1.5m (°C)	+0.91 (-0.09 to +1.94)	+1.52 (+0.28 to +2.82)	+2.82 (+0.95 to +4.86)
Change in maximum summer air temperature anomaly at 1.5m (°C)	+0.77 (-0.11 to +1.69)	+1.59 (+0.03 to +3.19)	+3.40 (+0.76 to +6.18)
Change in minimum winter air temperature anomaly at 1.5m (°C)	+0.87 (-0.11 to +1.94)	+1.50 (+0.26 to +2.95)	+2.83 (+0.80 to +5.20)

Precipitation

2.3.12 Table C2.5 presents precipitation data from the 25km grid in the eastern part of the study area (see Figure C2.2) which had the highest precipitation values. The figures in bold are the central estimate (50th percentile). The figures in the following sections are the range of change that is considered likely (10th-90th percentile).



25km Grid Cell* 387500.00, 812500.00

Figure C2.2: 25km Grid in the Eastern Part of the Study Area.

Table C2.5: Precipitation Variables (%), 50% Probability (10% and 90% probability in parenthesis) for 25km grid square in which eastern part of the study area is located.

Precipitation Variables (%)	2020-2049	2040-2069	2070-2099
Change in annual precipitation rate anomaly (%)	+5.26	+4.43	+6.21
	(-0.59 to +11.12)	(-3.28 to +12.26)	(-3.12 to +15.72)
Change in summer precipitation rate anomaly (%)	-1.07	-8.47	-16.53
	(-9.89 to +7.70)	(-22.31 to +5.26)	(-36.14 to +1.94)
Change in winter precipitation rate anomaly (%)	+16.88	+20.92	+33.13
	(+1.50 to +33.75)	(-0.17 to +44.14)	(+0.75 to +70.04)

Sea Level

- 2.3.13 Climate change will exacerbate flood events, with rising sea levels increasing the risk of coastal flooding. More frequent, high-intensity rainfall will increase the risk of flash flooding from surface water or sewers for inland communities. Increased frequency and intensity of rainfall may also result in greater risk of river flooding due to higher river flow volumes and flashier flow regimes.
- 2.3.14 A changing climate is also expected to have ecological impacts, such as warmer sea temperatures and an increasing rise of non-native species spreading and becoming established in aquatic environments.
- 2.3.15 UKCP18 probabilistic projections have been analysed for the 25km grid square for the coastline locations within the study area. Projected sea level doesn't vary significantly within the 25km grids in the coastline locations in the study area.

2.3.16 Table C2.6 presents data from the selected 25km grid, as per Figure C2.3, which can be applied to the areas of coastline throughout the whole study area.

Coastal Location (latitude(N), longitude(E)):* 57.17, -2.08

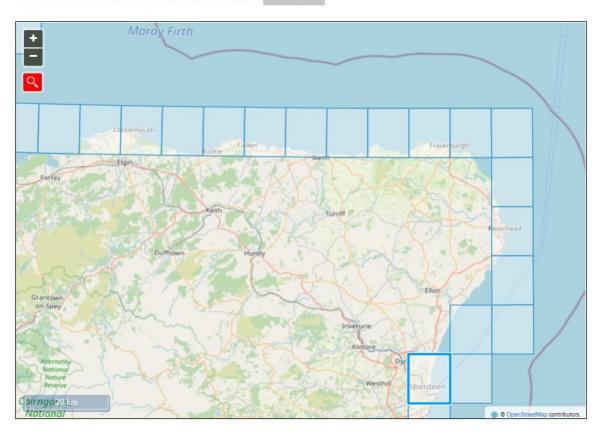


Figure C2.3: 25km Grid for the Coastal Location.

Table C2.6: Projected Changes in Sea Level Rise for Coastline Location (m) (5% and 95% Probability)

Projected Changes in Sea Level Rise	2020-2049 [*]	2040-2069	2070-2099
Changes in Sea Level (m)	+0.13 to +0.36	+0.13 to +0.36	+0.26 to +0.72

2.3.17 For other 25km grids for coastline locations within the study area: the change for period 2020-2049 was +0.07 to +0.19.

3. Air Quality

3.1 Baseline

- 3.1.1 Poor air quality can have detrimental impacts on human health and quality of life. Air pollution stems from the release of substances into the atmosphere from a variety of sources, including organic and man-made sources. Despite this, air quality is still a concern for many in the country, particularly those living in urban and industrial areas. Poor air quality can result in human health conditions such as asthma, respiratory problems and cardiovascular disease ¹², discussed further in Section 4 (Population and Human Health). The UK government estimates that air pollution reduces the life expectancy of every person in the UK by 7-8 months, with related costs of up to £20 billion to the economy annually¹³.
- 3.1.2 Transport is a significant contributor to nitrogen oxide (NO_x) and particulate matter (PM_{10} and $PM_{2.5}$) emissions and the transport sector is the most significant source of air pollution in the UK¹⁴. Transport generates just over one-sixth of Scotland's total particulate matter and over one-third of the total emissions of NO_x . The majority of these emissions are caused by road transport. Emissions of NO_x from road transport are reducing but not at the expected rate ¹⁵ ¹⁶.
- 3.1.3 A set of Air Quality Standards and Objectives have been developed in Scotland for several pollutants of concern for human health¹⁷. Air Quality Management Areas (AQMAs) are designated by local authorities to cover areas where Air Quality Strategy Objectives (AQOs) in relation to harmful objectives are not (or are unlikely to be) met. Where an AQMA is declared, local authorities are required to develop and implement a plan to improve air quality in the AQMA¹⁸.
- 3.1.4 Air quality within the A96 corridor is generally good. A review of air quality monitoring data collected within the corridor between 2015 and 2019 for the council administrative areas of Moray and Aberdeenshire show that annual mean concentrations of nitrogen dioxide (NO₂) remained stable and well below the Air Quality Objective (AQO) across the years reviewed 19 20. The highest monitored NO₂

concentrations in 2019 within Moray and Aberdeenshire corridor were $22.7\mu g/m^3$ and $25.9\mu g/m^3$ respectively, which were substantially below the annual mean NO_2 AQO of $40\mu g/m^3$. Air quality within the Highland Council area is also generally good, with the exception of the existing Air Quality Management Area (AQMA) declared for the potential exceedance of NO_2 within Inverness city centre, however this is beyond the corridor area²¹. The highest $2019\ NO_2$ concentration within the Highland Council A96 corridor was $33.0\mu g/m^3$; again, below the annual mean NO_2 AQO.

- 3.1.5 There are no declared AQMA within the A96 Corridor Review Environmental study area however there are three declared within Aberdeen City Council area, all to the east of the A96 Corridor Review Environmental study area, and one, as previously discussed in the paragraph above, to the west within Inverness. Anderson Drive AQMA within Aberdeen City was declared for the potential exceedance of annual mean nitrogen dioxide (NO₂) and particulate matter (PM₁₀) AQOs²². The AQMA encompasses Haudagain Roundabout and Auchmill Road on the northern fringes of Aberdeen and includes the junction between the A96 and A92 but while including part of the A96, as noted it is outwith the A96 Corridor Review Environmental study area²³.
- 3.1.6 The highest NO $_2$ concentration relevant to public exposure in 2019 within the A96 Corridor Review Environmental study area was $38\mu g/m^3$, although this does not exceed the NO $_2$ AQO. Whilst there is no PM $_{10}$ monitoring data within the A96 corridor area, PM $_{10}$ monitoring is undertaken within the wider Aberdeen City area. The highest PM $_{10}$ concentration in 2019 was $14.0\mu g/m^3$, which is the highest within all the local authorities in the corridor and is below the annual mean AQO of $18\mu g/m^3$. The highest PM $_{2.5}$ concentration in 2019 within all of the local authorities considered was $8\mu g/m^3$ (data capture <75%) and is below the annual mean AQO of $10\mu g/m^3$.
- 3.1.7 Mapped background annual mean concentrations of oxides of nitrogen (NO_x a precursor for NO_2), NO_2 , PM_{10} and $PM_{2.5}$, based on a 2018 reference year, projected to 2023, were obtained from the LAQM support tools provided by the Department for Environment, Food and Rural Affairs ²⁴ ²⁵ (Defra) for use in air quality assessments. The backgrounds are provided for the UK as a 1kmx1km grid network. A summary of the minimum and maximum background concentrations across the A96 corridor area for 2023 is provided in .

3.1.8 Table C3.1.

Table C3.1: Background Concentrations Throughout the Study Area for the Mapped Annual Mean 2023 (µg/m3)

Pollutant	AQO	Minimum (2023)	Maximum (2023)	
NO _X	30	1.8	42.3	

NO ₂	40	1.5	26.3
PM ₁₀	18	5.1	11.5
PM _{2.5}	10	3.2	6.7

(**Bold** indicates exceedance of the relevant AQO)

3.1.9 2023 background concentrations are below the relevant annual mean AQO, with the exception of the maximum NO_x concentration, which is set for the protection of vegetation and ecosystems and is not currently assessed by Scottish local authorities²⁶.

Pollution Climate Mapping

3.1.10 The Pollution Climate Mapping (PCM) model was developed to report on compliance with European Air Quality Directive (EU Directive 2008/50/EC)) Limit Values by Defra (2023) ²⁷. These Limit Values are still relevant for assessing compliance post-Brexit ²⁸ as they have been transposed into UK law²⁹. There are a number of PCM links that correspond to the A96 corridor where 2023 roadside annual mean NO₂ concentrations were predicted to be between 3.3µg/m³ and 33.6µg/m³. Based on these Defra PCM forecasts, concentrations are predicted to be compliant with Limit Values.

Ecological Designations

3.1.11 DMRB LA 105³⁰ states that designated habitats are "internationally, nationally and locally designated sites of ecological conservation importance on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity". A preliminary desk study indicates that there are 43 Sites of Special Scientific Interest (SSSI), four Ramsar sites, eight Special Protection Areas (SPAs) and seven Special Areas of Conservation (SACs) within the study area. In addition, Scottish Ancient Woodland Inventory Sites are found within the corridor.

3.2 Inter-relationships with other Topics

Climatic Factors

3.2.1 Air quality and climate change are inherently linked. Extreme weather events as a result of climate change can negatively impact air quality. For example, during heat waves, areas of high pressure create stagnant air that concentrates air pollutants in one area, and dry, dusty air during hot weather periods increases the level of particulate pollution. It is not expected that the A96 Corridor Review would result in an inter-relationship between air quality and climate change that would result in significant effects.

Population and Human Health

3.2.2 The link between air pollution and poor health has been set out in this assessment and is discussed in Section 4 (Population and Human Health). There is potential for inter-relationships to arise with air quality and other population effects, for example, noise and vibration, visual impacts, or impacts on accessibility. A combination of impacts arising as a result of the A96 Corridor Review has the potential for cumulative effects on population receptors; such effects will be considered throughout design development and reduced where practicable through appropriate mitigation measures.

Biodiversity

3.2.3 In relation to ecological receptors, air pollution can impact on the functioning of ecosystems, for example, the growth of trees and other fauna can be affected by acid and nitrogen deposition and sulphur dioxide. Air quality effects in relation to biodiversity are discussed in Section 7 (Biodiversity).

3.3 Evolution of the Baseline and Trends

- 3.3.1 As air quality concentrations are below the AQOs and limit values, air quality is not considered a key constraint, with the possible exception of the ecological sites discussed above, due to the largely rural nature of the area. Principal sources of air pollution within the corridor are likely to comprise traffic-related emissions from the A96 itself.
- 3.3.2 In terms of trends, road traffic emissions are likely to reduce in future years due to increasing numbers of low emission vehicles on the roads, such as the greater prevalence of electric vehicles and the phasing out of diesel engines.
- 3.3.3 The sustainable public transport initiatives proposed should assist in the decarbonisation of transport and reducing vehicle emissions. These should support wider Scottish Government objectives, particularly those seeking to improve health, through improving air quality and encouraging a modal shift away from private vehicle usage towards public transport and active travel.

4. Population and Human Health

4.1 Baseline

Population

4.1.1 As shown in Table C4.1, Scotland's overall population increased between 2019 and 2020. While Aberdeen City Council area's population also increased between 2019 and 2020, Aberdeenshire, Highland and Moray Council areas all experienced a population decline during this same period.

4.1.2 As with Scotland as a whole, Aberdeen City, Aberdeenshire, Highland and Moray Council areas have ageing populations. Between mid-2010 and mid-2020, the percentage of those aged 65 and over increased by 14%, 30%, 27% and 24% in Aberdeen City, Aberdeenshire, Highland and Moray areas respectively, compared to 20% nationally³¹. Amongst Scotland's 32 council areas, Aberdeenshire's population experienced the fourth largest increase in the proportion of those aged 65 and over between mid-2010 and mid-2020.

Location	Population	Average Pop. Density (persons per km ²)	Pop. Change 2019 to 2020	% Pop. Aged 0 to 15 Years	% Pop. Aged 16 to 64 Years	% Pop. Aged 65 and over
Scotland ³²	5,466,000	70	+2,700 (+0.05%)	17	64	19
Aberdeen City Council ³³	229,060	1,234	+390 (+0.2%)	16	68	16
Aberdeenshire Council ³⁴	260,780	41	-430 (-0.2%)	19	61	20
The Highland Council ³⁵	235,430	9	-400 (-0.2%)	16	61	23
Moray Council ³⁶	95,710	43	-110 (-0.1%)	17	61	22

- 4.1.3 Aberdeen is Scotland's third largest city by population and its fourth most densely populated area³⁷. The largest settlement in Aberdeenshire is Peterhead, which has a population of 19,060³⁸. Approximately 48.4% of Aberdeenshire's population lives in areas classified by the Scottish Government as rural, with 35% living in areas classified as 'accessible rural' and 13.4% living in areas classified at 'remote rural'³⁹. The largest settlement in The Highland Council area is Inverness, which has a population of 63,220 and is the fifth largest of Scotland's cities by population ⁴⁰. The Highland Council is also Scotland's largest local authority by area, with a total land area (including all islands at low water) of 26,484km²⁴¹. Approximately 47.4% of Highland's population lives in areas classified as rural, of which 37.9% is classified as 'remote rural' ⁴². The largest settlement in Moray is Elgin, with a population of 24,760 ⁴³. Approximately 41.6% of Moray's population lives in areas classified as rural, with 29.8% living in 'accessible rural' areas and 11.8% living in 'remote rural' areas ⁴⁴.
- 4.1.4 Figure C4.1 indicates the population statistics for the study area, including the most populous cities and towns, Mid-2020.

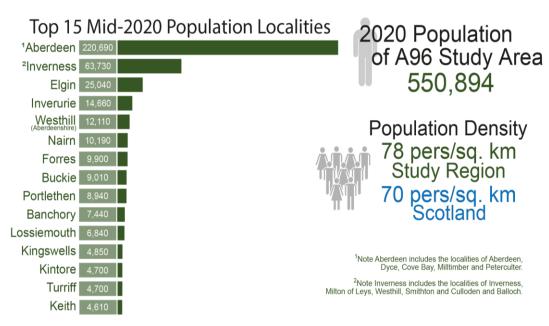


Figure C4.1: Study Area Largest Settlements by Population 2020, 2020 Population and Population Density 45.

- 4.1.5 Change in population, as indicated by the 2020 NRS, has seen increases within the SEA study area for each of the local authorities. Within the study area, Aberdeenshire's population has increased by almost 6% between 2011 and 2020 ⁴⁶. The areas of Highland Council within the study area have grown in population by 3.5%, whilst Aberdeen City has grown by 3%, and Moray by 2.4%.
- 4.1.6 On a more local level, evidence from the 2020 NRS mid-year population estimates suggest some individual settlements are growing at a greater rate than the wider council area. Figure C4.2 shows NRS population projections for the period between 2012 ⁴⁷ and 2020 ⁴⁸ for the top 15 most populous settlements in the study area.

Top 15 Mid-2020 Population Localities - Change from 2012

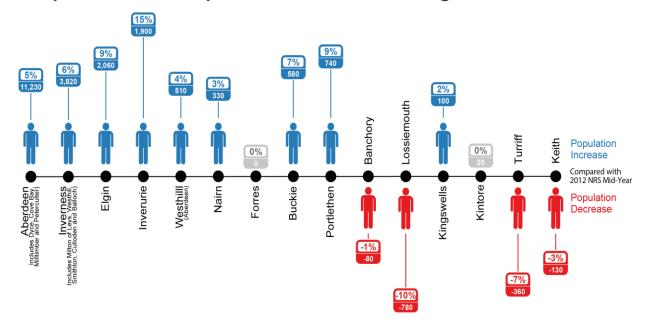


Figure C4.2: Top 15 Settlements Population Change

- 4.1.7 Inverurie has shown the greatest proportional growth (15%), followed by Portlethen (9%) and Elgin (9%), whilst Aberdeen and Inverness (including Culloden) have seen population increases of 5% and 6% respectively. However, the population of Lossiemouth has reduced by 10%, Turriff by 7% and Keith by 3%. Other more rural settlements (not included in Figure C4.2) have also shown a population decrease from 2012 to 2020, Huntly (4%) and Oldmeldrum (3%). In general, the data above indicates that population reductions are most likely to occur in the smaller, more rural areas with subsequent increases in the larger urbanised areas of the study area.
- 4.1.8 Future growth, as predicted by NRS Population Projections ⁴⁹, is anticipated to be varied by local authority area. By 2043, population in Aberdeen City and Aberdeenshire is anticipated to grow by approximately 2.5% from a 2018 baseline. However, Highland is predicted to decrease by approximately 1%, and Moray by over 2.5%. These percentages are for the whole LA area, therefore may not be representative of the growth in the study area for Aberdeenshire and Highland.
- 4.1.9 Considering the study area as a whole, there is a clear trend of an aging population, with far greater growth in over 65s from 2011 to 2020 than for under 16s. The trends show that the younger population is growing more in urban areas, particularly in Aberdeen. However, the number of children in more rural areas, including in Moray and Highland, is decreasing. The number of over 65s are growing across the entire study area, though Accessible Rural Areas (42%) and Small Towns (30%) show the greatest proportional increase. The substantial rise of 65 and over population in accessible areas suggests that older people are balancing a rural lifestyle whilst still retaining a reasonable access to the services offered in the urban areas, such as Aberdeen.

Human Health

- 4.1.10 Exposure to air pollution can exacerbate health inequalities between different demographics. Air quality is explored as a standalone topic in Section 3 (Air Quality). However, there are significant impacts from air quality on human health. For example, short-term increases in particulate matter (PM) levels are associated with acute health effects:
 - increased use of medication (e.g. asthma inhalers)
 - days off work and days with restricted activity
 - hospital admission for lung and heart diseases
 - risk of death from asthma, COPD, heart disease ⁵⁰.
- 4.1.11 The long-term risks of exposure to PM_{2.5} comprise:

- increased deaths from heart attack, chronic lung disease, stroke and lung cancer
- estimated reduction in average life expectancy of 3-4 months in Scotland ⁵¹.
- 4.1.12 Reducing traffic-related air pollution can improve people's sense of wellbeing, as well as physical health and the quality of the environment ⁵². Transport is a significant contributor to poor air quality in urban areas and although emissions from transport have declined over the years, the rate of the decline has started to level off ⁵³. Due to several common sources, most notably road traffic in urban areas, there is also a close relationship between air quality and environmental noise ⁵⁴.
- 4.1.13 Environmental noise is defined as "unwanted or harmful outdoor noise creased by human activities, including noise emitted by means of transport, road traffic, rail traffic, and from sites of industrial activity" ⁵⁵. Noise from transportation is the biggest source of environmental noise in Scotland, and population exposure to environmental noise has been linked to adverse health effects. Annoyance and sleep disturbance are the key direct impacts on the population.
- 4.1.14 Scotland's noise map 56 illustrates noise exposure from rail, road, air traffic and industrial sources in accordance with the European Parliament and of the Council Directive for Assessment and Management of Environmental Noise 2002/49/EC (commonly known as the European Noise Directive (END)) and shows the majority of parts of the A96 ranges between 55 and 60 dB $L_{\rm den}$. Noise data for the environmental study area are shown on Figure A3 in Appendix A (Environmental Figures).
- 4.1.15 Nearer to the cities/towns of Inverness, Nairn, Forres, Elgin, Keith, Huntly, Inverurie, and Aberdeen, the traffic noise is rising to higher levels of 70dB $L_{\rm den}$. In some areas, the noise level exceeds 80dB $L_{\rm den}$, particularly near Inverness and Aberdeen International Airports.
- 4.1.16 The greatest consolidated noise sources are at the eastern end of the A96 due to the proximity to Aberdeen and its associated various industrial land uses and main transport routes entering and exiting the city. This is beyond the study area. Within the study area itself, the main sources of noise are from the A96 and the railway line which both follow a similar east-west alignment. There are some peripheral roads which are also noise sources, however these are more scattered in the western extent or form direct connections with the A96. Noise emissions from airports and industry outside of Aberdeen have not been modelled as they do not meet the criteria set out in the END.
- 4.1.17 The END also requires the production of Noise Action Plans (NAPs) to manage noise. These NAPs identify locations where people are most likely to be annoyed by noise (Candidate Noise Management Areas [CNMAs]) and areas to be preserved (Candidate Quiet Areas [CQAs]) from the strategic noise mapping. These areas

- then go through a filtering process to determine which will progress to actual Noise Management Area (NMA) and Quiet Area (QA) status.
- 4.1.18 Responsibility for assessing the potential for implementing cost effective noise mitigation measures within NMAs rests with either Transport Scotland, Network Rail, or the local roads authority, depending on who is responsible for the road/rail. There is one Round 3 CQA which falls within the study area, which is 'West Woods' located south of A96 and west of A90. There are 12 road CMNAs and two rail CMNAs proposed within Aberdeen and five road CMNAs in Inverness, however these are outside the study area.

Deprivation

- 4.1.19 People living in deprived areas in Scotland are more likely to die early from disease and have more years of ill health ⁵⁷. The Scottish Burden of Disease Study (2016) Deprivation Report noted that more deprived areas have double the rate of illness or early death than less deprived areas, and that people living in Scotland's wealthiest areas are more likely to live in ill health than die prematurely due to ill health, and that the number of years of life affected by ill health are much fewer ⁵⁸. Those living in deprived areas are also more vulnerable to the effects of environmental change, due to the prevalence of pre-existing health problems and inequities amongst these communities.
- 4.1.20 The Scottish Index of Multiple Deprivation (SIMD) 2020, is a tool used to identify areas where poverty and inequality exist within Scotland to allow targeted investment in these areas. Scotland's 6,976 data zones are ranked from most to least deprived using 38 different indicators of deprivation across seven 'domains' comprising: income; employment; health; education, skills and training; geographic access to services; housing; and crime.
- 4.1.21 Of Aberdeen City's 283 data zones, 29 were identified as being amongst the 20% most overall deprived data zones in Scotland, including one which was identified as being within the 5% most overall deprived data zones across the country ⁵⁹. Of Aberdeenshire's 340 data zones, nine were identified as being amongst the 20% most overall deprived data zones in Scotland. Of Highland's 312 data zones, 30 were identified as being amongst the 20% overall most deprived data zones in Scotland. Five of Highland's data zones were also identified as being within the 5% most deprived data zones in Scotland, three of which are located within Inverness. Of Moray's 126 data zones, four were identified as being amongst the 20% overall most deprived data zones in Scotland.
- 4.1.22 There is a link between areas of lower socio-economic status and higher levels of obesity, which has harmful effects on health such as diabetes, heart disease and some cancers. Scotland's obesity rates continue to be amongst the highest in the developed world and are a significant public health issue ⁶⁰. In particular, women and children in the most deprived areas are affected by more extreme obesity ⁶¹. In

2018, 65% of individuals in Scotland were overweight, 28% of whom were obese 62.

Access to Active Travel

- 4.1.23 Access to active travel is an important factor in combating obesity, as well as having beneficial impacts on mental health and wellbeing. In 2018, the proportion of Scottish adults meeting physical activity guidelines for moderate or vigorous physical activity (MVPA) was 66% ⁶³. MVPA is understood as at least 150 minutes of moderate physical activity, 75 minutes of vigorous physical activity, or an equivalent combination of the two, per week ⁶⁴. There is a range of factors that can impact on levels of exercise, and these include the built environment and transport systems that encourage active living and regular physical activity. Adherence to the MVPA guidelines is also more common amongst adults in less deprived areas, declining from 74% in the least deprived areas to 54% in the most deprived areas
- 4.1.24 Public access assets are described in Section 5 (Material Assets) of this appendix.

Access to Services

4.1.25 The study area includes predominantly rural areas, interspersed with settlements. The key settlements in the study area are Inverness, Nairn, Forres, Elgin, Fochabers, Keith, Huntly, Inverurie and Aberdeen. Access to integrated transport infrastructure is a key concern within rural communities. Increasing connectivity between modes of transport can also provide various benefits, such as reducing congestion and supporting more sustainable modes of transport. Barriers to accessing healthcare is an influencing factor for causing health inequalities. Affordability and adequate provision of public transport, as well as integrated public transport, act as barriers to those on lower incomes or in certain areas accessing healthcare facilities. In the rural regions, there is greater reliance on private vehicles due to a lack of regular public services and road travel being the only method of transport.

Recreation and Tourism

- 4.1.26 The North East of Scotland is renowned for its whisky industry, with the region being home to the world-famous Malt Whisky Trail. The heritage trail consists of eight single malt distilleries and a cooperage in the Speyside region of Moray, attracting over 800,000 visitors in 2017 alone ⁶⁶. The North East is also home to a wealth of castles and stately homes. With over 260 castles, Aberdeenshire is known as 'Scotland's Castle Country', boasting more castles per acre than any other region of the UK ⁶⁷.
- 4.1.27 The landscape in the North East of Scotland also provides opportunities for recreation and tourism. Aberdeen and Aberdeenshire are home to over 50 golf courses and golf links, owing to the sand dunes that stretch along Aberdeenshire's 165-mile coastline. The River Spey, Scotland's third longest river, begins at the

outlet of Loch Spey in the Scottish Highlands and flows 160km east and north-east into Moray where it discharges into the Moray Firth at Spey Bay. Also, Scotland's fastest flowing river, the Spey is internationally renowned for its Atlantic salmon and trout fishing opportunities, which are worth around £15 million to the local economy ⁶⁸. In addition, the River Spey offers several opportunities for recreation including canoeing, kayaking and rafting on the river, and walking and cycling on the adjacent Speyside Way, one of Scotland's Great Trails.

4.1.28 Woodland and forests also provide opportunities for recreation and tourism throughout the North East region. Several woodlands located close to settlements are regularly used for recreational purposes, including Hill of Mulundy (Forres), Roseisle Coastal Forest (Burghead and Findhorn), Monaughty Wood (Elgin), Lossie Forest (Lossiemouth), Back o' Bennachie (Insch) and Tyrebagger Woods (Aberdeen and Kintore). Nationally renowned gardens and arboreta also attract significant numbers of visitors to the North East of Scotland each year, many of which are located within the grounds of the region's castles and stately homes. Access to woodlands and outdoor green space provide opportunities for people to experience and enjoy nature regularly, which is important for human health and quality of life.

Safety

- 4.1.29 Currently, accidents or incidents (e.g., roadworks, landslips, flooding) occurring on any part of the A96, can significantly impact residents, businesses and visitors due to the significant length of alternative routes and the travel times involved.
- 4.1.30 It is expected that the A96 Corridor Review would improve safety on the road network.

4.2 Inter-relationships with other Topics

Air Quality

4.2.1 The A96 Corridor Review has the potential to affect air quality. Exposure to air pollution can exacerbate health inequalities between different demographic groups, and there are significant effects from air quality on human health both in the short term and the long term.

Climatic Factors

4.2.2 The A96 Corridor Review has the potential to affect climatic factors through carbon emissions and flood risk in the area. Climate change affects many of the social and environmental determinants of health such as clean air, safe drinking water, sufficient food supplies and secure shelter ⁶⁹. In addition, people living in flood prone areas, or remote or island communities, can be particularly susceptible to extreme weather events, the severity of which is exacerbated by climate change. More frequent flood events, storms and strong winds can cause damage and

disruption to such communities, limiting access to vital services and impacting on people's physical and mental health ⁷⁰. The A96 Corridor Review will also consider the resilience of the corridor to the effects of climate change.

Material Assets

4.2.3 The population relies upon material assets for everyday functions. Built transport assets are used to facilitate travel and natural assets, such as forestry and peat, provide a range of benefits for people including as energy sources, and as carbon sequestration for mitigating the effects of climate change. Forests also provide important health and wellbeing benefits, as described in the next paragraph. Disruption to the transport network or loss of material assets, as a result of the options could result in effects on the population such as journey delays and removal of the benefits of carbon sequestration of forestry and peat, and of the positive effects of forests on health and wellbeing.

Biodiversity, Cultural Heritage, and Landscape and Visual

4.2.4 There are relationships between the Population and Human Health topic and the Biodiversity, Cultural Heritage, Landscape and Visual Amenity SEA topics, due to the numerous health and wellbeing benefits provided by access to nature, cultural heritage and greenspaces, providing people with opportunities to participate in recreational activities and experience the local landscape qualities of the region. This is of particular importance during or after pandemics, especially for those without or with limited access to such spaces. Proposed options will have the potential to affect all of these topics and therefore result in effects on population and human health.

4.3 Evolution of the Baseline and Trends

- 4.3.1 Between 2018 and 2028, the populations of Aberdeen City, Aberdeenshire, Highland and Scotland as a whole are projected to increase, while the population of Moray is projected to decrease. By 2028, Scotland's population is expected to increase from 5.4 million to 5.5 million (+1.8%). By mid-2028, Aberdeen City's population is projected to increase by 1.1%; Aberdeenshire's population is projected to increase by 2.5%, and Highland's population is projected to increase by 0.5%, while Moray's population is projected to decrease by 0.1% ^{71 72 73 74 75}.
- 4.3.2 Barriers to health equality will persist unless action to remove them is taken for example, relating to accessing health care services or affordable public transport. Improvements to local and strategic roads, such as those being considered as part of the A96 Corridor Review, will be key for ensuring the future reliability of the transport network.
- 4.3.3 Climate change and associated extreme weather, such as flooding of the water environment, disrupts the lives of individuals and communities, limiting access to vital services and impacting on the population's physical and mental health; these

events are expected to become more commonplace in the future. Coastal erosion caused by climate change could render existing settlements uninhabitable in the future, resulting in population displacement and potentially a lack of adequate housing. Such impacts could potentially lead to social tensions and affect human health. Existing social and health inequalities could be exacerbated as a result of climate change unless action to prevent this is taken.

4.3.4 At the time of writing, the impact of the ongoing COVID-19 pandemic on the health baseline and trends for the study area is uncertain but will be considered in future assessments if more information becomes available.

5. Material Assets

5.1 Baseline

- 5.1.1 Material assets is a wide-ranging topic, considering the natural and built environment, including housing and critical infrastructure. Material assets in the environmental sense include finite mineral, aggregate and fossil fuel resources. In relation to Material Assets, the wider STPR2 SEA for Scotland aims to promote and improve the sustainable use of the transport network via the following means:
 - support improvements to transport technology, interchanges and timetabling
 - plan for future capacity of public transport, taking demographic and societal changes into account
 - promote sustainable use and management of existing infrastructure
 - ensure transport infrastructure contributes to the circular economy.
- 5.1.2 The mode of travel people choose influences the number of vehicles on the road and therefore the performance and reliability of the asset (i.e., road). Car usage remains the principal mode of transport in Scotland, with 63% of adults recording a journey by car at least once a week and 70% of the adult population holding a driving licence. Transport improvements associated with the A96 corridor, in conjunction with other A-class roads would improve mobility between Aberdeen and Inverness, and also enhance accessibility to the wider trunk road network. Furthermore, this route would facilitate greater access to the 11 rail stations that comprise the rail network within the A96 corridor.
- 5.1.3 There are multiple core paths concentrated in and around the towns of Inverness, Nairn, Forres, Elgin, Keith, Huntly and Inverurie and along the coast from Findhorn to Portgordon, as well as core paths in forests (Culbin Forest, Bennachie Forest) and along lochs (Loch of Blairs, Millbuies Loch, Loch na Bo, Loch Oire) along the study area. Additionally, there are Rights of Way (ROWs) around the towns of Forres and Elgin, northwest from Keith and ROWs along the coast from Burghead to Lossiemouth.

- 5.1.4 An extensive network of active travel paths is located throughout the A96 Corridor study area, including four National Cycle Network (NCN) routes, namely:
 - NCN1 a route that links Dover in the south-east of England to Tain in the Highlands of Scotland, via Inverness
 - NCN7 a cycle route running from Sunderland to Inverness
 - NCN78 a cycle route up the west coast of Argyll and Bute, through the Great Glen and finishing in Inverness
 - NCN195 a route which follows the old Deeside Railway Line from Aberdeen to Ballater.
- 5.1.5 Within the study area, there are six of Scotland's Great Trails, including the Formartine and Buchan Way, Speyside Way, Moray Coast Trail, Great Glen Canoe Trail, Great Glen Way, and Dava Way.
- 5.1.6 Within the A96 corridor study area, there are 25 public recycling centres and five commercial waste disposal facilities.
- 5.1.7 The primary mineral resources extracted within the A96 corridor study area include hard rock, peat, sand and gravels.
- The physical factors of soil, topography, and climate determine the land's 5.1.8 capability for tree growth and future forestry development ⁷⁶. The section of the study area located in Aberdeenshire consists of soils primarily classified as podzols, peaty gleys, and peat, which, under the Land Capability for Forestry classification system ⁷⁷, designates forestry as F5 (limited flexibility for trees) and F4 (moderate flexibility for trees). To the north-east of the A96, in the Moray and Inverness areas, the soil range extends to include mineral gleys with sand or loamy textures. These conditions provide land with F2 (very good) and F3 (good) flexibility for the growth and management of tree crops. Areas of natural woodland are scattered across the A96, which are predominantly composed of mixed coniferous forest with a significant presence of native Scots Pine. They are home to a rich diversity of ecosystems, providing a high-quality landscape and substantial economic and social benefits. More than one-third of Moray's land area is covered by forest 78. Furthermore, because forests and climate are intrinsically linked due to the carbon, water, and energy cycles, woodlands and forests play a significant role in climate change ⁷⁹.
- 5.1.9 The A96 corridor study area has eight operational renewable energy developments with a total energy capacity of 96MW, and two additional renewable developments have been approved and will increase energy generation by 30MW. There are currently five onshore wind farms, with more in the planning stages.
- 5.1.10 Flooding poses the greatest long-term climate-related risk to infrastructure performance, but the growing risks posed from heat, water scarcity and slope instability caused by severe weather could also prove significant ⁸⁰. Road and rail



- transport are generally more vulnerable to a changing climate than air and water transport, and flooding is anticipated to be the greatest threat.
- 5.1.11 There may be a need to upgrade existing roads to the required standard. This infrastructure would have considerable requirements for materials, aggregates and energy for manufacture and construction. This is linked with the 'climatic factors' topic due to the energy and carbon intensive nature of infrastructure construction.

5.2 Interrelationships with other Topics

Climatic Factors

5.2.1 Carbon emissions originate from the materials used to construct a project, emissions from construction activities and operational emissions from end-users. Changes to land use within the route corridor would affect the carbon mitigation potential from natural sequestration from the soils and forestry. These carbon emissions add to the cumulative atmospheric carbon concentration that amplifies the greenhouse effect, causing climate change.

Soils

5.2.2 Natural material assets encompass agricultural land and soils. The natural capital value of the soil types within the route corridor underpins the ecosystem functions that the soils provide to several other environmental topics.

Water Environment

5.2.3 Natural material assets encompass watercourses and natural flood management. Should the A96 Corridor Review conclude with recommendations for roads-based options, construction of such options would create additional impermeable road surface within the route corridor and remove natural material assets that regulate the water cycle.

Biodiversity

5.2.4 Natural material assets such as watercourses, woodland and soils have high biodiversity value and they therefore need to be protected for their nature conservation value as well as their amenity, carbon sequestration and economic value.

5.3 Evolution of the Baseline and Trends

5.3.1 The changing climate is expected to affect material assets in future years. An increase in annual rainfall for Scotland and more frequent, higher intensity rainfall events poses a risk to the transport network from slope instability and resulting landslides. This was tragically demonstrated by the Stonehaven train derailment in August 2020 caused by a landslide, resulting in three fatalities and several injuries.

5.3.2 A key component of Scotland's climate change strategy is to encourage a shift to more sustainable forms of transport, away from private vehicles. The COVID-19 pandemic has caused a dramatic fall in the use of public transport due to the inability to socially distance. It may take several years for public transport demand to return to pre-pandemic levels, which may hamper efforts to reduce private vehicle use, putting greater pressure on the road network from congestion.

6. Water Environment

6.1 Baseline

- 6.1.1 Scotland's water environment is essential for all life and activity, ranging from drinking water to maintaining habitats and supporting a significant part of the economy. Scotland has approximately 19,000km of coastline, incorporating 470km² of fishing zones that underpin coastal fishing communities. Water is also used for industrial processes, such as whisky production, hydroelectricity generation and recreational activities. Scotland's rivers and lochs contain 90% of the entire UK's freshwater and cover 2% of the land area.
- 6.1.2 Legislation and policies relating to the Water Environment are implemented through European Union legislation, transposed into Scottish Law. The Water Framework Directive (WFD) (Directive 2000/60/EC) was transposed into Scottish law under the Water Environment Water Services (WEWS) Act 2003. Under the WFD, new activities within or near to the water environment must not cause deterioration or prevent the achievement of 'Good' Status or 'Good' Ecological Potential (for artificial or heavily modified waterbodies). The WEWS Act is delivered through the production of River Basin Management Plans (RBMP), which detail the current condition of waterbodies in the Plan area and set objectives for improvement to 'Good' overall status or 'Good' Ecological Potential.
- 6.1.3 There are 294 surface waterbodies within the study area, including the River Ness, River Nairn, River Findhorn, River Lossie, River Spey, River Don and River Dee. The Moray Firth and the Beauly Firth are also located within the study area. Table C6.1 provides a summary of the baseline classifications of each WFD attribute of these surface waterbodies, as reported in the latest available datasets (2020).

Table C6.1: WFD Waterbody Classification Summary 81

Waterbody	Waterbody ID	Overall Status	Overall Ecology	Overall Hydrology
Moray	200440	Good	Good	n/a
Firth	200171 (Offshore)	Good	Good	n/a
Beauly Firth	220441	Good	Good	n/a
River Ness	23394	Moderate	Moderate	High

Waterbody	Waterbody ID	Overall Status	Overall Ecology	Overall Hydrology
River Nairn	20305 (Moray Firth to River Farnack)	Moderate	Moderate	Moderate
	20306 (River Farnack confluence to source)	Good ecological potential	Poor	Good
River Findhorn	23000 (Dorback Burn to sea)	Good	Good	High
	23004 (Tomatin to Dorback Burn)	Good	Good	High
	23032 (Waukmill to Arthur's Bridge)	Poor ecological potential	Bad	Good
River	23033 (Mosstowie Canal to Waukmill)	Good	Good	Good
Lossie	23039 (Leanoch Burn to Mosstowie Canal)	Bad ecological potential	Bad	Good
	23043 (upper catchment)	Good	Good	High
River Spey	23065 (River Fiddich to tidal limit)	Good	Good	Good
	23265 (Dyce to tidal limit)	Bad	Bad	High
River Don	23269 (Inverurie to Dyce)	Good ecological potential	Moderate	High
	23293 (Alford to Inverurie)	Moderate	Moderate	High
	23165 (Huntly to Turriff)	Moderate	Moderate	Good
River Deveron	23182 (Black Water to Huntly)	Good	Good	High
	23188 (Culdrain to Huntly)	Poor	Poor	High
	23172 (Cairnie Burn)	Moderate	Moderate	High
River Dee	23316 (Banchory to Peterculter)	Moderate	Moderate	Good
	23315 (Peterculter to tidal limit)	Moderate ecological potential	Bad	Moderate

6.1.4 Within the study area, there are three designated bathing waters at Nairn (East), Nairn (Central) and Findhorn. As of the 2021 season, Findhorn bathing water is of

- excellent quality, Nairn (East) and Nairn (Central) bathing waters are of good quality ⁸². There are also eight Drinking Water Safeguard Zones.
- 6.1.5 There are also two active freshwater aquaculture sites located within the study area at Corgrain Point and Forgue, and two CAR licenced fish farms located at Forgue (freshwater) and Cadboll at Cromarty (seawater) 83.
- 6.1.6 The transport options which interact with coastal waters will need to consider the potential effects on the water quality of bathing waters, aquaculture and fisheries.
- 6.1.7 The bedrock [solid] geology of the A96 corridor varies from east to west. The eastern end is underlain by Palaeozoic Sandstone, with the western extents underlain by Pre-Cambrian Metamorphic rocks and Igneous Batholith Intrusions; the central section consists of all these bedrock types. A number of faults are inferred across the study area (based on 1:50,000 mapping) with a higher density of faulting indicated in the area around Keith. There are superficial [drift] deposits consisting of sand and gravel across the entire corridor. Borehole data has shown that there are high groundwater levels at its eastern end. Further west, the water table is only high during winter months. The corridor lies across 14 WFD Designated Groundwater Bodies and 34 WFD Surface Watercourses ⁸⁴.

6.2 Interrelationships with other Topics

Climatic Factors

6.2.1 There is potential for changes to flood risk and hydrology within the corridor as a result of climate change. These changes may exacerbate any effects reported in the SEA.

Population and Human Health

6.2.2 Changes to flood risk may impact receptors within the corridor including population, residential and non-residential buildings and critical and non-critical infrastructure and facilities. Effects are dependent on the extent of the change and could result in positive or negative impacts.

Biodiversity

6.2.3 Changes to water quality and hydromorphology may impact upon aquatic ecology within the corridor.

Soils

6.2.4 Soil run-off or transportation of contaminated soils may impact upon water quality within the corridor.

Cultural Heritage

6.2.5 Increases to flood risk may impact cultural heritage assets within the corridor. Effects are dependent on the extent of the change and could result in positive or negative impacts.

Landscape and Visual

6.2.6 Changes to channel morphology, additional structures, channel realignment or changes to hydrology may also result in impacts to their amenity value and have the potential to affect the integrity of a landscape area within the corridor.

6.3 Evolution of the Baseline and Trends

- 6.3.1 Ongoing key pressures on the surface water environment include urbanisation and intensive agriculture/aquaculture. Rural and urban diffuse pollution also remains a concern for water quality, particularly in relation to agriculture, forestry, and urban development.
- 6.3.2 Climate change will exacerbate flood events, with rising sea levels increasing the risk of coastal flooding. More frequent, high-intensity rainfall will increase the risk of flash flooding from surface water or sewers for inland communities.
- 6.3.3 The predicted effects of climate change, such as increased temperatures and changes to rainfall patterns, could affect flows in rivers and impact on water resource availability ⁸⁵. Increased frequency and intensity of rainfall may result in greater risk of river flooding due to higher river flow volumes and flashier flow regimes. A changing climate is also expected to have ecological impacts, such as warmer sea temperatures and an increasing risk of non-native species spreading and becoming established in aquatic environments ⁸⁶.
- 6.3.4 The impact of climate change is likely to vary regionally; as such, SEPA has recently published updated guidance recommending regional climate change allowances ⁸⁷. The study area is located within 10 catchments of the Scotland River Basin District ⁸⁸, and the corresponding regional flow allowances for rivers and sea level rise allowances are provided in Table C6.2.

Table C6.2: Regional Flow and Sea-level Rise Allowances Relevant to the Study Area

Region	Regional flow allowance (Total change to the year 2100 (%))	Sea level rise allowance (Cumulative rise (in metres) from 2017-2100)
North Highland	40	0.89
North East Scotland	34	0.87

- 6.3.5 Allowances for peak rainfall intensity are also provided. These are 42% for North Highland and 37% for North East Scotland ⁹⁰. The above allowances must be considered in the development of transport options.
- 6.3.6 The current and future flood extents (medium likelihood) from coastal, river and surface water flooding within the environmental study area are shown on Figures A5 and A6 in Appendix A (Environmental Figures).
- 6.3.7 The main risk of flooding within the A96 corridor is from river flooding. This includes the current route of the A96 itself. The flood mapping illustrates that the River Don poses significant flood risk to roads and settlements between Old Rayne and Dyce, with Kintore and Inverurie at significant risk. The other main settlements within the corridor of Nairn, Forres, Elgin, Fochabers, Huntly and Blackburn show significant areas of flood risk from various watercourses, including the River Spey and River Deveron. Flood protection schemes have been implemented within the corridor, including at Forres (Moray Council ⁹¹) Elgin and Huntly, and a flood study for Inverurie and Port Elphinstone is underway (Aberdeenshire Council). Coastal flood risk is confined to the coastal settlements within the wider study area of Findhorn, Burghead and Lossiemouth, although the estuary at Findhorn does allow for a greater extent of coastal flood risk inland. There is also some potential coastal flood risk for Nairn.

7. Biodiversity

7.1 Baseline

- 7.1.1 Biodiversity is a common measure of the variety of living organisms and ecosystems and is often used to assess ecosystem health. Biodiversity and genetic diversity are dependent upon each other; genetic diversity is the main contributor to biodiversity in an ecosystem. Biodiversity provides the ecosystem services that are the basis of life, including the regulation of air and water, soil formation, nutrient cycling, flood regulation and pollination. This distribution of biodiversity has key interrelations with the abiotic environment, such as soil and the water environment.
- 7.1.2 Legislation and policies relating to biodiversity, flora and fauna are implemented from international to local level to protect the natural environment. At EU level, the Natura 2000 network of sites, now generally referred to as European sites, aims to protect key assets under the Habitats and Birds Directives. As identified in Section 1.6.8, European sites include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) which will be assessed as part of the Habitats Regulations Appraisal (HRA) for the A96 Corridor Review. Further ecological sites protected by UK legislation and policy include Ramsar wetlands, Marine Protected Areas (MPAs), Sites of Special Scientific Interest (SSSI) and woodland identified on the Ancient Woodland Inventory (AWI).

- 7.1.3 Aberdeen City Council, Aberdeenshire Council and Moray Council are partners of the North East Scotland Biodiversity Partnership which aims to produce, implement and monitor action plans, such as the North East Scotland Local Biodiversity Action Plan (NELBAP), for a range of important habitats and species throughout the North East of Scotland ⁹². Similarly, the Highland Council, together with NatureScot and Scottish Forestry, co-funds the Highland Environment Form (HEF) which was established to provide an arena for discussion, networking and action on environmental subjects, including the production of the Highland Nature Biodiversity Action Plan 2021-2026 ⁹³. Both the NELBAP and Highland Nature Biodiversity Action Plan 2021-2026 identify specific actions for the protection of biodiversity within the study area.
- 7.1.4 Each planning authority within the study area has also developed a woodland and forestry strategy which highlights the key issues and opportunities in relation to forestry and woodland and sets out strategic actions and objectives for the future stewardship and expansion of forestry and woodland within each council area. The most recent iterations of the woodland and forestry strategies are listed below:
 - Highland Forest and Woodland Strategy 94
 - Moray Woodland & Forestry Strategy Supplementary Guidance 95
 - Aberdeenshire Local Development Plan 2017 Supplementary Guidance 8:
 Aberdeenshire Forestry and Woodland Strategy
 - The Granite City Forest: Tree and Woodland Strategic Implementation Plan 2022-2025 (Draft) ⁹⁶.
- 7.1.5 The terrestrial environment in the study area includes a variety of forestry, farmland, mountains and moorland, saltmarsh and peatlands, interspersed with numerous rivers.
- 7.1.6 No National Nature Reserves have been identified in the study area but designated ecological sites and one Local Nature Reserve (LNR), Findhorn Bay, have potential to be affected by the A96 Corridor Review. The study area includes the following nationally designated biodiversity sites:
 - 43 Sites of Special Scientific Interest (SSSIs) (biological, geological, and mixed)
 - 21 biological SSSIs. The following SSSIs are designated mostly for their woodland, fens and freshwater habitats as well as species of birds:
 - Buinach and Glenlatterach
 - Cawdor Wood
 - Coleburn Pasture
 - Craigs of Succoth
 - Den of Pitlurg

- Lethenhill
- Loch of Skene
- o Loch Oire
- Loch Spynie
- o Longman and Castle Stuart Bays
- Lower Findhorn Woods
- o Mill Wood
- Mortlach Moss
- Munlochy Bay
- Paradise Wood
- o Quarry Wood
- River Spey
- o Tilliefoure Wood
- Tips of Corsemaul and Tom Mor
- Wartle Moss
- o Whitehill
- 17 geological SSSIs. The following SSSIs are designated for their natural geological features mostly quaternary geology and geomorphology and palaeontology (permian-triassic reptilia and silurian -devonian chordata):
 - Ardersier Glacial Deposits
 - Bin Quarry
 - Boghole, Muckle Burn
 - Clashach Covesea
 - Cutties Hillock
 - Dalroy and Clava Landforms
 - o Dipple Brae
 - Findrassie
 - Hill of Barra
 - Masonshaugh
 - o Pitcaple and Legatsden Quarries
 - Pittodrie
 - o Randolph's Leap
 - Scaat Craig

- Spynie Quarry
- Teindland Quarry
- Tynet Burn
- 5 mixed SSSIs. The following SSSIs are designated mostly for their natural coastal geomorphology; coastlands, fens and freshwater habitats as well as species of birds and butterflies:
 - Culbin Sands, Culbin Forest and Findhorn Bay
 - o Kildrummie Kames
 - Lower River Spey
 - Spey Bay
 - Whiteness Head.
- 7.1.7 31 Aberdeen and Aberdeenshire Local Nature Conservation Sites (LNCSs), four Moray Wildlife Sites and one Scottish Wildlife Trust Reserve have been identified in the study area.
- 7.1.8 Additionally, there are several internationally designated sites in the wider area which could feasibly be affected by the transport options. These include, but are not limited to:
 - four Ramsar sites (Inner Moray Firth, Loch of Skene, Loch Spynie, and Moray and Nairn Coast)
 - eight Special Protection Areas (SPAs), (Darnaway and Lethen Forest, Inner Moray Firth, Loch Flemington, Loch of Skene, Loch Spynie, Moray Firth, Moray and Nairn Coast, Tips of Corsemaul and Tom Mor)
 - seven Special Areas of Conservation (SACs), (Cawdor Wood, Culbin Bar, Lower Findhorn Woods, Lower River Spey - Spey Bay, Moray Firth, Mortlach Moss, River Spey).
- 7.1.9 As evidenced by the prevalence of designated sites, the area in the vicinity of the transport intervention options is important for nature conservation. The protected sites support the following principal habitat types:
 - The coastline in the study area is designated for important intertidal habitats, including intertidal mudflats and sandflats supporting areas of saltmarsh and eelgrass beds. There are also sand dunes, vegetated shingle and estuarine alder woodland
 - Eutrophic lochs, open water transition fen, reedbeds, birch-willow carr, willow-alder carr and alkaline fens, lowland acid grassland, calaminarian grassland and serpentine heath, mesotrophic loch, saltmarsh, hydromorphological mire range, valley fen, upland birch woodland, open water transition fen, juniper scrub, fen meadow, fen-meadow.

- 7.1.10 Terrestrial species, including birds of conservation interest within the study area include, but are not limited to, small blue butterfly Cupido minimus, dingy skipper butterfly Erynnis tages, pipistrelle bat Pipistrellus pipistrellus, roe deer Capreolus capreolus, majestic red deer Cervus elaphus, black grouse Tetrao tetrix, golden eagle Aquila and osprey Pandion haliaetus.
- 7.1.11 Freshwater species of conservation interest in the study area include, but are not limited to, nationally scarce plants, slender-leaved pondweed Potamogeton filiformis, coralroot orchid Corallorhiza trifida and baltic rush Juncus balticus and the near threatened lesser tussock sedge Carex diandra. The River Spey SAC is also designated for otter Lutra lutra, freshwater pearl mussel Margaritifera margaritifera and Atlantic salmon Salmo salar.
- 7.1.12 Sites of national or international significance provide feeding and roosting habitats for a diversity and abundance of designated bird species, including but not limited to migratory and over-wintering birds, wildfowl and waders.
- 7.1.13 In Scotland, Ancient Woodland is defined as land that is currently wooded and has been continually wooded, at least since 1750 ⁹⁷. Ancient Woodlands are usually significantly more biodiverse than more recent woods and are identified in the National Planning Framework 4 (NPF4) as "land that has maintained continuous woodland habitat since at least 1750". Approximately 297km² parcels of woodland listed on the Ancient Woodland Inventory (AWI) are located within the study area, and tree felling would be required, but the exact quantities are unknown at this stage. There are also approximately 394km² parcels of native woodland listed on the Native Woodland Survey of Scotland (NWSS) located within the study area.
- 7.1.14 Key pressures to biodiversity, flora and fauna include the loss, fragmentation and degradation of habitats as a result of development. An Ecological Impact Assessment (EcIA) will identify, quantify, and evaluate potential effects of development-related actions on habitats, species and ecosystems ⁹⁸ and enable appropriate mitigation or compensation to be determined for any significant effects. Where licences are required for specific activities to avoid potential breaches of conservation legislation, these will be sought from NatureScot. In addition to designated areas, green spaces within urban and rural areas such as green corridors, parks, and gardens can have important functions and play a valuable role in enhancing biodiversity. Improving green infrastructure and cycling and walking networks can promote active travel, helping to reduce transport emissions and build networks of priority habitats with positive impacts on biodiversity.

7.2 Interrelationships with other Topics

Climatic Factors

7.2.1 Changes to climate and the increasing occurrence of extreme weather events could alter available resources, environmental conditions and species' life cycles within the corridor. Trees, woodlands and peatlands act as 'carbon sinks' by sequestering more carbon from the atmosphere than they release. These flora and habitats provide a useful contribution to mitigating climate change. Deforestation and degradation of peatlands results in the release of carbon into the atmosphere, which fuels further climate change.

Air Quality

7.2.2 Changes to air quality within the corridor could impact the resilience of biodiversity. Nitrogen deposition due to vehicle emissions can impact on the functioning of ecosystems and growth of trees.

Noise and Vibration

7.2.3 An increase in noise and vibrations could cause disturbance to species of conservation interest, which could result in avoidance or abandonment of important habitats within the corridor.

Soils

7.2.4 Soils and peat provide habitats and support biodiversity within the corridor. Soil biodiversity is essential to most soil functions and affects the sustainability of species and habitats which rely on soils. Soil sealing would reduce the capacity of the corridor to support habitats and biodiversity and potentially affect the sustainability of species and habitats that rely on soils and soil biodiversity.

Water Environment

7.2.5 Changes to water quality and hydromorphology, including groundwater, could impact biodiversity within the corridor.

Landscape and Visual

7.2.6 Landscape changes could alter habitats and their connectivity, which could result in negative or positive interactions with biodiversity within the corridor. Any mitigation and enhancement measures implemented for landscape and visual amenity could have biodiversity benefits, and vice versa. Therefore, any mitigation planting proposals should be developed with input from both disciplines.

7.3 Evolution of the Baseline and Trends

- 7.3.1 Biodiversity loss has been well documented over the last 50 years, and today there is a range of pressures with the potential to impact on Scotland's wildlife and biodiversity and the current biodiversity crisis is recognised in NPF4. Key ongoing issues include climate change, land use pressures (e.g., loss or damage of natural habitats from development or agricultural intensification and land use change), and the pollution of air, water, and land. Climate change and future development are the biggest drivers for the possible changes in the future baseline. Whilst a future baseline is difficult to predict for every ecological feature, trends and targets can provide a useful indication of future biodiversity.
- 7.3.2 Within Scotland's designated sites (SSSI, SAC, SPA and Ramsar sites), 77.9% of natural features were either in or recovering towards a favourable condition as of 31 March 2021 ⁹⁹. This is an increase of 0.7% since 2011, when 77.2% of natural features were in favourable condition ¹⁰⁰. Over the same period, the percentage of qualifying habitats features in favourable condition has increased by 3.8% (from 73.8% in 2011 to 77.6% in 2022), but the percentage of qualifying species features in favourable condition has declined by 3.1% (from 75.4% in 2011, to 72.3% in 2021) ¹⁰¹ ¹⁰². Whilst these figures hide fluctuation between years (such as 80.4% of natural features in favourable condition in 2016, the highest since monitoring began in 2005), they indicate that the percentage of natural features in favourable condition within Scotland's designated sites will not be significantly different by 2029.
- 7.3.3 The most recent report on population trends of common breeding birds in the UK, by the British Trust for Ornithology (BTO) ¹⁰³, highlighted that long-term trends (measured over the longest period of available data, which is usually 50 years) vary between species groups:
 - Birds of prey populations have generally increased as a result of a ban on the use of certain pesticides, increased legal protection leading to a reduction in persecution and positive conservation efforts. Persecution of hen harrier on grouse moors and changes in land use have been attributed to population declines in some areas.
 - Populations of most waterbird species have increased, likely due to increased water quality and warmer winter temperatures. Conversely, the breeding populations of most wader species (including redshank) in the UK show long-term declines, mostly as a result of habitat loss, intensification of land use and predation of their ground nests.
 - The populations of species which are typically found within woodland habitats have generally increased, by being able to make use of green areas within suburban environments and due to warmer winters. Numbers of species which have specialist habitat requirements have declined and this is

attributed to fundamental changes in woodland habitat quality in recent decades.

7.3.4 The drive towards Biodiversity Net Gain (BNG), meeting United Nations (UN) sustainability targets in relation to biodiversity and consideration of Natural Capital in policy will be key to the future protection and enhancement of Scottish biodiversity and the wider natural environment.

8. Soils

8.1 Baseline

- 8.1.1 Soil is a valuable and finite natural resource with a profound effect on health and wellbeing, while also supporting every aspect of the natural and built environment. Its contribution to ecosystem services and environmental goods is now widely acknowledged. Soil has inter-relationships with several SEA topics (as visualised in Figure 4.1 in Section 4.11) and is heavily influenced by a changing climate ¹⁰⁴. The classes of soil, as classified by the James Hutton Institute ¹⁰⁵, within the environmental study area are shown on Figure A4 in Appendix A (Environmental Figures).
- 8.1.2 Scotland's soils are highly variable due to the diverse geology and climate in Scotland. They play an important role in the carbon cycle during the carbon exchange process. Healthy soils serve as carbon storage; in Scotland, soils are rich in organic matter and account for over 50% of the UK's soil carbon ¹⁰⁶. Organic soils store vast quantities of carbon dioxide (CO₂), and it is estimated that Scotland's soils store 3 billion (bn) tonnes of CO₂ ¹⁰⁷. A significant amount of Scotland's soil is comprised of peatland, which is the largest natural terrestrial carbon sink. Moreover, they are a key part of the landscape and cultural heritage. Peatlands cover more than 20% of the country's land area, storing 1.6 bn tonnes of CO₂ through carbon sequestration.
- 8.1.3 However, certain pressures on Scottish soils, such as climate change, changes in land use and land management, including the built environment, could have significant potential effects on soil degradation 108 . It is estimated that over 80% of Scotland's peatlands are degraded, which means they emit more CO_2 than they sequester 109 . Because soil is part of a complex and interconnected system, its degradation has a wider impact on the environment, society, and the economy 110 .
- 8.1.4 Therefore, sustainable management and protection of soils is key to ensuring that soils can deliver essential functions vital for the sustainability of Scotland's environment and economy ¹¹¹, including:
 - storing carbon and maintaining the balance of gases in the air
 - biomass production (including agriculture and forestry)
 - filtering and buffering pollutants

- regulating the flow of and providing storage for water
- providing a physical environment for human activity (including built development)
- providing habitats and supporting biodiversity
- a source of raw materials
- preserving cultural and archaeological heritage.
- 8.1.5 The study area is located in the North East of Scotland between Inverness and Aberdeen, where soils at lower altitudes are dominated by alluvial soils, particularly in lower river valleys. The majority of peat and peat podzols found at higher altitudes belong to Classes 3, 4 and 5 ¹¹². Classes 1 and 2 are considered of national importance. Additionally, mineral podzols predominate over much of the study area in combination with brown soils and mineral gleys. A detailed description of soils, including their location and characteristics, is summarised in Table C8.1.

Table C8.1: Soil types in the Study Area

Type of soil	Location	Characteristic
Mineral podzols	They are present in most of the study area, including Inverness-shire, Morayshire, Aberdeen City, and the central and eastern parts of Aberdeenshire.	Mineral podzols play a significant role in facilitating groundwater recharge ¹¹³ .
Alluvial soils	They are present in most of the study area, including Inverness-shire, Morayshire, Aberdeen City, and the central and eastern parts of Aberdeenshire.	Alluvial soils serve as the 'kidney of the earth' by filtering water, reducing flood risk and influencing climate 114.
Peat, peaty podzols and peaty gleys	Peat and peat podzols occur frequently at higher altitudes throughout the study area. The highest density can be observed south-east of the River Spey, from Moray Council area to Aberdeen City Council area. Peaty gleys are scattered in small amounts across the study area, with	Classes 1- 5 are present in the study area. The study area contains a small amount of peat with nationally important carbon-rich soils, deep peat and priority peatland under Class 1 (areas likely to be of high conservation value) and Class 2

Type of soil	Location	Characteristic
	the highest concentration in the southern part of Inverness-shire.	(areas of potentially high conservation value and restoration potential).
		Class 3 (not priority peatland habitat), Class 4 (area unlikely to be associated with peatland or high carbon soils) and Class 5 (no peatland habitat recorded, soils are carbon-rich and deep peat) – these categories include most of the identified peat ¹¹⁵ .
Brown soils	A high frequency occurs from the eastern edge of the Moray Council area to the Aberdeen coastline.	Brown soils are well-drained and have a high level of fertility and are therefore often cultivated. In Scotland, their occurrence is restricted ¹¹⁶ .
Mineral gleys	They are present throughout the study area but in higher density in the middle section, between the Moray Council area and Aberdeenshire.	This type of soil supports a variety of wet plant species used for grazing or forestry ¹¹⁷ .

8.1.6 Agriculture is crucial for growing crops, raising livestock, providing ecosystem services and sustaining human needs. It has both beneficial and harmful effects on soil and the environment. In particular, industrial agriculture negatively affects the quality of water resources and air pollution, reducing organic matter and releasing carbon. Furthermore, the climate crisis, the use of pesticides, fertilisers, and erosion can have an adverse impact on soil health ¹¹⁸. Agriculture dominates Scotland, accounting for over 80% of the country's geological area ¹¹⁹. Sustainable land management and land restoration need to be prioritised in order to have productive and healthy soils. Using the classification of the Land Capability for Agriculture classification ¹²⁰, the study area comprises a variety of soil types with varying productivity and cropping adaptability, ranging 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. Most of the land equates to Classes 3.1 (land capable of producing consistently high yields of a narrow range of crops and/or moderate yields of a wider range) and 3.2 (land capable of average production, though high yields of barley, oats, and grass can be obtained). Other present Classes are 2 (land capable of producing a wide range of crops), 4.1 (land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereals), 4.2 (land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops), 5.1 (land capable of use as improved grassland, establishment of the sward and its maintenance present few difficulties) and 5.2 (land capable of use as improved grassland, sward establishment presents no difficulties but physical limitations can cause maintenance problems).

- 8.1.7 The British Geological Survey mapping covers artificial ground, superficial deposits and bedrock geology. Areas of artificial ground are indicated within the study area as made ground, infilled ground and worked ground. The superficial deposits are variable, consisting of sands, gravels, silts and clays. In the western section of the study area, around Nairn and Forres, the deposits are typically a mixture of River Terrace, Alluvium, Glaciofluvial and Glacial Till with localised peat. Towards the coastal areas, Intertidal and Raised Tidal Flat deposits are present with areas of Blown Sand and Alluvium. Moving east towards Fochabers, the superficials are shown as predominantly comprising Glaciofluvial deposits and Glacial Till, with localised Alluvium and peat. Further east, Glacial Till becomes more widespread across the study area.
- 8.1.8 The management and mitigation of contaminated land needs to be considered too, as some contaminated sites have been identified within the study area in the towns of Elgin and Huntly. However, additional land may fall into this category as there is no definitive list of all potential contaminated sites in the study area. There are no Special Sites with respect to Part IIA of the Environmental Protection Act 1990 within the study area currently registered with SEPA ¹²¹. A Special Site is contaminated land which meets one of the descriptions in the regulations and has been designated by the local authority.
- 8.1.9 Within the study area, several areas have been classified as environmentally sensitive. There are 17 geological and five mixed (i.e., biological and geological) SSSIs scattered throughout the area. The SSSIs and Geological Conservation Review (GCR) sites are listed below. Similar to geological or mixed SSSIs, GCR sites contain geological and geomorphological features of national and international importance.
 - Ardersier GCR site
 - Ardersier Glacial Deposits geological SSSI
 - Binhill Quarry geological SSSI/GCR site

- Boghole, Muckle Burn geological SSSI/GCR site
- Clashach Covesea geological SSSI/GCR site
- Clava GCR site
- Culbin GCR site
- Culbin Sands, Culbin Forest and Findhorn Bay mixed SSSI
- Cutties Hillock geological SSSI/GCR site
- Dalcharn GCR site
- Dalroy and Clava Landforms geological SSSI
- Dipple Brae geological SSSI/GCR site
- Findrassie geological SSSI/GCR site
- Hill of Barra geological SSSI/GCR site
- Kildrummie Kames mixed SSSI/GCR site
- Lower River Spey mixed SSSI/GCR site
- Masonshaugh geological SSSI/GCR site
- Pitcaple and Legatsden Quarries geological SSSI
- Pitsmedden and Pitscurry Quarries GCR site
- Pittodrie geological SSSI/GCR site
- Randolph's Leap geological SSSI/GCR site
- Scaat Craig geological SSSI/GCR site
- Spey Bay mixed SSSI/GCR site
- Spynie GCR site
- Spynie Quarry geological SSSI
- Teindland Quarry geological SSSI/GCR site
- Tynet Burn geological SSSI/GCR site
- Whiteness Head mixed SSSI/GCR site.

8.2 Inter-relationships with other Topics

Climatic Factors

8.2.1 Soils and peat store carbon within the corridor and help maintain the balance of gases in the air. There is potential for carbon loss to the atmosphere through exposure of and disturbance to organic soils. Sealing of soils would reduce the capacity to assimilate carbon within the corridor. Compaction/structural degradation and erosion can result in loss of carbon storage function and flux of greenhouse gases, thus affecting climactic factors.

Population and Human Health

8.2.2 Soils and peat support industries such as agriculture within the corridor and provide resources and means of employment for the population, thus also supporting human health and wellbeing.

Material Assets

8.2.3 Soils and peat are important natural assets that underpin other ecosystem services within the corridor. Loss of organic matter and soil sealing would have the potential to result in loss of nutrients which in turn would lead to loss of fertility/productivity.

Water Environment

8.2.4 Soils and peat regulate the flow of water and also provide water storage within the corridor. They also filter and buffer pollutants. Soil erosion and runoff from compacted/degraded soils can lead to transportation of contaminated soils which can adversely affect water quality within the corridor, as well as changing hydrological regimes which also has the potential to affect flood risk.

Biodiversity

8.2.5 Soils and peat provide habitats and support biodiversity within the corridor. Soil quality is defined as the ability of soils to carry out essential environmental, social and economic functions. Soil biodiversity is essential to most soil functions and affects the sustainability of species and habitats which rely on soils, whilst soil organisms play a vital role in maintaining soil carbon and soil nitrogen and exchange of greenhouse gases. Soil sealing would reduce the capacity of the corridor to support habitats and biodiversity and potentially affect the sustainability of species and habitats that rely on soils and soil biodiversity.

Cultural Heritage

8.2.6 Soils and peats preserve cultural and archaeological heritage within the corridor. Soil sealing or loss/disturbance of peat may result in loss of historical artefacts or archaeological features within the corridor.

Landscape and Visual

8.2.7 Soils and peat support the growth of plants and trees which provide landscape and visual value within the corridor. Loss of organic matter or soil sealing may result in changes in habitats and land use that may affect visual amenity and landscape character.

8.3 Evolution of the Baseline and Trends

8.3.1 Soil formation is very slow. Due to a range of climatic processes, Scottish soils are comparatively younger than other soils. This lengthy process takes hundreds of

years for a few centimetres of soil to form ¹²². In contrast, soil degradation occurs very quickly, particularly due to climate change and human activities. The impacts of climate change include temperature change and run-off erosion from highintensity rainfall, which leads to soil erosion and soil loss through other sources of flooding ¹²³. Furthermore, certain human activities can also impair the functionality and capability of the soil. With a projected 7% increase in the Scottish population over the next 25 years, as well as further economic growth ¹²⁴, sustainable management of this asset will be of the utmost importance, especially in terms of land use and land management. Through land use and land management, soils can be protected from sealing, compaction, loss of organic matter, contamination, changes in soil biodiversity, or even erosion and landslides, with secondary impacts on other environmental receptors and SEA topics. Therefore, if future development in certain sections of the study area is not appropriately managed, soil could be lost to erosion or degraded. Greenhouse gas emissions that are currently sequestered in peat and other carbon-rich soils could also be released into the atmosphere and contribute to climate change, as described in Section 1 (Climatic Factors).

9. Cultural Heritage

9.1 Baseline

- 9.1.1 Scotland has a unique and varied selection of irreplaceable cultural heritage sites that contribute to quality of life, the character of the country, cultural identity, education and economy. Scotland's historic assets attracted 18 million visitors in 2016 and over five million paying visitors, providing an educational role and a significant contribution to the tourist economy ¹²⁵. Cultural heritage assets are distributed around the country but can be found in clusters around historic settlements and on the coast.
- 9.1.2 An estimated £1.2bn was spent on repairing and maintaining the historic environment in 2017, with private investment accounting for 75% of total funding ¹²⁶. To protect valuable historic assets, there is also a process of designation which aims to identify the significance of the historic environment and protect it for future generations to enjoy. According to Historic Environment Scotland, Scotland's historic environment generated £4.2bn for the economy in 2017 and supports 66,000 full-time jobs ¹²⁷. Globally, Scotland is ranked 12th out of 50 countries ranked for its reputation of having a rich cultural heritage.
- 9.1.3 The study area has a rich cultural heritage, with large numbers of Listed Buildings, Conservation Areas, Scheduled Monuments and Gardens and Designed Landscapes, and Historic Battlefields. Category A Listed Buildings, Conservation Areas, Scheduled Monuments, Gardens and Designed Landscapes, and Historic Battlefields are illustrated on the figures provided in Appendix A (Environmental Figures: Figure A1). In particular, there are very large numbers of Listed Buildings

and Scheduled Monuments within the study area. There are no World Heritage Sites or Historic Marine Protected Areas within the study area.

- 9.1.4 In total, the study area contains:
 - 1,987 Listed Buildings
 - 236 Scheduled Monuments
 - 20 Conservation Areas
 - 17 Gardens and Designed Landscapes
 - four Historic Battlefield Inventory Sites.
- 9.1.5 Non-designated sites account for 90-95% of the historic environment ¹²⁸ and provide crucial contextual information to help better understand the history and development of the landscape within the study area, as well as the archaeological potential of the area. Aberdeen City, Aberdeenshire, Highland and Moray council areas have approximately 412; 3,092; 2,212 and 5,479 non-designated cultural heritage assets respectively.
- 9.1.6 There is also potential for previously unrecorded cultural heritage assets to be located within the study area, given the area contains known heritage sites and artefacts dating from the early prehistoric period through to the modern period. Information gathered on both designated and non-designated assets is important for assessing the archaeological potential of the study area.
- 9.1.7 The designated and non-designated historic landscape and seascape in the study area is also important. The historic landscape has developed as a result of land management, agriculture and settlement patterns.
- 9.1.8 Inappropriate development is a key pressure on the historic environment, from direct physical impacts to designated, non-designated and unrecorded assets. It can also result in indirect impacts on the setting of heritage assets. Pressure also comes from visitors, land use changes and climate change.
- 9.1.9 Measures to reduce the need to travel, manage demand and encourage modal shift have the potential to enhance the integrity of the cultural environment in the urban and rural areas through an associated reduction in traffic levels and air pollution from vehicles and an increase in sustainable access to historic sites.

9.2 Inter-relationships with other Topics

Climatic Factors

9.2.1 Climate Change can threaten the cultural heritage resource through erosion, flooding and wetter, warmer conditions. Through waterlogging, climate change could also influence soil creep and erosion levels (e.g. gully erosion) and hence any cultural heritage resources within the soil.

Population and Human Health

9.2.2 The long-term viability of Listed Buildings and other cultural heritage resources is very important to local communities and visitors. Cultural heritage resources are also related to the Population and Human Health SEA topic, as Listed Buildings contribute to the understanding of the history of the area, as well as the sense of place and visitor experience.

Soils

9.2.3 The Geology and Soils SEA topic is relevant to cultural heritage, as the protection of peat soils, which are known to exist in the corridor, could potentially contain undiscovered archaeological remains and organic remains. The protection of these soils could therefore be important for the protection of the archaeological remains and organic remains within them.

Landscape and Visual

9.2.4 The Landscape and Visual Amenity SEA topic is relevant, as historic activities have sometimes created a landscape (e.g. historic field systems) or cultural heritage resources could form an integral part of the landscape. Cultural heritage resources are also an important visual amenity and help to create a sense of place.

Evolution of the Baseline and Trends

- 9.2.5 Inappropriate development will continue to be a key pressure on the historic environment and cultural heritage, unless mitigation is implemented. For example, the development of new transport infrastructure can affect historic landscape and may cause direct damage to heritage assets, their curtilage or setting. Increasing levels of congestion will also continue to affect historic towns, cities and the countryside. Air pollution from transport and other sources can also cause physical damage to heritage assets such as historic buildings.
- 9.2.6 It is projected that Scotland will become warmer and wetter as a result of climate change, resulting in the increased weathering of stone, rotting timbers and corrosion of metals. Rising sea levels and increased storm events may increase coastal erosion, endangering our historic landscape, structures, buildings and archaeology in the coastal zone. Some of Scotland's unique and special sites are at most risk. This threat will grow in the future given the predictions of the likely effects of climate change for the remainder of this century.

10. Landscape and Visual

10.1 Baseline

10.1.1 Rich in diversity, Scotland's landscapes are internationally renowned. Landscapes are a significant part of the country's cultural and national heritage, contributing to

the economy and the wellbeing of the population. They play a key role in attracting tourism and providing opportunity for outdoor recreation. Key landscape designations in the study area are shown on the figures provided in Appendix A (Environmental Figures: Figure A1).

Landscape Character

10.1.2 The Landscape Character Assessment of Scotland ¹²⁹ classifies the study area into 30 distinct Landscape Character Types (LCTs) between Inverness and Aberdeen.

Farms and Forested Slopes - Ross & Cromarty

10.1.3 Small sections of this LCT overlap with the western edge of the study area. The Farmed and Forested Slopes – Ross & Cromarty of the northern Inner Moray Firth are located in large tracts on the south side of the Black Isle and the north side of the Cromarty Firth around to the Dornoch Firth, and in smaller areas on the slopes to the south and west of the Farmed River Plains. They also occur on the slopes of Knockfarrel.

Cliffs and Rocky Coasts - Ross and Cromarty

10.1.4 Two small areas of this LCT overlap with the western edge of the study area. This LCT along the Inner Moray Firth occupies the majority of the south-east edge of the Black Isle and the headland from Nigg to just west of Portmahomack. A series of sea cliffs, of both rock and softer material, forms a dramatic rocky coastline.

Coastal Shelf

10.1.5 This LCT occupies a triangle of land between Fortrose and Rosemarkie, extending into the Moray Firth at Chanonry Point at the western edge of the study area. It is located around the eastern perimeter of the area on the coastal edge, at Rosemarkie, Morrich More and the Dornoch Firth. Similar LCTs continue northwards into Sutherland and Caithness, and eastwards to Inverness and Whiteness Head.

Coastal Farmlands - Moray and Nairn

10.1.6 This LCT occupies a large proportion of the western half of the study area. It runs east to west between Inverness and Cullen, in a broad, continuous band some 90km long. This LCT lies on the coastal plain between the coastal shore and forests to the north and farmed and wooded foothills to the south. The central part is locally known as the Laich of Moray.

Rolling Farmland and Woodland

10.1.7 This LCT forms a belt along the south side of Inverness, extending north-eastwards into the study area to form a low ridge between the A96 corridor and the River Nairn valley within the Farmed Strath LCT. It occurs in one broad band which forms

a rural backdrop to the west, south and east of Inverness. The distinctiveness and extent of this type is gradually reducing as Inverness and surrounding commuter towns expand.

Farmed Strath – Inverness

10.1.8 This LCT follows the River Nairn valley extending north-eastwards into the study area in a band separated from the A96 corridor by the neighbouring Rolling Farmland and Woodland LCT. It occurs in two locations – at Strathnairn/Stratherrick and Strathglass – where it forms a linear to sinuous channel through the surrounding upland landscape. The straths run south-west to north-east and open to the farmed and wooded slopes and plains around Inverness. The straths are characterised by mainly open farmed valley floors and a central meandering river contained within steep, mainly forested and wooded slopes. Strathglass is narrower, more enclosed and less settled than Strathnairn.

Rolling Uplands - Inverness

10.1.9 This LCT occupies a small area at the south-western edge of the study area. It consists of rolling hills which lie to the south-east of the Great Glen and form an upland backdrop to much of the eastern part of Inverness district, extending far beyond the district boundary and into the Cairngorms National Park. The uplands act as a sheltering edge to the Farmed Strath landscape type, from which they rise. They also form a backdrop to more distant areas to the south, east and west where they seem to merge into an undulating skyline without any clearly identifiable features.

Open Rolling Upland

10.1.10 This LCT occupies an area of high ground at the western end of the study area, which separates the valleys of the River Nairn (Farmed Strath LCT) from the upland valley of the River Findhorn. It is represented in one extensive tract of open uplands in the south-west of Moray cut through by the River Findhorn to form two areas, located on the northern part of Dava Moor and the foothills of the Strathdearn Hills to the south. It forms a relatively narrow band of broad rounded hills, interspersed with shallow valleys and low-lying moss adjacent to the generally lower Upland Moorland and Forestry. The landscape forms part of a more extensive area of similar upland extending south and west into the Highland Council area.

Rolling Farmland and Forests – Moray and Nairn

10.1.11 This LCT occupies much of the western half of the study area to the south of the A96 corridor. Two areas of this LCT are found to the south of the Coastal Farmlands – Moray & Nairn, on the foothills of the higher ground, between the rivers Spey and Nairn. The transition into the Upland Moorland and Forestry LCT to the south is



often wide and indefinite, reflecting the gradual rise in elevation and merging patterns of land cover.

Beaches, Dunes and Links - Moray and Nairn

10.1.12 This LCT occupies much of the narrow coastal fringe between Fort George and Buckie in the northern part of the study area. The majority of the Moray and Nairn coastline is Beaches, Dunes & Links – Moray & Nairn, originally formed from the erosion of soft Devonian bedrock which dominate the coastal plain west of the River Spey. It consists of two long narrow sections from Fort George to Burghead and from Lossiemouth to Buckie, between which is a short section of Cliffs and Rocky Coast – Moray & Nairn.

Coastal Forest

10.1.13 This LCT occupies two areas of coniferous forest between Nairn and Burghead.

Three extensive areas of this LCT exist south of the Beaches, Dunes & Links – Moray & Nairn of the Moray Firth. These are located west of Burghead, east of Lossiemouth, and east of Nairn where the 14-kilometre long Culbin forest is located.

Narrow Wooded Valley - Moray & Nairn

10.1.14This LCT crosses the southern half of the study area to the south of Nairn and contains the middle reaches of the River Findhorn, which flows north-east through a channel dissecting the Open Upland, Upland Moorland and Forestry, and Rolling Farmlands and Forests – Moray & Nairn character types, before emerging on the coastal plain near Forres.

Upland Moorland and Forestry

10.1.15 This LCT overlaps the southern edge of the study area in two locations; west of the River Findhorn valley and east of the River Spey valley. The two areas of this LCT, which are separated by the Narrow Wooded Valley - Moray & Nairn of the River Findhorn, form a transition zone between the higher Open Upland to the south, and Rolling Farmland and Forests to the north. The transition to these rolling hills is often indefinite, reflecting the gradually falling elevation and merging patterns of land cover.

Broad Farmed Valley

10.1.16 This LCT crosses the southern part of the study area, south of Fochabers, and contains the lower reaches of the River Spey, as it flows north-east from the Cairngorms National Park boundary to dissect the uplands and moorlands of southern Moray. The valley opens out to the north, to merge with Coastal Farmlands – Moray and Nairn at Inchberry.

Low Forested Hills

10.1.17 This LCT extends across the study area west of Fochabers and occurs in eastern Moray as a ridge of tree-covered higher ground running east to west, located to the south of the Coastal Farmlands – Moray and Nairn.

Upland Farmland

10.1.18 This LCT extends across the study area to the south of the Low Forested Hills LCT. The town of Keith sits at the centre of this LCT at the crossroads of the A95 and A96 and is on the Inverness to Aberdeen railway line. This LCT in Moray is represented by one area of mid-elevation, coastal uplands, to the north-east of the Spey. The character type is positioned between the Low Forested Hills to the north and Upland Farmed Valleys to the south-west. To the east, it transitions into the Low Hills and Basins and Farmed and Wooded River Valley. To the south, it merges into the Farmed Moorland Edge.

Upland Farmed Valleys

10.1.19 This LCT overlaps the southern part of the study area to the south-west of the neighbouring Upland Farmland LCT. The Upland Farmed Valleys LCT is represented by one area in Moray to the east of the Spey and forms a transition between the lower-lying Upland Farmland to the north and the Open Upland to the south.

Farmed Moorland Edge

10.1.20 This LCT, which is bisected by the A96 extends across the study area north-west of Huntly. It lies on the edge of higher moorland Summits and Plateaux - Aberdeenshire, forming a transition between these upland areas and the lowland agricultural heartlands of Aberdeenshire, sharing many characteristics with both.

Open Upland

10.1.21 Two small areas of Open Upland overlap with the southern edge of the study area, east of the River Spey valley and south of Drummuir. This LCT represents extensive tracts of open uplands in the far south-east of the Moray, forming the transition to the Upland Farmed Valleys to the north, and extending south-west beyond the Moray Council boundary, to incorporate the Hills of Cromdale and join the Ladder Hills at the north-eastern edge of the Cairngorm mountains. It also includes the Ben Aigan area. The LCT is severed by and overlooks the Upland Valleys – Moray & Nairn of Glenlivet, Glen Rinnes and Strathavon, as well as the Broad Farmed Valley of the River Spey.

Farmed and Wooded River Valleys

10.1.22 Two bands of this LCT cross the southern part of the study area, following the valleys of the rivers Deveron and the Bogie joining at Huntly, and then continuing north-eastwards across the study area. It comprises the well-settled, wooded and diverse valleys of the rivers Deveron Bogie and Ythan. They form a significant feature within the extensive agricultural heartlands of Aberdeenshire, flowing out to the sea at Macduff. The landscape is attractive with a high degree of integrity.

Outlying Hills and Ridges

10.1.23 Three areas of this LCT are located in the study area either side of the River Bogie Valley to the south of Huntly. This LCT lies at the transition between the high mountains of the Cairngorms and the low farmland of the north-east coastlands in Aberdeenshire. It comprises a series of moorland spurs that extend from the central massif of the Cairngorms into the farmed landscape of Garioch and Formartine, forming prominent areas of high ground.

Farmed Rolling Ridges and Hills

10.1.24 Two areas of this LCT cross the study area either side of the River Bogie Valley to the south of Huntly. This LCT forms a broad swathe of gently rolling farmland lying between the Farmed and Wooded River Valleys to the west and the *Farmed Basins* LCTs to the south. It is generally more elevated and hillier than the more open plains of the Undulating Agricultural Heartlands which lie to the east of the Deveron. In places, this landscape is punctuated by narrow undulating higher ridges of the outcropping Outlying Hills and Ridges.

Farmed Basin Aberdeenshire

10.1.25 This LCT crosses the study area in a broad belt running between Rhynie and Old Meldrum and is bisected by the A96. It comprises three areas - the 'Howe of Cromar', Insch Basin and the 'Howe of Alford' in the centre of the county. These areas form flat to gently undulating broad basins surrounded by the higher Outlying Hills and Ridges LCT.

Wooded Estates – Aberdeenshire

10.1.26 A large area at the southern end of the study area, west of Aberdeen, is occupied by this LCT. This LCT occupies a substantial area east of Bennachie between the Don and the Dee valleys and extending to the edge of Aberdeen. It is a landscape of low hills and wide valleys, with dense woodland as a consistent feature.

Coastal Agricultural Plain - Aberdeenshire

10.1.27 This LCT overlaps the study area east of the River Urie valley and Inverurie. It is an extensive LCT comprising a low-lying and often very open sweep of exposed farmland in eastern Aberdeenshire where the influence of the sea is particularly strong. It is characterised by its gently undulating landform, relatively large scale,

extensive mosses and the influence of development including transmission masts, electricity transmission lines, the A90 and A953, and the gas terminal at St Fergus on its eastern edge. The transition between the Beaches, Dunes and Links LCT in the east and the hinterland formed by this landscape is very gradual.

Narrow Winding Farmed Valley

10.1.28 This LCT follows the northern side of the River Don valley between Hatton of Fintray and Dyce in the south-east of the study area. It occurs for a small stretch of the River Don, close to Aberdeen, where the river forms the boundary between Aberdeenshire and the city. It forms the northern side of the River Valley - Aberdeen LCT of Aberdeen City. To the west, the landform becomes broader with a less distinct valley shape and is thus included in the Wooded Estates - Aberdeenshire.

River Valley - Aberdeen

- 10.1.29 This LCT follows the southern side of the River Don Valley between Hatton of Fintray and Dyce in the south-east of the study area.
- 10.1.30 The Rivers Dee and Don both lie in well-defined granite valleys within Aberdeen and are key features of the city. These rivers form the boundaries of the city with the southern valley side of the Dee and the northern side of the upper Don valley lying in Aberdeenshire. Both the Dee and Don are classified as the River Valley LCT within the Aberdeen Landscape Character Assessment.
- 10.1.31 The Dee valley continues as a pronounced feature upstream, and is accordingly defined as a separate LCT, the Broad Wooded and Farmed Valley, in Aberdeenshire. The southern valley side of the Dee which lies in Aberdeenshire is also classified as this LCT.
- 10.1.32 The northern side of the Don valley, which lies in Aberdeenshire, is included in this LCT. The Don valley is less defined as it flows across a broad farmed plain to the west of the city boundary and is thus incorporated into the Wooded Estates LCT in Aberdeenshire.

Low Hills - Aberdeen

10.1.33 This LCT occupies high ground at the east end of the study area, north and south of the A96 corridor near to Dyce and Kingswells. Within Aberdeen City, it comprises well-defined rounded hills with steep slopes which lie on the western and southern edges of Aberdeen, occurring in three locations. Immediately to the west of the city boundary in Aberdeenshire, hills of a similar height (but generally less well-defined in form) are incorporated into the Wooded Estates LCT.

Undulating Open Farmland

10.1.34 Four areas of this LCT are located within the study area north-west of Aberdeen. The largest of these extends from the A96 just east of Blackburn to Kingswells. The Undulating Open Farmland LCT largely forms part of the broader Wooded Estates LCT which extends to the west and, in a narrower sliver, to the north-west of the city in neighbouring Aberdeenshire. It occurs in five locations within Aberdeen City. These comprise both more open, gently undulating farmland as well as well-wooded areas where estates have a greater influence. The finer grain of the Aberdeen City landscape character assessment has resulted in the predominantly open and the more wooded areas within the city area being separately defined at a local level into Undulating Open Farmland and Undulating Wooded Farmland LCTs. There are eight areas where this Undulating Open Farmland LCT occurs.

Wooded Estates Aberdeen

10.1.35 This LCT lies at the eastern end of the study area, extending southwards from the A96 corridor. Within Aberdeen City it occurs in two patches, comprising three locations; Craibstone, Hazelhead Park and Countesswells. These do not abut Aberdeenshire.

Local Landscape Areas

- 10.1.36 Within the study area, there are a number of Local Landscape Areas (LLAs), the intention of which is to:
 - help protect a landscape from inappropriate development
 - encourage positive landscape management
 - play an important role in developing an awareness of the landscape qualities that make particular areas distinctive
 - promote a community's sense of pride in its surroundings.
- 10.1.37 In Aberdeenshire, important landscapes are designated as Special Landscape Areas.

Sutors of Cromarty, Rosemarkie and Fort George LLA (Highland)

10.1.38 This LLA spans the Moray Firth to the north-east of Inverness, taking in the coastline between Fortrose and the Carse of Delnies within the study area. This SLA encompasses some of the key landscape features of the Inner Moray Firth. It is an area of contrasts which forms the gateway between the open coast and expansive waters of the Moray Firth and the intimate landscapes of the Cromarty and Inverness Firths. The twin headlands at North and South Sutor which stand guard over the entrance to the Cromarty Firth are another key feature, visible from a considerable distance. Another important juxtaposition is formed by the opposing low-lying promontories at Chanonry and Fort George which reach out to each other and mark the entrance to the Inner Moray Firth. Both promontories have landmark buildings at their seaward extremities and are vantage points in their own right.

- However, as landforms and as examples of human geography, they are perhaps best appreciated from the higher ground adjacent and to the north.
- 10.1.39 This elevated perspective also reveals the extensive sandbanks between Fort George and Whiteness Head.
- 10.1.40 The steep coast between the South Sutor and Rosemarkie provides further contrasts and has some qualities of wildness in an area which is otherwise manmodified or inhabited to some degree.

Culbin to Burghead Coast LLA (Moray)

10.1.41 This LLA includes Culbin and Roseisle Forests and Findhorn Bay in the north-western part of the study area. It comprises part of the renowned Moray coast and the more diverse coastal forest which adjoins it. While all this coast is a popular destination for recreation, it is particularly well-frequented close to Findhorn. The Culbin area includes nationally important coastal features and wildlife habitats. The intriguing history of this stretch of the Moray coast also adds a further dimension to the richness of this landscape with nationally important WWII structures forming an important part of its character.

Findhorn Valley and the Wooded Estates LLA (Moray)

10.1.42 This LLA occupies a broad swathe of land including the Findhorn valley and land either side extending south across the study area from the A96. This designation recognises the richly wooded character of the western part of Moray which is influenced by the long-established estates which border the dramatically incised River Findhorn. While the river, which is covered by national designations for its geological and wildlife value, forms the key feature of this candidate Special Landscape Area (SLA), the woodlands and designed landscapes which lie either side of it, contribute to the richness of this landscape with built features associated with the estates further complementing the whole. The landscape is additionally very well-used for recreation, forming a major attraction within Moray.

Pluscarden Valley LLA (Moray)

10.1.43 This LLA lies in the southern part of the study area between Forres and Elgin. This designation recognises the strongly contained and diversely wooded setting this landscape provides to the Category A-Listed 13th century Pluscarden Abbey which lies at its heart.

Burghead to Lossiemouth Coast LLA (Moray)

10.1.44 This area of coastal landscape overlaps the northern edge of the study area. This section of the coast is particularly scenic as it features the highest cliffs in Moray and comprises a richly complex array of other rocky landform features with some of these designated for their geological interest. This coast is also important in

terms of early history with reptile fossils and evidence of early people's use of caves adding to its interest. Like all the Moray coast, this LLA is well-used for recreation.

Quarrelwood LLA (Moray)

10.1.45 This relatively small LLA is located west of Elgin to the north side of the A96. The close association of this well-used community-run woodland to Elgin and its diverse mix of oak, beech and pine, together with the fascinating prehistoric and cultural heritage of this area, form the key reasons for designation.

Spynie LLA (Moray)

10.1.46 This relatively small LLA lies in the northern half of the study area between Lossiemouth and Elgin. The reasons for designation relate to the variety of the landscape which is significantly enhanced by its distinctive cultural heritage and the nationally important nature conservation interests associated with Spynie Loch. In addition, the close location of the landscape to Elgin, and the presence of Spynie Palace and the loch makes this area attractive for bird watchers, walkers and visitors.

The Spey Valley LLA (Moray)

10.1.47 This LLA crosses the study area to the south of Fochabers where it adjoins the Lower Spey and Gordon Castle Policies LLA. The diverse and handsome landscape of broad gently weaving river, floodplain farmland, wooded valley sides and distinctive settlements together with the romance associated with the Spey due to its connection with whisky distilling are key reasons for designation of this LLA.

Lower Spey and Gordon Castle Policies LLA (Moray)

10.1.48 This LLA extends from the A96 north of Fochabers to meet the Lossiemouth to Portgordon Coast LLA (described below). The two contrasting components of this LLA, the lower Spey Valley and Gordon Castle policies, complement each other. The richness of the Spey for wildlife but also recreational pursuits is recognised in the designation, as is the relationship of the nationally important Gordon Castle policies to Fochabers and its value in providing an attractive setting to the town and to the lower Spey.

Lossiemouth to Portgordon Coast LLA (Moray)

10.1.49 The braided mouth of the Spey and ridged cobble beaches of this LLA are rare features within Moray and include areas designated for their geomorphological and nature conservation importance. Like all the Moray coastline, this LLA is also well-used for recreation although a sense of seclusion is a key characteristic in the more remote middle sections of the coast where scheduled WWII defences have a particularly evocative quality.

Portgordon to Cullen Coast LLA (Moray)

10.1.50 This LLA extends eastwards from the Lossiemouth to Portgordon Coast within the northern part of the study area. The coastal edge is low and rocky in the west and is largely modified to form harbours and quays. East of Findochty however, the coast becomes more diverse with rocky headlands, cliffs, stacks and arches. Sandy beaches are also present, with the largest of these occurring at Cullen Bay. The Bow Fiddle Rock at Portknockie is a celebrated natural arch of tilted banded quartzite lying off the coast. The coast around Cullen (and extending into neighbouring Aberdeenshire) is designated in part for its geological interest.

Deveron Valley Special Landscape Area (Moray and Aberdeenshire)

- 10.1.51 This LLA crosses the A96 to the west of Huntly. Aspects and features contributing to its designation include:
 - Meandering river, framed by rolling wooded hills and ridges, providing views into the valley.
 - Strong network of woodland throughout the valley provides landscape structure and wildlife habitat. A variety of woodland types include coniferous plantations, deciduous hilltop copses, shelter belts and a wealth of roadside trees including beech and ash.
 - The presence of historic estates has a strong influence along the river, including parkland around Duff House, Forglen and others, but more generally in the wooded landscape.
 - The valley landscape forms an important part of the setting of various settlements, including the planned town of Huntly and the market town of Turriff.
 - Distinctive local granite architecture displayed in villages and towns, farms and most notably in castles such as Huntly.
 - The attractive landscape makes the Deveron a popular setting for a range of outdoor recreation including fishing, canoeing, walking and cycling, with the NCN Route 1 between Banff and Turriff.
 - A continuous valley landscape, from the hills to the sea.

Bennachie Special Landscape Area (Aberdeenshire)

- 10.1.52 The following aspects and features of this landscape are considered worthy of recognition through LLA designation:
 - Bennachie is the iconic hill of central Aberdeenshire, instantly recognisable from across the wider landscape, in both long and short-range views.
 - Intact landcover of heather moorland on the main Bennachie ridge.

- Extensive woodland across lowland and upland, including native woods, estate policies and forestry plantations, with a substantial amount recognised as ancient woodland.
- Hill forts are found on summits such as Mither Tap and Tillymuick, with cairns and other features emphasising the long history of settlement.
- The River Don is a key feature of Aberdeenshire, meandering through the upland glen south of Bennachie, and across the farmland around Kemnay.
- The farmland to the east provides the setting to Bennachie, but also typifies lowland Aberdeenshire with its mosaic of wooded estates and open farmland.
- A hugely popular area, with walkers enjoying the spectacular views from the Bennachie summits, and Pitfichie being a centre for mountain biking.
- Panoramic views from the upland areas, particularly from the Bennachie summits, over the Don valley and beyond to the patchwork of Aberdeenshire farmland.

Woodland Character

- 10.1.53 According to the National Forest Inventory, wooded areas occur along the entire study area, concentrating on the outskirts of the towns of Nairn, Forres and Keith. In the southern part of the study area near Inverurie, there is less forestation than in the north. Approximately 26% of the study area is covered by woodland recorded on the National Forest Inventory. Conifers predominate (15%), but there are also areas of fallen trees, broadleaved trees, young trees, shrubs and mixed woodland.
- 10.1.54 According to the Ancient Woodland Inventory, approximately 28,171 hectares of long-established areas of woodland (of plantation origin) are found within the study area, mainly between Inverness and Huntly. In addition, approximately 1,317 hectares of ancient (of semi-natural origin) woodland are present within the study area. In total, 14% of the study area comprises ancient woodland cover.
- 10.1.55 According to the Native Woodland Survey of Scotland, there are approximately 31,691 hectares of native woodland and 1,813 hectares of nearly-native woodland present within the study area, totalling approximately 16% of the entire study area. A further 2% of the study area is covered by areas recorded on the Native Woodland Survey of Scotland as open land habitat (approximately 3,142 hectares) and woods planted on ancient woodland sites (PAWS) (approximately 2,661 hectares). Approximately 86,193 hectares (40%) of the study area is also recorded by the Native Woodland Survey of Scotland as being within the pinewood zone, which is the area within Scotland where Scots pine is deemed a native species, and approximately 405 hectares (0.2%) of woodland within the study area is recorded as being within Forest Research Experiment Sites on the National Forest Estate and private land.

- 10.1.56 In addition, approximately 8,646 hectares (4%) of the study area is recorded as core native woodland on the Integrated Habitat Network (IHN) for native woodlands in Scotland.
- 10.1.57 Approximately 506 hectares of woodland within the study area are also part of the Woodland Carbon Code, a government scheme administered by Scottish Forestry. The Woodland Carbon Code is a voluntary standard for woodland creation projects in the UK that allows the owners of new woodland planting schemes to calculate the total carbon sequestration that their woodland will achieve over the lifetime of the trees ¹³⁰.
- 10.1.58 The western part of the study area, between Inverness and Nairn, includes a number of small to medium-sized coniferous forestry plantations along with smaller areas of mixed and broadleaved woodland which tend to be concentrated along riparian corridors, such as the Nairn valley and within policy blocks and belts.
- 10.1.59 Between Nairn and Elgin, there are several larger coniferous forest plantations including Culbin Forest, which stretches for some 15km along the coastal plain, and upland forestry in the southern part of the study area at Darnaway Forest. There is also a greater concentration of broadleaf and mixed woodland in this part of the study area than west of Nairn, located along the main river corridors including that of the Findhorn which flows from south to north across the study area. South and south-west of Forres, there is extensive woodland cover on either side of the Findhorn valley, comprising a mix of coniferous and broadleaf/mixed plantations. Much of this woodland is included on the Ancient Woodland Inventory (AWI), mainly as long-established woodland (of plantation origin), but there is a significant area of AWI (of semi-natural origin) at Darnaway Forest on the west side of the River Findhorn.
- 10.1.60 Between Forres and Elgin, the central and northern parts of the study area are relatively open in character and the main areas of woodland are concentrated in the south in large conifer plantations and small broadleaf belts and blocks around Pluscarden, in the north along the coastal plain at Roseisle Forest and substantial broadleaf and mixed woodlands at Quarrelwood west of Elgin.
- 10.1.61 East of Elgin, there is an informal patchwork of pasture and arable land with woodland cover comprising small mixed and broadleaf blocks, riparian woodland and shelterbelts. Between Lhanbryde and the River Spey, there is greater woodland cover comprising small and medium-sized conifer plantations interspersed with small broadleaf and mixed woodlands. There is virtually continuous broadleaf and mixed woodland cover forming a narrow north-south oriented belt across the study area along the River Spey corridor and wrapping around the town of Fochabers.
- 10.1.62 To the east of Fochabers is the Wood of Cairnty, an extensive area of forestry plantation covering the central part of the study area north and south of the A96, and the majority of which is included on the Ancient Woodland Inventory as long-

- established woodland (of plantation origin). Around the town of Keith, the forest gives way to agricultural land with small, scattered woodland fragments including riparian woodlands.
- 10.1.63 Between Keith and Huntly, there are several medium and large-sized hill forestry plantations in the central part of the study corridor and on the higher ground to the south including Balloch Wood and the Bin Forest. Broadleaf and mixed woodland cover is relatively sparse in this part of the study area, with the main concentrations located towards the northern and southern edges and fringing the larger conifer plantations.
- 10.1.64 Between Huntly and Inverurie, there are two large areas of coniferous hill plantation in the southern part of the study including Bannachie Forest, but the northern half of the study area is mainly relatively open agricultural land, with a relatively small number of scattered conifer plantations, broadleaf woodlands and policies. The largest concentrations of mixed and broadleaf woodlands are in the central part of the study area North East of Bannachie and west of Inverurie.
- 10.1.65 Between Inverurie and Aberdeen, the western half of this stretch is characterised by a mosaic of mainly broadleaf and mixed woodland and farmland, with relatively little coniferous plantation. Woodland cover is generally less in the eastern half of this stretch with notable exceptions including various policy woodland and Kirkhill Plantation to the west of Aberdeen.

Tree Preservation Orders (TPOs)

10.1.66 There are various TPOs scattered through the study area, including several close to the existing A96 for example at Nairn, Keith and Thainstone.

Greenbelt

10.1.67 The eastern end of the study area is within the Aberdeen City and Aberdeenshire Greenbelt, the purpose of which is to help avoid coalescence of settlements and sprawling development on the edge of the city, maintain Aberdeen's landscape setting, and provide access to open space.

Key Visual Receptor Locations

10.1.68 Whilst the study area does not contain any nationally recognised scenic viewpoints, or nationally designated landscapes, there are visual sensitivities to some types of development within or visible from the Local Landscape Areas. There are also numerous towns, villages and rural properties, along with numerous paths, recreational trails and areas used for outdoor recreation where there is the potential for visual effects to occur.

10.2 Inter-relationships with other Topics

Climatic Factors

10.2.1 Climate change affects landscape directly and indirectly through coastal erosion, flooding, wetter, warmer conditions, as well as droughts and more frequent storm events. In the long term, it can alter landform, landscape pattern and character of the area, influence the plant species composition and distribution within land cover or damage existing landscape elements and features. Climate change can contribute to the spread of pests and diseases, which in turn affects the landscape resource as well as visual amenity (e.g. when a large number of trees die off as a result of pest or disease and need to be felled). Furthermore, climate change adaptation measures affect the landscape and visual receptors through the increasing introduction of renewable energy infrastructure into previously remote landscapes with few signs of human activity. Landscape elements, such as trees and woodlands, act as 'carbon sinks' (i.e. absorb and lock away more carbon from the atmosphere than they release) making a useful contribution to mitigating climate change. Conversely, any deforestation (i.e. overall loss in the total area of woodland) equates to the carbon being released back into the atmosphere which fuels further climate change.

Air Quality

10.2.2 Landscape elements, such as trees and other vegetation, absorb pollutants and particulate matter through their leaves and needles and thereby help to improve air quality. Less plant cover means less filtering capacity to clean the air.

Biodiversity

10.2.3 The Biodiversity SEA topic is relevant to landscape, as landscape provides habitat for wildlife. Changes to the landscape resource can alter habitats and their connectivity, which can result in both positive and negative effects on biodiversity, flora and fauna. Conversely, any mitigation and enhancement measures relevant to biodiversity can have an impact on the landscape and visual amenity. For these reasons, any landscape or planting proposals put forward as part of mitigation are normally prepared in consultation with biodiversity specialists. Natural capital considerations and ensuring positive effects for biodiversity can be factored into landscape design considerations to deliver more environmentally sustainable designs.

Water Environment

10.2.4 The Water Environment SEA topic is relevant to landscape as landscape elements and features rely on the water environment and can be damaged by flooding or being subjected to prolonged waterlogging. Conversely, landscape elements such as woodland intercept rainfall, increase transpiration, increase the filtration of surface water and slow the flow of water.

Cultural Heritage

10.2.5 Landscape incorporates cultural heritage resources (assets), which help to shape the historic landscape character. Cultural heritage and landscape both contribute to a sense of place. Cultural heritage assets include inventory gardens and designed landscapes. Some cultural heritage resources also act as landmarks or key viewpoints in the landscape, influence cultural associations of a place and affect the sensitivity of landscape receptors. Cultural heritage assets can also contribute to the visual amenity of the area. Landscape and visual mitigation and enhancement measures can affect cultural heritage assets so should be prepared in consultation with cultural heritage specialists.

Population and Human Health

10.2.6 The Population and Human Health SEA topic is relevant as green and open spaces in the landscape provide opportunities for people to exercise as well as enjoy and experience nature, enhancing their quality of life and improving their physical and mental health and wellbeing. Although anecdotal evidence of the latter has long been known, there is a growing body of scientific research related to this interrelationship and its importance has become highlighted during the COVID-19 pandemic. In addition, tourism and consequently the economic welfare of local communities, often rely on the rich, scenic landscapes of the area. Residential properties, core paths, hill walking trails, long distance walking and cycling routes and roads all serve as locations from which people (i.e. visual receptors) experience views and any changes to them.

Material Assets

10.2.7 Landscape elements (e.g. trees and woodland) provide numerous ecosystem services (i.e. processes by which the environment produces natural resources utilised by us all, such as clean air, water, food and raw materials). These are increasingly recognised and accounted for as Scottish natural capital (i.e. natural assets that humans derive a wide range of services from) and as such, comprise Material Assets.

Soils

10.2.8 Soil supports the growth of plants and trees which constitute part of the landscape resource.

10.3 Evolution of the Baseline and Trends

10.3.1 The expansion of many towns and cities and their associated infrastructure, such as roads and railways, is seen as a pressure and the distinctive landscape setting of many towns and cities is being lost due to this settlement growth. Measures that seek to reduce the need to travel, manage demand and encourage modal shift, could in turn reduce the need for new infrastructure and the likelihood of

- disturbance to the landscape posed by new construction. Other gradual changes to the landscape are likely to result from changes in forestry and farming practices, for example through the intensification to maximise yields.
- 10.3.2 Rising sea levels and increased storm events resulting from climate change are likely to increase coastal erosion, endangering the landscape in the coastal zone. Climate change also poses a threat to Scotland's landscape through the loss of habitats, alteration to the intricate ecological balances and increasing prevalence of pests and diseases in the natural environment.
- 10.3.3 The rapid spread of Chalara fraxinea (ash dieback) is resulting in losses of one of Scotland's most important climax tree species, which is having a significant impact on the landscape. Evidence from Europe suggests it will lead to the decline and death of 50%-75% of ash trees in Scotland over the next two decades and has the potential to infect more than 75 million ash trees (over 64 million saplings and seedlings and some 10.7 million mature trees) across the country ¹³¹.

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¹³¹ The Tree Council, Spring 2021 ASH DIEBACK: An Action Plan Toolkit for Scotland.



Appendix D. Scoping Report - Consultation Responses

Draft Environmental Report Appendix D



Appendix D: Scoping Report - Consultation Responses

1. Introduction

1.1.1 This appendix contains the consultation feedback on the draft SEA Scoping Report received from the SEA Consultation Authorities and other key stakeholders and summaries of the responses to this feedback in the Draft Environmental Report.



Table D1: SEA Scoping Report: Consultation Feedback

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
Historic Environment Scotland (HES)	20 February 2023	General	We note that the historic environment has been scoped into the assessment. On the basis of the information provided, we are content with this approach and are satisfied with the scope and level of detail proposed for the assessment. We would offer the following response in relation to the specific questions posed in the Scoping Report.	Positive response from HES noted.

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
HES	20 February 2023	Appendix E: Legislation Review	We welcome the review presented here and in particular the recognition of the role of the Historic Environment Policy for Scotland in decision-making. As a point of detail we consider that the focus on the reuse, adaptation and maintenance of our existing assets within the Scottish Government's Infrastructure Investment Plan is of relevance to the historic environment as much of our infrastructure such as stations, bridges and canals are also cultural assets. In relation to the Legislation Review we would note that the Historic Environment Scotland Act 2014 amended the key legislation covering the historic environment. The main pieces of legislation of relevance here are the • Ancient Monuments and Archaeological Areas Act 1979 • Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997	A legislation review was included in the Scoping Report but has not been duplicated for the Environmental Report. However, the references to the Historic Environment Policy for Scotland have been retained in Appendix B of the Environmental Report.

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
HES	20 February 2023	General and Appendix D: Environmental Baseline	We welcome the baseline information contained within report and Appendix D. This information adequately covers the historic environment resource of the area and the pressures and trends associated. As the report notes elsewhere, previous assessments (both SEA and EIA) have the potential to offer further detail on this baseline and the likely effects associated with options.	Noted.
HES	20 February 2023	Chapter 6.4 Topic-specific Methodology	The proposed methodology for the assessment is sound and we welcome the topic-specific methodology proposed for the historic environment.	Noted.
HES	20 February 2023	Chapter 5.3 Wider Engagement and Public Consultation	We understand from Figure 5.1 on page 35 of the Scoping Report that a consultation period of 6-8 weeks is proposed and we are content to agree with this timescale. Please note that, for administrative purposes, we consider that the consultation period commences on receipt of the relevant documents by the SEA Gateway.	The consultation period for the Environmental Report will be at least six weeks from the date it is issued to Scotland's SEA Gateway, as per the period shown in Figure 5.1.
NatureScot	20 February 2023	General	NatureScot is content with the scope and level of detail proposed for this Environmental Report.	Positive response from NatureScot noted.

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
NatureScot	20 February 2023	General	We note from your scoping report that you do not yet have the specific dates for the remaining SEA stages including the consultation period for the Environmental Report. We would advise that a minimum of at least 6 weeks period is provided to enable us to submit a meaningful response to your Environmental Report.	The consultation period for the Environmental Report will be at least six weeks from the date it is issued to Scotland's SEA Gateway, as per the period shown in Figure 5.1.

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NatureScot	20 February 2023	General	We welcome that all of the Strategic Environmental Assessment (SEA) topics have been scoped into the SEA. This reflects the wide range of possible impacts from this project as well as the opportunities for environmental improvement as reflected in your Transport Planning Objectives, and in particular TPO3 –	Noted. The opportunities listed have been considered in the Environmental
			A coherent strategic transport corridor that enhances communities, supporting health, wellbeing and the environment, and where it includes a sub-objective to protect or enhance the natural environment and heritage. We also welcome the Key Environmental Objectives which highlight further opportunities for enhancement and benefits. Key opportunities that we would highlight include:	Report. The relevant inter-relationships between the Climatic Factors and Biodiversity topic areas are also considered
			 protect and enhance the natural environment, wildlife, its habitats and other natural features, including internationally and nationally designated sites; 	in the Environmental Report.
			 restore ecosystems and ensure their future protection, reintroducing more resilient local biodiversity; 	
			 aim to secure positive effects for biodiversity, and support nature recovery, restoration and enhance green networks; 	

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
			 flood risk management and changing ecosystems must be factored into the future development to ensure nature-based adaptation and encourage green infrastructure. We also welcome your acknowledgement of the Interrelationships between the SEA topics Climatic Factors and Biodiversity in table and we would like to highlight the National Planning Framework 4 Policy 1 which prioritises the climate and nature crises. To reflect the NPF4 in this context, we recommend that relevant interrelationships between Climatic Factors and biodiversity are also considered as twin crises and is a common thread throughout the SEA and A96 Corridor Review. 	
NatureScot	20 February 2023	Chapter 4.7 Biodiversity	We note within this section, (and similarly within page 96, section D6/Biodiversity, Flora and Fauna) that other local designations such as Sites of Nature Conservation Interest (SNCIs) and Local Nature Conservations Sites (LNCSs) have not been referred to within the scoping report, and we advise that these sites along with the relevant local authority policies that help to provide their protection, are included in your Environmental Assessment.	The numbers of LNCs and SNCIs have now been added to the main Environmental Report and its associated Appendix C.

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
NatureScot	20 February 2023	Figure 6.2 Assessment Approach/ Methodology for selected SEA topics	There has not been enough detail provided within this section to demonstrate exactly how the SEA topics will be assessed against the SEA objectives. It would have been helpful to have included a table that consisted of each of the SEA topics and the relevant SEA objectives with a worked example of how these would be assessed and scored. We have, therefore, been unable to provide informed advice at this stage on your assessment methodology which could have helped with your Environmental Assessment. We refer you to the Scottish Government Strategic Environmental Assessment: Guidance which provides advice on the information we would expect to see for the different stages of the SEA process.	The Scottish Government's SEA Guidance has been closely followed for the SEA methodology. The SEA objectives have been cross- checked against the environmental assessment and narrative in the ASTs (see Environmental Report Appendix E – Assessment Matrices).

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
NatureScot	20 February 2023	Figure 6.2 Assessment Approach/ Methodology for selected SEA topics	We note that the assessment methodology for Biodiversity, Flora and Fauna states that a separate Habitats Regulations Appraisal (HRA) will be conducted to 'identify likely significant effects on European Designated sites and Ramsar wetlands' and this is echoed on page 95, Section D6, D6.1 Baseline (second paragraph). We understand that the aim of HRA is to conclude no adverse effects on site integrity (no AESI) on European sites and is a separate process to SEA, however, to establish potential likely significant effects on European sites (and Ramsar sites) as part of the SEA process we advise that the HRA is conducted at the same time to help inform the SEA of the European sites. For example, reasonable alternatives identified in the HRA could be included within the SEA for the A96 Corridor Review.	An HRA Screening Report has been prepared and its conclusions are summarised in the Environmental Report.
NatureScot	20 February 2023	Appendix D: Environmental Baseline D6.1; D9.1	With reference to your opening sentence regarding biodiversity as 'a common measure of the variety of living organisms and ecosystems and is often used to assess ecosystem health', we recommend including genetic diversity within this definition. This is particularly important when it comes to loss of habitat including trees for example, and the need for compensatory planting as a result of route improvements.	Additional text has been added to Environmental Report Appendix C (Environmental Baseline).

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
NatureScot	20 February 2023	General	It is unclear why the protected areas such as SSSIs and European Sites within this section have not been given the same level of attention within your scoping report as has been given to the individual Landscape Character Types (LCTs) and Local Landscape Areas (LLAs) within Section D9.1 for Landscape and Visual Amenity. To help inform your Environmental Assessment, we would advise that a similar approach is taken for gathering baseline information for protected areas.	Additional text on SSSIs has been added to the Biodiversity and Soils sections of the Environmental Report Appendix C (Environmental Baseline).
NatureScot	20 February 2023	Appendix D: Environmental Baseline D7.1 Baseline	We note that only larger SSSIs that occupy an area greater than 50ha have been listed within the scoping report. The Dipple Brae SSSI, for example, which is less than 50ha, has not been listed within the scoping report despite the study area cutting through the middle of this protected area. We advise that any protected area, including SSSIs of any size that are within the study area and/or where there may be likely significant environmental effects, are included in the SEA.	Additional text on SSSIs has been added to the Environmental Report Appendix C (Environmental Baseline).

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
NatureScot	20 February 2023	Appendix D: Environmental Baseline D9.1 Baseline	Along with landscape character, we recommend that a criterion of woodland character is added to general landscape descriptions within your baseline information for Landscape and Visual Amenity. This could take cognisance of, for example, woodland type (plantation, copse etc.) and species composition (non-native, riparian etc.). Since woodland is an important landscape characteristic and varies considerably along the Inverness-Aberdeen corridor, this will give a broader understanding of this aspect and aid the development of design principles and effective mitigation. We also advise that woodland character is reflected in your Table D9.1 for the inter-relationships with other SEA topics.	A section on woodland character has been added to the Environmental Report Appendix C (Environmental Baseline).
SEPA	20 February 2023	General	SEPA noted they are generally content with the scope and level of detail to be included in the Environmental Report (ER). Additional comments are set out below.	Positive response from SEPA noted.

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
SEPA	20 February 2023	Section 6.1.2	In relation to section 6.1.2 of the scoping report we highlight the need for the assessment to be carried out to all transport options that are reasonably being considered so that the environmental implications of each one is understood as preferred options are chosen (which does seem to be what was proposed at the meeting).	The assessment of the A96 Corridor Review Preliminary Options and Detailed Packages has been included in the Environmental Report Appendix E (Assessment Matrices).

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
SEPA	20 February 2023	General	When it comes to assessing impacts on and from flood risk then we take the opportunity to highlight that the publication of National Planning Framework 4 brings about the requirement to take into consideration climate change and we ask that you take that approach when assessment options and determining preferred approaches.	The assessment of the A96 Corridor Review Preliminary Options and Detailed Packages has been included in the Environmental Report Appendix E (Assessment Matrices). This includes consideration of climatic factors and flood risk.

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
SEPA	20 February 2023	General	When it comes to setting out the results of the assessment in the ER we recommend that you provide enough information to clearly justify the reasons for each of the assessments presented. It would also be helpful to set out assumptions that are made during the assessment and difficulties and limitations encountered.	Noted. The Environmental Report includes a narrative to explain the scoring of each transport intervention option that has been assessed.
SEPA	20 February 2023	General	Figure 5.1 is the only reference to the consultation period for the Environmental Report (ER) and it seems it may be a schematic rather than provide definitive information. Nonetheless we can confirm that a consultation period of six weeks or more would seem reasonable to us. For your information in this case we will not be providing a detailed assessment of the ER.	The consultation period for the Environmental Report will be at least six weeks from when it is issued to Scotland's SEA Gateway, as per the period shown in Figure 5.1.

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
Aberdeenshire Council	20 February 2023	Archaeology (Section 4.9, Appendix D8)	There doesn't appear to be any issues with the numbers noted against the designation types and undesignated assets under Cultural Heritage, nor the expected overall impacts on Cultural Heritage assets which essentially haven't varied from the previous SEA. As such I can confirm that Archaeology has no comment to make at this stage other than to confirm we're happy with the Scoping Report as it stands.	Positive response from Aberdeenshire Council noted.
Aberdeenshire Council	20 February 2023	Built Heritage (Section 4.9, Appendix D8)	The potential impact of the development on nationally designated historic assets identified in the Scoping Report aligns with that in the Strategic Environmental Assessment and the Built Heritage Team consequently do not have additional observations on the document.	Positive response from Aberdeenshire Council noted.
Aberdeenshire Council	20 February 2023	Natural Heritage (Section 4.7, Appendix D6)	Section 4.7 does not mention Aberdeenshire Council's identified Local Nature Conservation Sites. Further detail here: Aberdeenshire Council's identified Local Nature Conservation Sites and available from Nesbrec.	Additional text has been added in the Environmental Report and Environmental Report Appendix C (Environmental Baseline).

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
Aberdeenshire Council	20 February 2023	Landscape (Section 4.10, Appendix D9)	No comments other than the authors have standardised the title of local landscape designations in the area from Inverness to Aberdeen as Local Landscape Areas. For Aberdeenshire these are 'Special Landscape Areas'. It would be helpful for readers in the Aberdeenshire area if this was made clear.	This clarification has now been made in this section of Environmental Report Appendix C (Environmental Baseline).
Aberdeenshire Council	20 February 2023	Public Access (Section 4.4, Appendix D3)	Section 4 (and other potentially relevant places in the document subsequently) does not identify public access or public access assets such as core paths and Rights of Way.	Additional discussion of public access assets has been added to Appendix C of the Environmental Report.
Aberdeenshire Council	20 February 2023	Climate Change (Section 4.2, Appendix D1)	It mentions climate change mitigation and adaptation and links to Biodiversity which is positive. Any expansion should seriously consider and include more options for sustainable transport methods to encourage people out of their car and reduce the overall challenges with current levels of traffic.	Sustainable transport methods are being considered as part of the A96 Corridor Review and the SEA.

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
Scottish Forestry	21 February 2023	General	Our response is based on the requirements of the UK Forestry Standard (UKFS) and the Scottish Government's Control of Woodland Removal Policy (COWRP). This Policy is relevant to all woodland removal for the purposes of conversion to another land use and is intended to minimise and mitigate the effects. Our comments are designed to ensure that the impact of the route on forest and forestry interests is fully understood to attain the stated objectives of minimising impact and providing full compensation for lost woodland and a net gain for biodiversity. To achieve this, the full suite of woodland and derived sensitivities and benefits need to be recognised and quantified. As such Scottish Forestry would request that there is a standalone forestry assessment, and chapter included in the Environmental Impact Assessment Report (EIAR) in due course. It may be appropriate to consider some of the forestry and woodland related issues and public benefits under other subject themes however this may limit the full understanding and assessment of the likely significant impact. Where woodlands are considered and assessed under subject themes, they should be clearly referred to and summarised in the forestry assessment.	At this stage in the A96 Corridor Review, the transport intervention options are very high level and it is not possible to identify with any certainty direct impacts on specific parcels of woodland. However, a standalone forestry assessment will be considered for any transport intervention option taken forward as an outcome of the A96 Corridor Review.

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
Scottish Forestry	21 February 2023	Baseline	We would look to request that forestry interests should include all woodlands over 0.1 ha including any mixed habitats with dispersed trees, naturally regenerating and scrub areas as well as trees protected by Tree Preservation Orders and those considered veteran. The National Forest Inventory (NFI), the Ancient Woodland Inventory (AWI), the Native Woodland Survey of Scotland (NWSS) and Scottish Forestry's grants (woodland creation) and Scottish Forestry's grants (woodland creation) and felling permissions layers should be used to establish a suitable baseline for forestry interest. This is because areas where grants have been provided for afforestation may not yet be apparent on other datasets. These layers also include areas of afforestation or proposed afforestation due to be planted as an alternative area of restocking through the felling regulations. Felled areas should be considered woodland as they must legally be replanted.	These data layers are now all included on ProjectMapper (the interactive mapping tool being used for the SEA and wider Corridor Review). The forestry layers on ProjectMapper have also been used to inform a new section on woodland character that has been added to the Environmental Report Appendix C (Environmental Baseline).

Consultee	Date received	Scoping Report section	Consultation feedback (verbatim)	Jacobs AECOM SEA Response
Scottish Forestry	21 February 2023	Woodland types	To enable the assessment of woodland derived benefit lost to the development, we would request that the proposed area of woodland loss is shown by woodland type (as different woodland types have differing levels of value and therefore public benefits). To present this data we would recommend using the following categories: woodlands with a strong presumption against development in the COWRP; veteran, potential veteran or protected trees; commercial conifer; nonnative broad-leaved; mixed woodland; native woodland; assumed woodland (recently felled or due to be planted through grant schemes or compensatory planting).	These woodland types will be considered for any transport intervention option taken forward as an outcome of the A96 Corridor Review



Appendix E. Assessment Matrices

Appendix E: Assessment Matrices

1. Introduction

1.1 This appendix contains the environmental assessment of the following A96 Corridor Review Preliminary Appraisal and Detailed Appraisal Options.

Preliminary Appraisal:

- a) A96 Corridor Review Preliminary Option Active Communities
- b) A96 Corridor Review Preliminary Option Active Connections
- c) A96 Corridor Review Preliminary Option Improved Public Transport Passenger Interchange Facilities
- d) A96 Corridor Review Preliminary Option Bus Priority Measures and Park and Ride
- e) A96 Corridor Review Preliminary Option Investment in Demand Responsive Transport and Mobility as a Service (MaaS)
- f) A96 Corridor Review Preliminary Option Introduce Rail Freight Terminals
- g) A96 Corridor Review Preliminary Option Linespeed, Passenger and Freight Capacity Improvements on the Aberdeen to Inverness Railway Line
- h) A96 Corridor Review Preliminary Option Improved Parking Provision at Railway Stations
- i) A96 Corridor Review Preliminary Option Targeted Road Safety Improvements
- j) A96 Corridor Review Preliminary Option Elgin Bypass
- k) A96 Corridor Review Preliminary Option Keith Bypass
- l) A96 Corridor Review Preliminary Option Inverurie Bypass
- m) A96 Corridor Review Preliminary Option Forres Bypass
- n) A96 Corridor Review Preliminary Option Development of A96 Electric Corridor

Detailed Appraisal:

- a) A96 Full Dualling
- b) A96 Corridor Review Detailed Package 1
- c) A96 Corridor Review Detailed Package 2
- d) A96 Corridor Review Detailed Package 3
- e) A96 Corridor Review Detailed Package 4
- f) A96 Corridor Review Detailed Package 5
- g) A96 Corridor Review Detailed Refined Package

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2. Environmental Assessment of the A96 Corridor Review Preliminary Option – Active Communities

2.1 Climatic Factors

- 2.1.1 In the short term, greenhouse gas (GHG) emissions would occur due to construction activities undertaken to deliver active travel routes and placemaking improvements, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.
- 2.1.2 However, in the longer term, this option would help facilitate a modal shift from car to active modes for short journeys within key communities along the A96 and would thus lead to a modest reduction in GHG emissions.
- 2.1.3 It is estimated that those who switch one trip per day from car driving to cycling for 200 days per year, reduce their carbon footprint by approximately 0.5 tonnes over one year, representing a significant share of average per capita CO2 emissions.
- 2.1.4 This option has the potential to be vulnerable to climate risks during its use, e.g., inaccessible active travel network during extreme weather events, longer vegetation growing seasons leading to increased tree leaf coverage with an increased magnitude and frequency of storm events which could result in tree fall and increased maintenance requirements. Other impacts could include material deterioration due to high temperatures, leading to deterioration of surfaces such as softening, deformation and cracking, surface water flooding and damage to surfaces from periods of heavy rainfall. However, new infrastructure could be designed in such a way to minimise the potential effects of climate change, to reduce the vulnerability at that location.

2.2 Other SEA Topics: Water, Air Quality, Biodiversity, Cultural Heritage, Landscape and Visual Amenity, Material Assets, Soil and Population and Human Health

2.2.1 This option may result in positive impacts on communities and deliver health and wellbeing benefits (e.g. improved physical heath), as the option seeks to promote and facilitate a modal shift to sustainable and active travel with a focus on improved safety, connectivity and accessibility for all users. The proposal aims to reduce private car use which would have potential positive impacts in terms of reducing noise, air pollutants and GHG. This would help improve the local environment where this option is implemented in communities through which the A96 currently passes. Creating additional space for active travel would benefit communities, by reducing severance caused by the trunk road network, allowing areas of the settlement to reconnect, and increasing the sense of placemaking. This would be in accordance with TPOs 1-3. This would also allow greater connectivity to local services within the community.

- 2.2.2 However, there is the potential for minor to moderate negative environmental impacts during construction and operation, on natural resources, the water environment, biodiversity, landscape and visual amenity, agriculture and soils, and cultural heritage for example, depending on how these active travel routes and placemaking improvements are constructed and their precise location. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).
- 2.2.3 Further environmental assessment would be undertaken if such options are progressed through the design and development process, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate.
- 2.2.4 Design and construction environmental management plans would also be recommended, to consider how to protect and enhance the water environment and drainage, landscape and visual amenity, population and human health (including noise and air quality impacts on communities), biodiversity, and cultural heritage. It is also recommended that further cumulative impact assessment, environmental mitigation and enhancement measures proposed are embedded in any final options.

2.3 Cumulative Effects

2.3.1 This option is expected to have a minor positive impact on the Climate Change and Environment criteria under both With and Without Policy transport behaviour scenarios, although this would be subject to the specific effects of the actual interventions chosen.

3. Environmental Assessment of the A96 Corridor Review Preliminary Option – Active Connections

- 3.1.1 In the short term, GHG emissions would occur due to construction activities undertaken to deliver the active travel network, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.
- 3.1.2 However, in the long term, this option would help facilitate a modal shift from car to active modes, primarily for short and medium-length journeys, but also some longer journeys, therefore leading to a reduction in the number of car kilometres travelled and associated GHG emissions, thus contributing to the Scottish Government's objective to net zero emissions target.
- 3.1.3 It is estimated that those who switch one trip per day from car driving to cycling for 200 days per year, reduce their carbon footprint by approximately 0.5 tonnes over one year, representing a significant share of average per capita CO2 emissions.
- 3.1.4 This option has the potential to be vulnerable to climate risks during its use, e.g., inaccessible active travel network during extreme weather events, longer vegetation growing seasons leading to increased tree leaf coverage with an increased magnitude and frequency of storm events which could result in tree fall and increased maintenance requirements. Other impacts could include material deterioration due to high temperatures, leading to deterioration of surfaces such as softening, deformation and cracking, surface water flooding and damage to surfaces from periods of heavy rainfall. However, new infrastructure could be designed in such a way to minimise the potential effects of climate change, to reduce the vulnerability at that location.
- 3.2 Other SEA Topics: Water, Air Quality, Biodiversity, Cultural Heritage, Landscape and Visual Amenity, Material Assets, Soil and Population and Human Health
- 3.2.1 This option promotes a shift from the private car to more sustainable modes of travel (walking, wheeling, cycling) and therefore is likely to result in positive impacts in terms of reducing noise and GHG and air pollutants. The significance of this impact is not totally clear at this stage, as weather conditions and topography along some parts of the corridor may discourage a wholescale modal shift to active travel, even if the facilities were provided.
- 3.2.2 The option is likely to have a slight negative impact in terms of natural resources as the active travel network would need to be constructed and would need construction material as a result. The option is, however, likely to have a positive impact in terms of health and wellbeing by promoting activity and active lifestyles

and thus improving physical fitness. The option also provides the opportunity to connect populations through alternative transport networks by providing more active travel options and safer routes. This would also help to reduce noise and vibration in both more urban and rural locations. This would meet Transport Planning Objectives (TPOs) 1-3.

- 3.2.3 There is the potential for minor to moderate negative environmental impacts during construction and operation of this option on the water environment, biodiversity, agriculture and soils, cultural heritage and landscape and visual amenity. The extent of these impacts would depend on the routes chosen and the sensitivity of the local environment. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).
- 3.2.4 Further environmental assessment would be undertaken if such options are progressed through the design and development process, in order to identify potentially significant location-specific environmental impacts (and mitigation where appropriate) once the location of interventions is decided.
- 3.2.5 Design and construction environmental management plans would also be recommended, to consider how to protect and enhance the water environment and drainage, landscape and visual amenity, amenity (including noise and air quality), biodiversity, and cultural heritage. It is also recommended that further cumulative impact assessment, environmental mitigation and enhancement measures proposed are embedded in any final options.

3.3 Cumulative Effects

3.3.1 This option is expected to have a minor positive impact on the Climate Change and Environment criteria under the With and Without Policy scenarios, although this would be subject to the specific impacts of the route chosen. There is potential for further 'within scheme' cumulative effects on various environmental receptors, as well as 'in combination' effects with other projects and these will be determined through further assessment.

4. Environmental Assessment of the A96 Corridor Review Preliminary Option – Improved Public Transport Passenger Interchange Facilities

- 4.1.1 In the short-term, GHG emissions would occur due to construction activities undertaken to deliver the improvements to interchange facilities, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.
- 4.1.2 The level of contribution to reducing GHG emissions in the long term, and hence climate change, would depend on the nature and the location of the passenger facilities. While improved passenger facilities could result in some modal transfer from car, the overall environmental benefits are likely to be small unless this option is combined with other options.
- 4.1.3 The impact on the vulnerability of the transport network to the effects of climate change and the potential to adapt the network to the effects of climate change are expected to be neutral.
- 4.2 Other SEA Topics: Water, Air Quality, Biodiversity, Cultural Heritage, Landscape and Visual Amenity, Material Assets, Soil and Population and Human Health
- 4.2.1 This option has the potential to have positive impacts in terms of reducing noise, GHG and air pollutants as it could encourage a modal shift to more sustainable travel means. The option is seeking to improve the mobility of passengers and access for all to essential services with a focus on improved safety and reducing barriers for passengers with reduced mobility and creating an attractive public realm. The improvement of existing facilities and addition of new facilities such as retail could have wider community benefits through providing new local facilities and helping achieve a 20-minute neighborhood. This would be of particular relevance for smaller settlements with fewer existing facilities. It will have a positive impact on amenity, visual amenity and the public realm as it seeks to improve existing public transport interchanges.
- 4.2.2 New facilities and enhancements have the potential for negative environmental impacts during construction and operation in relation to various environmental receptors. This would be dependent on the nature and precise location of the proposals and the sensitivity of the receiving environment. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).

- 4.2.3 Further environmental assessment would be undertaken if such improvements to bus and rail infrastructure are progressed through the design and development process (once the location and type of new infrastructure and enhancements are identified), in order to identify potentially significant environmental impacts and mitigation where appropriate.
- 4.2.4 Design and construction environmental management plans would also be recommended, to consider how to protect and enhance the water environment and drainage, landscape and visual amenity, amenity (including noise and air quality), biodiversity, and cultural heritage. It is also recommended that further cumulative impact assessment, environmental mitigation and enhancement measures proposed are embedded in any final options.

4.3 Cumulative Effects

- 4.3.1 This option is likely to have a neutral impact on the Climate Change criterion in the With and Without Policy scenarios.
- 4.3.2 Overall, this option is likely to have a minor positive impact on the Environment criterion, under both the With and Without Policy scenarios but this would be subject to the extent of localised negative environmental impacts caused by the infrastructure enhancements and facilities.

5. Environmental Assessment of the A96 Corridor Review Preliminary Option – Bus Priority Measures and Park and Ride

- 5.1.1 In the short term, GHG emissions would occur due to construction activities undertaken to deliver the option, including indirect emissions from the manufacture and transportation of materials and emissions from fuel combusted by construction plant and vehicles.
- 5.1.2 However, evidence suggests that implementation of extensive bus lanes can reduce car use by up to 6%. Therefore, in the long term, bus priority measures have the potential to improve the flow of traffic and increase the attractiveness of buses as a mode of transport and could encourage a modal shift away from private car use. This may contribute to a decrease in associated GHG emissions during the operation of the proposed measures, thus contributing to the Scottish Government's net zero emissions target.
- 5.1.3 The extent of change in GHG emissions would depend on the fuel being used to power buses and cars on the routes that are impacted by the bus priority measures and Park and Ride scheme. Furthermore, the location and effectiveness of the new Park and Ride sites would also have an impact, as certain locations may lead to higher car use generated from people travelling to the site.
- 5.1.4 Bus priority measures would reduce pressures on operating costs, which could support greater levels of investment in new, lower emission vehicles.
- 5.1.5 This option has the potential to be vulnerable to climate risks during its use, e.g., inaccessible active travel network during extreme weather events, longer vegetation growing seasons leading to increased tree leaf coverage with an increased magnitude and frequency of storm events which could result in tree fall and increased maintenance requirements. Other impacts could include material deterioration due to high temperatures leading to deterioration of surface such as softening, deformation and cracking, surface water flooding and damage to surfaces from periods of heavy rainfall. However, new infrastructure could be designed in such a way to minimise the potential effects of climate change, to reduce the vulnerability at that location.
- 5.2 Other SEA Topics: Water, Air Quality, Biodiversity, Cultural Heritage, Landscape and Visual Amenity, Material Assets, Soil and Population and Human Health
- 5.2.1 This option has the potential to have positive impacts on communities by promoting a modal shift to public transport and reducing the number of vehicles on the corridor.

- 5.2.2 This option could provide a sustainable alternative for road users to access employment, and services which would have positive health and wellbeing impacts. The reduction in vehicles on the road could also result in a beneficial impact in terms of reducing noise, GHG and air pollutants; however, this would depend on the location and choice of the bus priority intervention measures.
- 5.2.3 The option would also have a positive impact on natural resources as it promotes a more sustainable use and management of the existing transport network. However, the construction of new Park and Ride facilities or new bus lanes/bus gates, for example, could potentially have a negative impact in this regard, as it would involve development of land.
- 5.2.4 There is also the potential for minor to moderate negative environmental impacts during construction and operation on various environmental receptors, depending on how the various bus priority intervention measures are constructed and their precise location. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).
- 5.2.5 Further environmental assessment would be undertaken if such measures are progressed through the design and development process, in order to identify potentially significant environmental impacts and mitigation where appropriate.
- 5.2.6 Design and construction environmental management plans would also be recommended, to consider how to protect and enhance the water environment and drainage, landscape and visual amenity, amenity (including noise and air quality), biodiversity, and cultural heritage. It is also recommended that further cumulative impact assessment, environmental mitigation and enhancement measures proposed are embedded in any final options.

5.3 Cumulative Effects

5.3.1 Overall, this option is expected to have a minor positive impact on the Climate Change and Environment criteria in both With and Without Policy scenarios. However, this would be subject to the degree of potential localised negative environmental impacts from any new measures implemented to achieve this option.

6. Environmental Assessment of the A96 Corridor Review Preliminary Option – Investment in Demand Responsive Transport (DRT) and Mobility as a Service (MaaS)

6.1 Climatic Factors

- 6.1.1 Improving connectivity where current bus services do not provide satisfactory cover and improved provision of information via a MaaS platform would increase the attractiveness of public transport and could result in transfer from the private car. However, the impact on GHG, and hence climate change, would depend on the fuel being used by the affected buses and cars.
- 6.1.2 The impact on the vulnerability to effects of climate change and the potential to adapt to effects of climate change are expected to be neutral.
- 6.2 Other SEA Topics: Water, Air Quality, Biodiversity, Cultural Heritage, Landscape and Visual Amenity, Material Assets, Soil and Population and Human Health
- 6.2.1 This option is likely to result in positive impacts on the community as well as reducing GHG and air pollutants, as it should encourage modal shift away from the private car to public transport even in the With Policy Scenario. It may also have positive impacts in terms of sustainable accessibility for communities, through providing greater connectivity for remote communities to healthcare and community facilities. It could also potentially open up connections to employment opportunities for communities.
- 6.2.2 The option is unlikely to have any significant impacts on noise and vibration, water environment, biodiversity, agriculture and soils, cultural heritage, landscape or visual amenity, as the option would not result in any physical alterations. Nevertheless, further environmental assessment would be undertaken if such investments in DRT and MaaS are progressed through the design and development process, in order to confirm potentially significant environmental impacts are negligible. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).

6.3 Cumulative Effects

6.3.1 Overall, this option is expected to have a minor positive impact on the Climate Change and Environment criteria in the With and Without Policy scenarios.

7. Environmental Assessment of the A96 Corridor Review Preliminary Option – Introduce Rail Freight Terminals

- 7.1.1 The creation of rail freight terminals could lead to a modal shift towards sustainable modes of freight transport, leading to a decrease of the number of Heavy Goods Vehicles (HGV)s movements along the A96 resulting in the decrease in GHG emissions. However, in the short term GHG emissions would arise from construction activities undertaken to deliver four terminals, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.
- 7.1.2 At this preliminary stage in the appraisal process, it is considered that although there could be a reduction in GHG emissions this would potentially be outweighed by emission from constructing new rail freight terminals. Overall, this option is expected to have a neutral impact on this criterion in both the With and Without Policy scenarios. The extent of this effect would only be known through the detailed design development process.
- 7.1.3 Further environmental assessment would be undertaken if such improvements to rail infrastructure are progressed through the design and development process (once the location and type of new infrastructure are identified).
- 7.1.4 This option is unlikely to have any notable impact on the vulnerability to effects of climate change and the potential to adapt to effects of climate change. However, the existing railway may be vulnerable to the effects of climate change. The increased frequency and severity of extreme weather events can cause damage to equipment due to storm events, extreme heat, or intense rainfall.
- 7.2 Other SEA Topics: Water, Air Quality, Biodiversity, Cultural Heritage, Landscape and Visual Amenity, Material Assets, Soil and Population and Human Health
- 7.2.1 The creation of rail freight terminals is likely to result in positive impacts on reducing GHG and air pollution as it could lead to a modal shift towards sustainable modes of transport for freight. The number of HGV movements along the A96 is therefore likely to decrease, leading to a positive impact in terms of noise reduction and a slight improvement in air quality in localised areas, particularly where the A96 passes through settlements. This would have some positive impacts on amenity and placemaking by reducing some of the HGV trips through settlements. Noise and vibration may increase along the rail line as a consequence of greater freight movements which might have a minor negative impact.

- 7.2.2 The option is likely to have a slight to moderate negative impact in terms of material assets through the construction processes of the new freight terminals.
- 7.2.3 New rail freight terminals have the potential for negative environmental impacts during construction and operation in relation to various environmental receptors. This would be dependent on the nature and precise location of the terminals in relation to the existing railway line (and whether any new sections of track are required) and the sensitivity of the receiving environment. For example, there are designated Sites of Special Scientific Interest and Heritage Conservation Areas in the vicinity of Keith and Elgin. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).
- 7.2.4 Further environmental assessment would be undertaken if such improvements to rail infrastructure are progressed through the design and development process (once the location and type of new infrastructure are identified), in order to identify potentially significant environmental impacts and mitigation where appropriate.
- 7.2.5 Design and construction environmental management plans would also be recommended, to consider how to protect and enhance the water environment and drainage, landscape and visual amenity, amenity (including noise and air quality), biodiversity, and cultural heritage. It is also recommended that further cumulative impact assessment, environmental mitigation and enhancement measures proposed are embedded in any final options.

7.3 Cumulative Effects

- 7.3.1 It is considered that although there could be a reduction in GHG emissions this would potentially be outweighed by emissions from constructing new rail freight terminals. Overall, this option is expected to have a neutral impact on the Climate Change criterion under both the With and Without Policy scenarios.
- 7.3.2 Overall, at this preliminary stage in the appraisal process, the potential environmental impacts of constructing rail freight terminals within and potentially beyond the corridor are considered to be minor negative under the With and Without Policy scenarios, although this would be subject to final site selection and associated design. This is on the basis that although there are positive environmental impacts associated with this option, these would potentially be outweighed by large-scale impacts from constructing new rail freight terminals. The extent of impact would only be known through the design development process. If environmental constraints can be avoided, then negative environmental impacts can be reduced.

8. Environmental Assessment of the A96 Corridor Review Preliminary Option – Linespeed, Passenger and Freight Capacity Improvements on the Aberdeen to Inverness Railway Line

- 8.1.1 GHG emissions could be generated in the short term from construction activities undertaken to deliver the infrastructure, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles. The extent of effect would be established through the detailed design development process.
- 8.1.2 The provision of enhanced frequency rail services, together with a significant reduction in end-to-end journey time, would increase the attractiveness of rail as a mode of transport for passenger journeys between Aberdeen and Inverness and could help generate modal transfer from car to rail. This option also seeks to improve the use of sustainable modes of transport through modal shift of freight from road to rail, reducing the number of freight vehicles (associated congestion) and emissions from freight deliveries. This would result in a reduction of GHG emissions in the long term. The extent of reduction in GHG emissions would be dependent on how much of a modal shift there is from private vehicles to train travel, and from HGV movements to rail freight.
- 8.1.3 The option has the potential to be vulnerable to the effects of climate change impacting the existing railway, for example damage to railway and drainage systems from periods of heavy rainfall with the potential for increased runoff from adjacent land. However, new infrastructure would be designed in such a way to adapt to the potential effects of climate change, to reduce the vulnerability.
- 8.1.4 Further environmental assessment would be undertaken if this option is progressed through the design and development process.
- 8.2 Other SEA Topics: Water, Air Quality, Biodiversity, Cultural Heritage, Landscape and Visual Amenity, Material Assets, Soil and Population and Human Health
- 8.2.1 This option is likely to result in positive effects in terms of reducing GHG and air pollution as it could lead to a modal shift towards sustainable modes of transport for passengers and freight. The number of longer distance HGV movements on the corridor is therefore likely to decrease, leading to a positive effect in terms of noise reduction and a slight improvement in air quality in localised areas, particularly where the A96 is located within settlements. This would have some positive effects on amenity and placemaking by reducing some of the HGV trips through settlements. Noise and vibration may increase along the rail line as a consequence

of greater freight movements which might have a minor negative effect. Furthermore, there may be localised increases in noise levels and slightly reduced air quality around the freight terminals as the number of short distance HGV trips may increase. In terms of passenger movements, the decrease in travel time on the railway may be more attractive as a mode of travel for individuals travelling to work or reaching the larger settlements, creating benefit for the general population.

- 8.2.2 The option is likely to have a moderate negative effect in terms of natural resource requirements due to the construction of new freight facilities and dualling of the tracks in certain locations.
- 8.2.3 A new freight terminal and dualling of the existing tracks has the potential for negative environmental effects during construction and operation in relation to biodiversity, natural resources, cultural heritage, and landscape and visual amenity, for example. The locations chosen are likely to result in a low environmental impact given the locations are adjacent to existing or historic rail facilities and have no significant environmental designations. The extent of the impact would be dependent on the scope of works and precise location of the terminal and dualling. There are some trees in and around the Huntly and Keith railway stations which may be affected.
- 8.2.4 Overall, at this preliminary stage in the appraisal process, the potential environmental effects of constructing a rail freight terminal and dualling of the track within the corridor is expected to be minor negative, although this would be subject to final site selection and associated design. This is on the basis that although there are positive environmental effects associated with this option, these would potentially be outweighed by effects from constructing a new rail freight terminal and the dualling of the tracks. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).
- 8.2.5 Mitigation measures may be possible to offset the negative impacts through, for example, tree planting, however the extent of impacts and efficacy of mitigation would only be known through the detailed design development process. If environmental constraints, such as designated sites, can be avoided, then negative environmental effects can be reduced.

8.3 Cumulative Effects

- 8.3.1 Overall, at this preliminary stage in the appraisal process, the potential climate change impacts of the option are considered to be minor positive under both the With and Without Policy scenarios.
- 8.3.2 Overall, this option is likely to have a minor negative impact against the Environment criterion under both the With and Without Policy scenarios.

9. Environmental Assessment of the A96 Corridor Review Preliminary Option – Improved Parking Provision at Railway Stations

- 9.1.1 GHG emissions could be generated in the short term due to construction activities undertaken to deliver the infrastructure, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plants and vehicles. In the long term, increasing the parking at the railway stations would increase the attractiveness of public transport and potentially attract new users transferring from private vehicles. This would lead to a modal shift towards sustainable modes of transportation for some passengers and a reduction in vehicles using the A96, resulting in a reduction of GHG emissions.
- 9.1.2 It is, however, important to consider the way in which rail is accessed and what type of trips are most usefully targeted for modal shift to rail. Notwithstanding that the railway stations along the corridor serve large rural hinterlands, the settlements themselves are relatively compact. This means that the railway stations are well within active travel access distances for the settlement populations. Increasing car parking provision could result in a net increase in short distance car trips, which would have a negative impact on GHG emissions and air quality within settlements in the vicinity of the railway stations. These effects could, however, be reduced by providing sufficient electric vehicle (EV)/ultra-low emission vehicle (ULEV) parking facilities, which could see more electric vehicles being used to travel to the station.
- 9.1.3 The impact on the vulnerability to the effects of climate change and the potential to adapt to the effects of climate change are expected to be neutral.
- 9.2 Other SEA Topics: Water, Air Quality, Biodiversity, Cultural Heritage, Landscape and Visual Amenity, Material Assets, Soil and Population and Human Health
- 9.2.1 This option could result in positive impacts in terms of air quality as it could lead to a modal shift towards greater use of the railway by those who would currently use private vehicles. In particular, it could increase the opportunity for those in rural areas who have limited access to public transport to access the railway stations, to use the railway as there would be more parking opportunities. A reduction in vehicles on the A96 would have a positive impact in terms of noise reduction and a slight improvement in air quality in localised areas, particularly where the A96 is located within settlements. This would have some positive impacts on amenity and placemaking by reducing some of the vehicle trips through settlements on the A96.

- 9.2.2 The option is likely to have a slight negative impact in terms of natural resource requirements, through the construction of new car parking areas. In terms of the locations chosen, it is noted that there are no significant environmental designations which would be affected by this option. The sites chosen are largely urban in location and include no specific environmental protection. There are trees in the vicinity of the Inverurie, Elgin and Forres sites and trees within the Huntly site, however, these do not have any environmental designation and are not formally protected. The loss of any trees, particularly those within the Huntly site, is likely to have a minor negative impact in terms of biodiversity and landscape, and ecological assessment would be required as to their habitat value for bats and breeding birds for example.
- 9.2.3 There are likely to be minor negative environmental impacts from the construction process in terms of natural resource requirements and potential tree loss, and the option is likely to see an increase in traffic to the rail stations leading to localised noise and air quality impacts. The option however would have positive environmental impacts through increasing opportunity for train travel, particularly for those in the rural areas that have little option but to drive to public transport locations. This could have positive impacts by reducing the number of vehicles on the A96 and reducing associated noise and air quality impacts. Taken together, this is likely to offset the negative impacts of the option. The extent of impact would only be known through the detailed design development process. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views). If environmental constraints such as designated sites can be avoided, then negative environmental impacts can be reduced. Similar positive benefits could, however, be achieved through the provision of active communities or active connections, which could increase the opportunity to access the rail network via sustainable means.

9.3 Cumulative Effects

- 9.3.1 Overall, this option is expected to have a neutral impact on the Climate Change criterion under the With Policy Scenario and minor negative impact under the Without Policy Scenario.
- 9.3.2 Overall, at this preliminary stage in the appraisal process, the environmental impacts of constructing additional car parking spaces is expected to be neutral under the Environment criterion in both the With and Without Policy scenarios.

10. Environmental Assessment of the A96 Corridor Review Preliminary Option – Targeted Road Safety Improvements

- 10.1.1 Any new infrastructure would be designed to minimise the potential effects of climate change, to reduce the vulnerability at that location to impacts of climate change such as material deterioration due to high temperatures leading to deterioration of surface such as softening, deformation and cracking, surface water flooding and damage from periods of heavy rainfall.
- 10.1.2 In the short term, GHG emissions would occur due to construction activities undertaken to deliver the various safety improvements associated with this option, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.
- 10.1.3 Targeted road safety improvements are not expected to materially influence overall travel demand and trips along the A96 corridor unless capacity improvements were to be delivered, although this is not envisaged at a significant enough scale to make an impact at this stage.
- 10.1.4 The level of contribution to reducing GHG emissions in the long term, would depend on the nature and the location of the improvements.
- 10.2 Other SEA Topics: Water, Air Quality, Biodiversity, Cultural Heritage, Landscape and Visual Amenity, Material Assets, Soil and Population and Human Health
- 10.2.1 Targeted road safety improvements would likely result in minor positive impacts on the safety of the trunk road network. This could improve connectivity and resilience on the network, assisting with the ability of remote communities to connect with facilities, key services, healthcare and employment. The trunk road network is important to the operation of bus services both in connecting settlements to the cities of Inverness and Aberdeen, and in connecting the rural environs to the urban settlements. Safety improvements through targeted improvements/upgrades are likely to reduce disruption from accidents and reduce congestion, supporting enhanced access for all road users.
- 10.2.2 The improvements may increase the overall use of private vehicles through reducing congestion and making car travel more attractive. As a result, the option may result in an increase in traffic which could have a minor negative impact, for example in terms of a slight deterioration in air quality and an increase in noise. This would have a minor negative environmental impact.

- 10.2.3 This option could have negative impacts in terms of the natural resources required for the construction process. Depending on the scale of the option(s), the materials chosen and their source, there is the potential for a negative effect.
- 10.2.4 The targeted road safety improvements have the potential for negative environmental impacts, with some of these being potentially significant, on various environmental receptors. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views). The A96 corridor and its surroundings, contain various regional, national, and international designated sites, including for example Special Areas of Conservation (SAC), Special Protection Areas (SPAs), Ramsar wetland sites of international importance, Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs), and Nature Reserves. The area also contains various Gardens and Designed Landscapes, Scheduled Monuments, Listed Buildings, Conservation Areas and undesignated heritage sites, for example. There are also large swathes of Long-Established Woodland (of plantation origin), pockets of Ancient Woodland (of semi-natural origin) and areas with Tree Preservation Orders. The Local Development Plans also contain settlement development limits, which in turn contain areas zoned for various forms of development. A number of areas within the corridor are also susceptible to flooding.
- 10.2.5 The construction footprint of the potential improvements, such as Partial Dualling, Wide Single 2+1 carriageways and climbing lanes is currently unknown, hence there is uncertainty over the environmental impacts. The scale of the impacts would be dependent on further design development and the location of the targeted road safety improvements being determined and therefore at this stage, the extent of impacts is uncertain.
- 10.2.6 Further environmental assessment would be undertaken if targeted road safety improvements are progressed through the design and development process, in order to assess the location and scale of specific environmental impacts as well as to identify appropriate mitigation where required.
- 10.2.7 Design and construction environmental management plans would also be recommended, to consider how to protect and enhance the water environment and drainage, landscape and visual amenity, amenity (including noise and air quality), biodiversity, and cultural heritage. It is also recommended that further cumulative impact assessment, environmental mitigation and enhancement measures proposed are embedded in any final options.

10.3 Cumulative Effects

10.3.1 Overall, this option is expected to have a minor positive impact on the Climate Change criterion under the With Policy Scenario and neutral impact under the Without Policy Scenario.

10.3.2 Overall, at this preliminary stage in the appraisal process, the potential environmental impacts of a suite of targeted road safety improvements are considered moderate negative in both the With and Without Policy scenarios, although this would be subject to the location and design of such improvements. If the environmental constraints can be avoided, then negative environmental impacts can be reduced.

11. Environmental Assessment of the A96 Corridor Review Preliminary Option – Elgin Bypass

- 11.1.1 The A96 trunk road network could be considered vulnerable to the effects of climate change, particularly in areas at high risk of flooding or in locations where current or future ground stability issues are known or anticipated. Impacts also could include material deterioration due to high temperatures leading to deterioration of surface such as softening, deformation and cracking, surface water flooding and damage to surfaces from periods of heavy rainfall. A bypass is likely to suffer the same vulnerabilities, however new infrastructure would be designed in such a way to minimise the potential effects of climate change, to reduce the vulnerability at that location. Furthermore, a bypass should enhance the resilience of the A96, adapting against the effects of climate change.
- 11.1.2 In the short term, GHG emissions would occur due to construction activities undertaken to deliver a bypass, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.
- 11.1.3 A bypass will provide additional road space, which is likely to increase capacity for motorised vehicles and incentivise a greater level of travel therefore inducing travel demand, particularly under the High transport behaviour scenarios, where congestion within Elgin is likely to be experienced more intensely and for longer periods compared to the Low transport behaviour scenario, where congestion could be reduced. Expected policy impacts under the With Policy Scenario, such as a reduction in car km travelled, could reduce the GHG emissions arising from the bypass users. Therefore, the provision of additional road space has the potential to have a minor negative impact under the Without Policy Scenario and neutral impact under the With Policy Scenario (with fewer vehicles) on transport-based emissions.
- 11.1.4 Analysis of Automatic Number Plate Recognition (ANPR) data collected in 2017 indicates that approximately 20% of traffic travelling on the A96 east or west of Elgin is through traffic. Depending on the route of the bypass and the location of any intermediate junctions, additional traffic may use sections of the bypass to access developments to the north or south of Elgin, further reducing the volume of traffic using the A96 within Elgin. Removing this traffic through the provision of a bypass is therefore likely to contribute to the Scottish Government's net zero emissions target through the reduction of stationary traffic, whilst also improving the attractiveness of sustainable modes of travel, particularly for shorter, everyday journeys through reducing the traffic flow on the existing A96, including a reduction in the number of HGVs travelling through the town.

- 11.1.5 The provision of complementary measures, which do not form part of this option, in conjunction with a bypass, would likely encourage a shift from car-based travel to sustainable modes, particularly for shorter everyday journeys. This is likely to be achieved through creating environments more attractive for walking, wheeling, and cycling, or by improving the reliability and attractiveness of public transport services, therefore positively contributing to this objective under both the With and Without Policy scenarios.
- 11.2 Other SEA Topics: Water, Air Quality, Biodiversity, Cultural Heritage, Landscape and Visual Amenity, Material Assets, Soil and Population and Human Health
- 11.2.1 A bypass of Elgin would be likely to result in minor positive impacts on communities and the safety of the local road network and along the A96 by separating a significant proportion of the through traffic from local traffic. This would deliver health and wellbeing benefits to individuals by providing a safer environment to travel. Elgin is the main settlement between Hardmuir and Fochabers and is the largest settlement on the A96 outside the two cities in terms of population. A bypass of Elgin would reduce the volume of traffic travelling through the settlement and thus assist with placemaking by reducing the real and perceived severance with the A96 currently travelling through the centre of the settlement. The re-distribution of a significant proportion of the through-traffic to a bypass could produce opportunities to re-orientate the road network and traffic hierarchy around the centre of Elgin, re-connecting communities that may currently feel separated by the existing A96. The existing road currently presents a barrier to active travel routes between communities. A bypass would also help reduce noise and air pollution within Elgin itself, if overall traffic volumes through the settlement were reduced, however the extent would depend on the proportion of traffic that transfers onto the bypass.
- 11.2.2 The trunk road network is important to the operation of bus services, both in connecting smaller settlements to the cities of Inverness and Aberdeen, and in connecting the rural environs to the urban settlements. Safety improvements delivered by a bypass may reduce disruption from accidents and reduce congestion, supporting enhanced access for all road users. This could enhance opportunities for rural and local communities to access key services, employment opportunities and health care for example.
- 11.2.3 A bypass may also increase the overall use of private vehicles through reducing congestion and making car travel more attractive. There may be a slight deterioration in air quality as a result of any traffic increase, however the bypass has the potential to improve air quality along the existing A96 within Elgin through reducing traffic volumes, congestion and stationary vehicles within the town.

- 11.2.4 In terms of natural resources, significant quantities of materials and construction-related trips would be required for the construction of a bypass. Depending on the material chosen and its source, there is the potential for a negative impact.
- 11.2.5 A bypass has the potential for negative environmental impacts, with some of these being potentially significant, on the water environment, biodiversity, agriculture and soils, cultural heritage, landscape and visual amenity, for example. There are regionally and nationally important natural and historical designations to the west and north of Elgin, including Sites of Special Scientific Interest (SSSI) and Geological Conservation Review Sites, and there are large areas of woodland to the south, west and north, many of which are on the Ancient Woodland Inventory. There are large areas of flood risk all around the settlement which would be a constraint on the route of a bypass. The scale of the impacts would be dependent on further design development and the alignment of the bypass being determined and therefore at this stage, the extent of impacts is uncertain. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).
- 11.2.6 In terms of land use, the Moray Local Development Plan has quite extensive settlement expansion shown, particularly on the northern and southern fringes of Elgin. This includes residential, education, employment, and open space land use designations. The alignment of a bypass would need to consider this, as the route could constrain or have a negative impact on future development. Some of these allocations already have planning permission and have started to be constructed.
- 11.2.7 Further environmental assessment would be undertaken if a bypass is progressed through the design and development process in order to assess the location and scale of specific environmental impacts as well as to identify appropriate mitigation where required. Design and construction environmental management plans would also be recommended, to consider how to protect and enhance landscape, the water environment, amenity, noise levels, air quality, biodiversity, and cultural heritage. It is also recommended that further cumulative impact assessment, environmental mitigation and enhancement measures proposed are embedded in any final options.

11.3 Cumulative Effects

- 11.3.1 The provision of a bypass could enhance resilience of the A96 to the effects of climate change, however, given the potential for GHG emissions to arise during construction and the bypass to induce travel demand, the option is expected to have a minor negative impact on climate change under the Without Policy Scenario and neutral impact under the With Policy Scenario.
- 11.3.2 Overall, at this preliminary stage in the appraisal process, the potential environmental impacts of a bypass of Elgin are considered moderate negative under both the With and Without Policy scenarios, although this would be subject

to the location and design of the bypass. If the environmental constraints are avoided, then negative environmental impacts could be reduced.

12. Environmental Assessment of the A96 Corridor Review Preliminary Option – Keith Bypass

- 12.1.1 The A96 trunk road network could be considered vulnerable to the effects of climate change, particularly in areas at high risk of flooding or locations where current or future ground stability issues are known or anticipated. Impacts also could include material deterioration due to high temperatures leading to deterioration of surface such as softening, deformation and cracking, surface water flooding and damage to surfaces from periods of heavy rainfall. A bypass is likely to suffer the same vulnerabilities, however new infrastructure would be designed in such a way to minimise the potential effects of climate change, to reduce the vulnerability at that location. Furthermore, a bypass should enhance the resilience of the A96, adapting against the effects of climate change.
- 12.1.2 In the short term, GHG emissions would occur due to construction activities undertaken to deliver the bypass, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.
- 12.1.3 Traffic data from the A96 Corridor Route Assignment Model (CRAM) indicates that between 60% and 70% of eastbound traffic, and between 65% and 75% of westbound traffic travelling on the A96 at Keith is through traffic (depending on the peak period), with up to 91% of HGV traffic along the A96 passing through the town. The provision of a bypass could potentially reduce slow moving or stationary traffic whilst also improving the attractiveness of sustainable modes of travel particularly for shorter distance journeys.
- 12.1.4 However, a bypass will provide additional road space, which is likely to increase capacity for motorised vehicles and incentivise the level of travel inducing travel demand. Whilst congestion is not currently a significant issue within Keith, if it were to become an issue in the future, it would be under the 'Without Policy' Scenario rather than the 'With Policy' Scenario. The provision of a bypass would provide an alternative route to avoid any congestion within the town, which could result in more road-based trips, therefore increasing transport-based. Expected policy impacts under the With Policy Scenario, such as a reduction in car km travelled, could reduce the GHG emissions arising from the bypass users. Therefore, the provision of additional road space has the potential to have a negative impact under the High motorised demand scenario and neutral impact under the Low motorised demand scenario on transport-based emissions.
- 12.1.5 Through traffic, and particularly HGVs, can increase perceived safety concerns which can be a barrier to active modes. Removing this traffic through the provision

- of a bypass is therefore likely to contribute to the Scottish Government's net zero emissions target through the reduction of slow moving or stationary traffic, whilst also improving the attractiveness of sustainable modes of travel particularly for shorter distance journeys. The provision of a bypass would also reduce the number of commercial goods vehicles, including HGVs, travelling through the town.
- 12.1.6 The provision of complementary measures, which do not form part of this option, in conjunction with a bypass could enhance the benefits for climate. For example, creating environments that are more attractive for walking, wheeling, and cycling, and increasing the priority for public transport services, would result in a positive contribution to the climate SEA objectives under both the With and Without Policy scenarios.
- 12.2 Other SEA Topics: Water, Air Quality, Biodiversity, Cultural Heritage, Landscape and Visual Amenity, Material Assets, Soil and Population and Human Health
- 12.2.1 A bypass of Keith would likely result in minor positive impacts on communities due to improved safety on the local network and on the trunk road network along the A96 by separating a significant proportion of through traffic from local traffic to deliver health and wellbeing benefits to individuals by providing a safer environment to travel. The existing A96 through Keith carries a large volume of through traffic, which includes HGVs, due to the strategic nature of the route. The existing A96 also interacts with numerous local roads via at-grade junctions. A bypass of Keith could help to reduce the volume of traffic travelling through the settlement and thus assist with placemaking by reducing real and perceived severance and improve the sense of place. The re-distribution of a significant proportion of through traffic to a bypass could produce opportunities to reorientate the road network and traffic hierarchy along the existing road through Keith, re-connecting communities that may currently feel separated or experience severance due to the trunk road. A bypass would also help reduce noise and air pollution within Keith itself, if overall traffic volumes through the settlement were reduced, however the extent would depend on how much traffic transferred to the bypass.
- 12.2.2 The trunk road network is important to the operation of bus services, both in connecting smaller settlements to the cities of Inverness and Aberdeen, and in connecting the rural environs to the urban settlements. Safety improvements delivered by a bypass may reduce disruption from accidents and reduce congestion, supporting enhanced access for all road users. This could enhance opportunities for rural and local communities to access key services, employment opportunities and health care for example, which would support TPO3.
- 12.2.3 A bypass may also increase the overall use of private vehicles through reducing congestion and making car travel more attractive. Issues in terms of a possible slight deterioration in air quality may increase as a result of any traffic increase,

however the proposal has the potential to improve air quality along the existing A96 within Keith through reducing traffic volumes, congestion and stationary vehicles within the town.

- 12.2.4 In terms of natural resources, significant quantities of materials and construction-related trips would be required for the construction of a bypass. Depending on the material chosen and its source, there is the potential for a negative impact. The A96 currently passes through a Conservation Area and there are a number of Listed Buildings within Keith. The bypass could be of some slight benefit to these cultural heritage receptors as traffic volumes would reduce with a bypass.
- 12.2.5 A bypass has the potential for negative environmental impacts, with some of these being potentially significant, on the water environment, biodiversity, agriculture and soils, cultural heritage, and landscape and visual amenity. The Mill Wood SSSI to the east of Keith, areas of peatland to the north and large swathes of woodland to the south, many of which are regarded as being Ancient or Long-Established. There are numerous heritage assets in the vicinity of Keith which could be affected. There are areas of significant flood risk associated with the River Isla to the north of Keith and some flood risk to the west and south-west to a lesser extent. This is likely to be a key consideration in delivering a bypass in these areas. The scale of the impacts would be dependent on further design development and the alignment of the bypass being determined and therefore at this stage, the extent of impacts is uncertain. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).
- 12.2.6 In terms of land use, the Moray Local Development Plan shows some settlement expansion to the east of Keith. The alignment of a bypass would need to take this into consideration, as the route could constrain or have a negative impact on future development. There are large areas of protected greenspace to the west and south of Keith including an area with a Tree Preservation Order (adjacent to the A96/A95 road junction) which could be a potential constraint on the alignment of a bypass.
- 12.2.7 Further environmental assessment would be undertaken if a bypass is progressed through the design and development process, in order to assess the location and scale of specific environmental impacts as well as to identify appropriate mitigation where required.
- 12.2.8 Design and construction environmental management plans would also be recommended, to consider how to protect and enhance the water environment and drainage, landscape and visual amenity, amenity (including noise and air quality), biodiversity, and cultural heritage. It is also recommended that further cumulative impact assessment, environmental mitigation and enhancement measures proposed are embedded in any final options.

12.3 Cumulative Effects

- 12.3.1 The provision of the bypass could enhance resilience of the A96 to the effects of climate change, however, given the potential for emissions to be generated during the construction phase and the bypass to induce travel demand, a bypass of Keith is expected to have a minor negative impact on climate change under the Without Policy Scenario and neutral impact under the With Policy Scenario.
- 12.3.2 Overall, at this preliminary stage in the appraisal process, the potential environmental impacts of a bypass at Keith are considered moderate negative under both the With and Without Policy scenarios, although this would be subject to the location and design of the bypass. If the environmental constraints are avoided, then negative environmental impacts can be reduced.

13. Environmental Assessment of the A96 Corridor Review Preliminary Option – Inverurie Bypass

- 13.1.1 The A96 trunk road network could be considered vulnerable to the effects of climate change, particularly in areas at high risk of flooding or in locations where current or future ground stability issues are known or anticipated. Impacts also could include material deterioration due to high temperatures leading to a deterioration in surfaces such as softening, deformation and cracking, surface water flooding and damage to surfaces from periods of heavy rainfall. A bypass of Inverurie is likely to face the same vulnerabilities, however new infrastructure would be designed to minimise the potential effects of climate change, to reduce the vulnerability at that location. Furthermore, a bypass should enhance the resilience of the A96, adapting against the effects of climate change.
- 13.1.2 GHG emissions would be generated from construction activities undertaken to deliver the bypass, including indirect emissions from the manufacture and transportation of materials, and emissions from the fuel combusted by construction plant and vehicles for example.
- 13.1.3 Traffic data from the A96 CRAM indicates that between 70% and 80% of eastbound traffic travelling on the A96 at Inverurie is through traffic, however this reduces to between 20% and 35% westbound, depending on the peak period. Similarly, eastbound between 85% and 95% of HGVs are passing through Inverurie, reducing to between 20% and 50% westbound, depending on the peak period. Removing this traffic through the provision of a bypass could potentially reduce slow moving or stationary traffic within Inverurie whilst also improving the attractiveness of sustainable modes of travel particularly for shorter distance journeys. The provision of a bypass would also reduce the number of commercial goods vehicles, including Medium Goods Vehicles (MGVs) and HGVs travelling through the town.
- 13.1.4 Depending on the route the bypass and the location of any intermediate junctions, traffic flows through Inverurie could reduce. This could reduce traffic flows through Inverurie. In turn, the provision of complementary measures within the town of Inverurie in conjunction with a bypass in the vicinity of the town would likely enhance the opportunity to facilitate a shift from car-based travel to sustainable modes, through the creation of a more attractive environment for walking, wheeling, and cycling. Furthermore, the provision of complementary measures within the town, which do not form part of this option, could improve the reliability and attractiveness of bus services for longer-distance services travelling on the bypass and local services travelling on the A96 and local road network, positively contributing to this objective under both the With and Without Policy scenarios.

- 13.1.5 However, a bypass provides additional road space, which is likely to increase capacity for motorised vehicles and incentivise a greater level of travel and potentially induce travel demand. Congestion within Inverurie is likely to be experienced more intensely and for longer periods in the Without Policy Scenario compared to the With Policy Scenario, where congestion could be minimal. Expected policy impacts under the With Policy Scenario, such as a reduction in car km travelled, could reduce the GHG emissions arising from the bypass users. Therefore, the provision of additional road space has the potential to have a minor negative impact under the Without Policy Scenario and neutral impact under the With Policy Scenario on transport-based emissions.
- 13.1.6 The provision of complementary measures, which do not form part of this option, in conjunction with a bypass could enhance the benefits for climate. For example, creating environments that are more attractive for walking, wheeling, and cycling, and increasing the priority for public transport services, would result in a positive contribution to the climate SEA objectives under both the With and Without Policy scenarios.
- 13.2 Other SEA Topics: Water, Air Quality, Biodiversity, Cultural Heritage, Landscape and Visual Amenity, Material Assets, Soil and Population and Human Health
- 13.2.1 A bypass of Inverurie would be likely to result in some minor positive impacts on communities, including health and wellbeing benefits. While the A96 is aligned on the southwestern periphery of the settlement at present and has a 60mph speed limit, there has been settlement expansion of Inverurie over the last two decades which has seen residential properties and businesses being separated from the main settlement by the A96. A complete bypass of the settlement could provide an opportunity to reduce the barriers and severance for pedestrians and cyclists accessing the town centre and other amenities, thus improving the wellbeing of residents. The area of expansion includes businesses, retail and leisure facilities which residents of Inverurie can only access by crossing the A96. A bypass could reassign some through traffic, making pedestrian and cycling access to these facilities more appealing. The degree of improvement would depend on how much traffic is transferred to the bypass.
- 13.2.2 In terms of natural resource requirements, significant quantities of materials and construction-related trips would be required for the construction of a bypass. Depending on the material chosen and its source, there is the potential for a negative impact.
- 13.2.3 A bypass has the potential for negative environmental impacts, with some of these being potentially significant, on various environmental receptors. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views). There are numerous environmental designations around Inverting which may be a constraint to the alignment of a bypass without

there being significant impacts. To the north of Inverurie are two historic battlefields (Battle of Harlaw and Battle of Barra) which are on the Historic Battlefields Inventory. To the east, is Keith Hall Garden and Designed Landscape. There are large swathes of Ancient and Long-Established woodland to the east, west and southwest. There are also areas of significant flood risk to the east and north (associated with the River Urie) and to the southwest (associated with the River Don). There is also a regional landscape designation to the south and west of Inverurie – Bennachie Special Landscape Area. This is designated in the Local Development Plan. All of the aforementioned would be key considerations in delivering a bypass alignment in these areas. The scale of the effects would be dependent on further design development and the alignment of the bypass being determined and therefore at this stage, the extent of impacts is uncertain.

- 13.2.4 In terms of land use, the Aberdeenshire Local Development Plan indicates there is some settlement expansion of residential development to the north-east, north-west and south-west. Commercial and business expansion is shown to the south-west. The alignment of a bypass would also need to take this into consideration as the route could constrain or have a negative impact on the future development.
- 13.2.5 Further environmental assessments would be undertaken if a bypass is progressed through the design and development process, in order to assess the location and scale of specific environmental impacts as well as to identify appropriate mitigation where required.
- 13.2.6 Design and construction environmental management plans would also be recommended, to consider how to protect and enhance the water environment and drainage, landscape and visual amenity, amenity (including noise and air quality), biodiversity, and cultural heritage. It is also recommended that further cumulative impact assessment, environmental mitigation and enhancement measures proposed are embedded in any final options.

13.3 Cumulative Effects

- 13.3.1 The provision of a bypass could enhance resilience of the A96 to the effects of climate change. Given the levels of congestion in the area, and the potential for the bypass to induce travel demand, combined with emissions arising during the construction phase and the limited opportunities to increase active travel within the town, a complete bypass of Inverurie is expected to have a moderate negative impact on climate change under the Without Policy Scenario and minor negative impact under the With Policy Scenario.
- 13.3.2 Overall, at this preliminary stage in the appraisal process, the potential environmental impacts of a complete bypass of Inverurie is considered moderate negative under both the With and Without Policy scenarios, given there could be significant impacts on the landscape, built heritage and ecology and other constraints, although this would be subject of the location and design of the

bypass. If the environmental constraints are avoided, then negative environmental impacts can be reduced.

14. Environmental Assessment of the A96 Corridor Review Preliminary Option – Forres Bypass

- 14.1.1 The A96 trunk road network could be considered vulnerable to the effects of climate change, particularly in areas at high risk of flooding or in locations where current or future ground stability issues are known or anticipated. Impacts also could include material deterioration due to high temperatures leading to deterioration of surface such as softening, deformation and cracking.
- 14.1.2 A bypass is likely to suffer the same vulnerabilities, however flood protection schemes have been implemented within the A96 corridor, including at Forres where possible new infrastructure would be designed to minimise the potential effects of climate change, to reduce the vulnerability at that location.
- 14.1.3 In the short term, GHG emissions would occur due to construction activities undertaken to deliver the bypass, including indirect emissions from the manufacturing and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.
- 14.1.4 Traffic levels along the A96 in the vicinity of Forres are in line with comparable towns along the A96 corridor (such as Inverurie), with approximately 13,000 vehicles per day in 2019. The A96 through Forres is a significant freight and commuter route, with up to 65% of general traffic and up to 89% of HGVs travelling through the town. However, analysis of INRIX traffic data for 2019 indicates that, generally, traffic flows well through the town. Whilst there are short queues on approach to the at-grade roundabouts, traffic is generally travelling above 60% of free flow speed throughout the day. Whilst removing through traffic from Forres is unlikely to significantly reduce slow moving or stationary traffic, it will reduce interaction with at-grade junctions and therefore reduce stop-start traffic. The bypass is likely to have more efficient speed limit, meaning vehicles would be travelling at a more efficient speed than they currently do through the 40mph section.
- 14.1.5 Generally, the provision of a bypass would be expected to better connect residents to key amenities and employment opportunities with the removal of through traffic, with potential to improve the sense of place and opportunities to travel by active modes. However, given the A96 doesn't pass directly through the centre of Forres, these benefits are unlikely to be fully realised in the town. There is a degree of severance as development has occurred to the north of the A96, however, with the exception of the train station, these developments mainly consist of industrial units, which could encourage more sustainable commuting trips, but are unlikely to be significant trip attractors for other trips via active modes.

- 14.1.6 A bypass would provide additional road space and thus, increase capacity for motorised vehicles and incentivise a greater level of travel, potentially inducing travel demand. Whilst congestion is not currently a significant issue within Forres, in the future, congestion is likely to be experienced more intensely and for longer periods in the Without Policy Scenario compared to the With Policy Scenario, where congestion could be minimal. Expected policy impacts under the With Policy Scenario, such as a reduction in car km travelled, could reduce the GHG emissions arising from the bypass users. Therefore, the provision of additional road space has the potential to have a minor negative impact under the Without Policy Scenario and neutral impact under the With Policy Scenario on transport-based emissions. The provision of a bypass would enhance resilience of the A96 to the effects of climate change and offers the potential to increase sustainable commuting trips between key amenities north of the A96 (namely Forres train station) and communities south of the A96.
- 14.1.7 The provision of complementary measures, which do not form part of this option, in conjunction with a bypass could enhance the benefits for climate. For example, creating environments that are more attractive for walking, wheeling, and cycling, and increasing the priority for public transport services, would result in a positive contribution to the climate SEA objectives under both the With and Without Policy demand scenarios.
- 14.2 Other SEA Topics: Water, Air Quality, Biodiversity, Cultural Heritage, Landscape and Visual Amenity, Material Assets, Soil and Population and Human Health
- 14.2.1 A bypass of Forres would likely result in minor positive impacts on communities due to improved safety on the local network and on the trunk road network along the A96 by separating a significant proportion of through traffic from local traffic. This would deliver health and wellbeing benefits to individuals, providing a safer environment to travel. Due to the strategic nature of the route, the existing A96 through Forres carries a large volume of through traffic, with up to 65% of general traffic and up to 89% of HGVs travelling through the town. A bypass of Forres could help to reduce the volume of traffic travelling through the north of the town and thus improve the overall amenity for communities and businesses near the existing road. It may also assist with placemaking by reducing real and perceived severance between the majority of the settlement and the employment areas and train station at the northern extents, particularly for those walking, wheeling, and cycling, and improve the overall sense of place. A bypass would also be likely to help reduce noise and air pollution within Forres itself, however the extent of improvement would depend on how much traffic is transferred to the bypass, and the alignment of a bypass.
- 14.2.2 The trunk road network is important to the operation of bus services, both in connecting smaller settlements to the cities of Inverness and Aberdeen, and in connecting the rural environs to the urban settlements. Safety improvements

delivered by a bypass may reduce disruption from accidents and reduce the associate congestion and disruption when they do occur, supporting enhanced access for all road users. This could enhance opportunities for rural and local communities to access key services, employment opportunities and health care for example.

- 14.2.3 A bypass may also increase the overall use of private vehicles by improving the operational efficiency of the route, making car travel more attractive. Issues in terms of a possible slight deterioration in air quality may increase as a result of any traffic increase, however this is anticipated to be negligible at this location as there is no significant congestion through the town. The option also has the potential to improve air quality along the existing A96 within Forres through reducing traffic volumes and stop-start traffic within the town.
- 14.2.4 In terms of natural resources, significant quantities of materials and construction-related trips would be required for the construction of a bypass. Depending on the materials chosen and its source, there is the potential for at least a minor negative impact.
- 14.2.5 A bypass has the potential for negative environmental impacts, with some of these being potentially significant, on the water environment, biodiversity, agriculture and soils, cultural heritage, landscape and visual amenity, for example. Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views). There are numerous environmental designations around Forres which may be a constraint to the route of a bypass without there being significant impacts. To the north of Forres is the Moray and Firth Coast SPA and Ramsar site at Findhorn. There are some areas of Ancient Woodland and large swathes of Long-Established woodland to the south, west and north-west of Forres. Brodie Castle and Darnaway Castle Gardens and Designed Landscapes are large designations to the west of Forres. There are also areas of significant flood risk to the west and north of Forres associated with the Findhorn River and the coast at Findhorn and to the south-east associated with the Burn of Mosset. Flood mitigation measures are in place at the south-east to address this flood risk. A stretch of the River Findhorn itself, south-west of Forres, is designated as both a SSSI and a SAC. All of the aforementioned would be key considerations in delivering a bypass alignment in these areas. The scale of the impacts would be dependent on further design development and the alignment of the bypass being determined and therefore at this stage, the extent of impacts is uncertain.
- 14.2.6 In terms of land use, the Moray Local Development Plan shows some settlement expansion to the east of Forres. The alignment of a bypass would need to take this into consideration as the route could constrain or have a negative impact on future development. To the south-east of Forres is a large area allocated for flood alleviation which could constrain the route of a bypass. The Local Development Plan includes a potential route of a bypass to the north of the settlement.

- 14.2.7 Further environmental assessment would be undertaken if a bypass is progressed through the design and development process, in order to assess the location and scale of specific environmental impacts as well as to identify appropriate mitigation where required.
- 14.2.8 Design and construction environmental management plans would also be recommended, to consider how to protect and enhance the water environment and drainage, landscape and visual amenity, amenity (including noise and air quality), biodiversity, and cultural heritage. It is also recommended that further cumulative impact assessment, environmental mitigation and enhancement measures proposed are embedded in any final options.

14.3 Cumulative Effects

- 14.3.1 With the potential for the bypass to induce travel demand combined with emissions arising during the construction phase, the limited opportunities to increase active travel within the town and the A96 in Forres identified as at significant risk of flooding from various watercourses, a bypass of Forres is expected to have moderate negative impacts on the Climate Change criterion under the Without Policy Scenario, and minor negative impacts on the Climate Change criterion under the With Policy Scenario.
- 14.3.2 Overall, the potential environmental impacts of a bypass at Forres are considered moderate negative for the Environment criterion under both the With and Without Policy scenarios given there could be significant impacts on the landscape and ecology and other constraints although this would be subject of the location and design of the bypass. If the environmental constraints can be avoided, then negative environmental impacts can be reduced.

15. Environmental Assessment of the A96 Corridor Review Preliminary Option – Development of A96 Electric Corridor

15.1 Climatic Factors

- 15.1.1 GHG emissions would be generated in the short term from construction activities undertaken to deliver the infrastructure, including indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles.
- 15.1.2 Delivery of the option would directly facilitate the refuelling of vehicles which generate fewer GHG emissions than conventional internal combustion engine vehicles. Delivery of such infrastructure would improve the overall network coverage and capacity for alternative fuels which is expected to increase the overall attractiveness and reliability of using low/zero-emission vehicles and enable the decarbonisation of the transport sector. Through this option, it is expected that there would be a significant reduction in GHG emissions, particularly over the long term as the uptake of Low and zero emission vehicles increases. However, there is a need to better understand the wider processes for generating alternative fuels and whether these processes are likely to give rise to potential negative impacts. From a hydrogen perspective and relevant to the A96 review study area, there is currently no significant producer of green hydrogen (that is, generated by renewable energy) in the UK. This is constrained by the lack of significant quantities of renewable energy required for production which is a highly energy intensive process. There is a possibility that over the short to medium term that any hydrogen produced may be classified as 'blue' (produced by natural gas), as this is noted to be an increasing area of focus in the north-east of Scotland, which may reduce the overall benefits from a GHG emissions perspective over the initial years of the option.
- 15.1.3 Alternative refuelling infrastructure is not noted to be particularly prone to the identified effects of climate change, however there may be particular locations where this option could be delivered that may be more vulnerable to the effects impacting the existing A96 (e.g., flooding). Consideration would be made during the site selection process to prioritise locations where there are likely to be minimal potential effects of climate change.
- 15.2 Other SEA Topics: Water, Air Quality, Biodiversity, Cultural Heritage, Landscape and Visual Amenity, Material Assets, Soil and Population and Human Health
- 15.2.1 As the scale and potential locations for the alternative refuelling infrastructure have yet to be defined, it is not possible to identify with any certainty the nature and extent of any associated environmental impacts.

- 15.2.2 The potential requirement for land take, particularly with the static options (and associated storage facilities) is likely to generate negative impacts from a land use perspective. Moreover, there is the potential for minor to moderate negative environmental impacts during construction and operation, on various environmental receptors. These impacts would depend on how the facilities are constructed and their precise location (and more importantly whether they are static, demountable or mobile infrastructure). Such impacts could either be direct (such as demolition/land loss/habitat loss) or indirect (such as impacts on setting or views).
- 15.2.3 Delivery of the option, particularly the static options, is also likely to require the excavation and removal of soils; however, it is not expected that the option would require substantial excavation of ground material.
- 15.2.4 Although the option may result in there being a localised increase in vehicle trips to access this infrastructure, and therefore a slight increase in the overall noise levels associated with this uplift (e.g. noise and vibration through vehicle tyre usage), it is expected the option would facilitate improved air quality (due to the alternative, cleaner fuel sources being proposed), both within the local area and further afield where such vehicles are likely to be travelling to/from.
- 15.2.5 Further environmental assessment would be undertaken if such an option were progressed through the design and development process, in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate.
- 15.2.6 Design and construction environmental management plans would also be recommended, to consider how to protect and enhance the water environment and drainage, landscape and visual amenity, amenity (including noise and air quality), biodiversity, and cultural heritage. It is also recommended that further cumulative impact assessment, environmental mitigation and enhancement measures proposed are embedded in any final options.

15.3 Cumulative Effects

- 15.3.1 Overall, the option is expected to have a moderate positive impact on the Climate Change criterion under the Without Policy Scenario and minor positive impact on the Climate Change criterion under the With Policy Scenario due to the higher uptake of electric vehicles.
- 15.3.2 Overall, the impact on the Environment criterion of alternative refuelling infrastructure are considered neutral in both the With and Without Policy scenarios, although this would be subject to review at the next stage and be dependent on the specific interventions identified and their associated impacts.

Table E1: Environmental Appraisal of Full Dualling

SEA Objectives	al Appraisal of Full Dualling Full Dualling				
JEA Objectives					
Climatic Factors: Greenhouse Gases	Based on the estimated cost range between £2,501m and £5,000m for Full Dualling, GHG emissions arising from the construction stage are estimated to be in the range of approximately 700,000 tonnes CO_2e (t CO_2e) to 1,400,000 t CO_2e .				
(GHG)	Traffic flows and emissions around the A96 and on adjacent connecting routes are predicted to increase as a result of this option due to a combination of reduced congestion, which potentially attracts traffic to the route, and an increase in route length which combine to increase overall vehicle kilometres under both the With and Without Policy Scenarios, resulting in a net increase in GHG emissions.				
	The estimated increase in road user GHG emissions over the appraisal period between the 'with scheme' and 'without scheme' scenarios is approximately 150,000 tCO2e under the 'With Policy' Scenario and approximately 1,450,000 tCO2e under the 'Without Policy' Scenario.				
	The Net Present Value of carbon dioxide equivalent emissions (CO ₂ e) of the proposal, calculated using the DfT GHG Workbook following the Transport Analysis Guidance (TAG) Unit A3, indicates that road user GHG emissions would increase over the 60-year appraisal period. The outputs indicate an estimated disbenefit under the With Policy Scenario of around (-) £15m-£20m and (-) £100m-£125m under the Without Policy Scenario.				
	The provision of a dual carriageway would provide additional capacity whilst also increasing the average speed along the corridor through a combination of an increase in speed limit and the provision of overtaking opportunities. Furthermore, the provision of a dual carriageway would result in additional overtaking opportunities which would contribute to reducing the occurrence of platooning caused by slower moving vehicles, with a consequential change on the reliability of journey times. Traffic modelling indicates time lost due to congestion is anticipated to reduce for general traffic by 2% and 3% in the With and Without Policy scenarios respectively, which is likely to be a result of these factors leading to a more consistent travel speed along the route, which could result in a slight benefit to road-based transport GHG emissions.				
With Policy Scenario Rating	Major Negative				
Without Policy Scenario Rating	Major Negative				
Climatic Factors: Climate Adaptation	The existing A96 Trunk Road is considered vulnerable to the effects of climate change, particularly in areas at high risk of flooding, or locations where current or future ground stability issues are known or anticipated. Such areas identified in the environmental assessment for A96 Full Dualling are the floodplains associated with the River Lossie near Elgin, flood risk areas around Keith associated with the River Isla, and flood risk areas around Inverurie associated with the River Urie and River Don.				
	The transport network improvements are expected to improve the resilience to identified flood risk areas, and other potential climate risks, through the provision of an alternative route to the existing A96 Trunk Road. The enhancements in the transport infrastructure to encourage sustainable transport modes in the area have the potential to partially mitigate road user emissions over time when coupled with decarbonisation of the grid, and a switch to electric vehicles.				
	Whilst there is potential to reduce transport emissions, current key long-term climate change trends for Scotland suggest that average temperatures will increase across all seasons; typically, summers will be warmer and drier, and winters will be milder and wetter. These are likely to have an impact on the Full Dualling option. Heavy rainfall events will become more frequent in the coming decades, exacerbating flooding and landslide incidents. These events have the potential to flood railway lines, or wash sections away, leading to significant disruption on the rail network and a resultant knock-on impact on other transport modes and routes.				
	Paved surfaces created as part of the Full Dualling and active travel might incur surface damage or be impacted by surface water flooding during periods of heavy rainfall. There is also an increased risk of thermal expansion and movement of paved surfaces due to increased summer temperatures. Infrastructure might also be inaccessible during other extreme weather events.				
	In order to account for the effects of climate change, the infrastructure would be designed to be resilient to predicted impacts arising from current and future weather events and climatic conditions, in accordance with current planning, design, engineering practice, and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential extreme weather events that will affect the region, and other likely climate risks.				

SEA Objectives	Full Dualling
	As there is considerable uncertainty associated with the future impacts of climate change and any construction design is yet to be developed, an uncertain score has been assigned for the climate adaptation SEA objective, in both With and Without Policy scenarios.
With Policy Scenario Rating	Uncertain
Without Policy Scenario Rating	Uncertain
Air Quality	Full Dualling has the potential to have positive effects on air quality within settlements. Where the existing A96 Trunk Road alignment passes through settlements that would be bypassed by full dualling, these areas may experience an improvement in air quality due to a reduction in vehicle emissions, with traffic modelling indicating that at a daily level the anticipated traffic flow would reduce on the current A96 Trunk Road through the towns of Forres, Elgin, Keith and Inverurie with A96 Full Dualling in place by between approximately 45% and nearly 90% depending on location. However, as the A96 does not travel through the centre of Forres and Inverurie, benefits to air quality would not be as significant in the centre of these towns where traffic volumes are likely to remain relatively unaffected. Negative impacts on air quality may arise in the vicinity of the dualling alignment itself due to an increase in vehicles using the route. However, the negative impacts on receptors are not expected to be significant due to the improved flow of traffic and the likely lower numbers of properties adjacent to the bypass route. The option is anticipated to increase total emissions of nitrogen oxides (NOx) and particulate matter (PM) over the 60-year appraisal period. This is due to an anticipated increase in road-based trips and an associated increase in car vehicle kilometres. There is a predicted increase of 94 tonnes of NOx and 140 tonnes of particulate matter of 2.5 microns or less (PM _{2.5}) emissions in the With Policy Scenario; and an increase of 821 tonnes of NOx and 159 tonnes of PM _{2.5} emissions in the Without Policy Scenario. For the air quality topic as a
	whole, a minor negative effect was predicted for Full Dualling.
With Policy Scenario Rating	Minor Negative
Without Policy Scenario Rating	Minor Negative
Population and Human Health Quality of life and sustainable access	Full Dualling is likely to have positive effects in terms of communities and physical fitness. The network improvements could reduce disruption and congestion and increase accessibility, including access to services. The inclusion of the bypasses could lead to improvements in quality of life and accessibility for Elgin, Keith and Inverurie through removing some of the through traffic from the network. This has the opportunity to improve the roads in those locations to increase active travel opportunities and reduce some of the barriers to active travel. Creating a sense of place through the improvement of these areas could increase active travel and in turn physical fitness.
With Policy Scenario Rating	Minor Positive
Without Policy Scenario Rating	Minor Positive
Population and Human Health Noise and	Full Dualling has the potential to have positive effects in terms of noise and vibration within the settlements, depending on the alignment of the dual carriageway, as it is assumed that dualling is likely to bypass settlements. Scotland's Noise Map illustrates that vehicle noise from the A96 Trunk Road is a significant contributor of noise within the settlements on the A96 corridor and thereby noise effects could be reduced where the proposed dualling bypasses such settlements. Full dualling has the potential to result in greater noise impacts in



SEA Objectives	Full Dualling
Vibration	proximity to its alignment. The significance of these effects would depend on the preferred alignment and its proximity to sensitive receptors, although noise mitigation could be incorporated. The construction of interventions included in this package and associated traffic is also likely to lead to minor negative effects on noise and vibration during the construction phase.
With Policy Scenario Rating	Uncertain
Without Policy Scenario Rating	Uncertain
Population and Human Health High quality places	Where the alignment of the dual carriageway results in the provision of bypasses, Full Dualling provides the opportunity to deliver interventions within towns to enhance placemaking and reduce real and perceived severance, reducing demand for unsustainable travel, particularly for shorter everyday trips. Facilitating the transition to sustainable models could further reduce traffic volumes within settlements along the corridor such as Elgin and Keith, enhancing the sense of place and supporting health and wellbeing. This is also expected to have a positive impact on the environment within any community bypassed, with improved air quality and result in benefits in relation to noise and vibration and visual amenity resulting from reduced traffic volumes within these settlements. It should however be noted that this option does not include the provision of active travel measures within bypassed settlements.
With Policy Scenario Rating	Minor Positive
Without Policy Scenario Rating	Minor Positive
Population and Human Health Safety	The provision of a dual carriageway and an increase in safe overtaking opportunities between Hardmuir and Craibstone would result in the safer operation of the network and reduced accident rates and severity. This is particularly relevant at locations where evidence suggests there is a safety problem or there is a potential safety risk. From the analysis of accident data, the Personal Injury Accident (PIA) rate on the A96 is lower than the national average; however, the Killed or Seriously Injured (KSI) rate on some rural sections is higher than the national average. There are also perceived safety concerns on the route, such as the lack of safe overtaking opportunities, which can result in driver frustration and poor driving behaviours. Hardmuir to Forres, Fochabers to Keith, Keith to East of Huntly and Kintore to Craibstone are identified as sections of the A96 with a KSI rate slightly higher than the national average. Sections of the A96 through Forres and Keith have also been identified as having a PIA and KSI rate higher than the national average. The improvement in safety would likely result in reduced accident rates and severity as well as a reduction in driver stress, through the provision of safe overtaking opportunities.
With Policy Scenario Rating	Major Positive
Without Policy Scenario Rating	Major Positive
Material Assets Sustainable Transport	Full Dualling has the potential for major negative impacts on the sustainable transport SEA objective as dualling could potentially lead to increased vehicle traffic and associated negative impacts on several SEA topics such as climate (greenhouse gas emissions), air quality, noise and vibration, water quality and flood risk, biodiversity, cultural heritage and landscape.
	However, there is a potential opportunity for road schemes to improve surface conditions, and, alongside advancement in the types of materials used, reduce overall maintenance needs in the longer-term, with associated positive effects. The full dualling option also has potential for minor positive effects on the sustainable use of the transport network by

SEA Objectives	Full Dualling					
	promoting or improving the sustainable use of the transport network through planning for future travel arrangements where journeys are made by a number of different modes (including active travel modes). Bearing these potential negative and positive effects in mind, a moderate negative is predicted overall.					
With Policy Scenario Rating	Moderate Negative					
Without Policy Scenario Rating	Moderate Negative					
Material Assets Natural Resources	Depending on the source and type of materials/natural resources used to construct some of the new infrastructure associated with several of the proposed interventions, there is potential for major negative effects on material assets in terms of natural resources usage. Raw materials such as aggregate, non-metallic minerals, cement and sand are likely to be required for the construction of new transport infrastructure.					
With Policy Scenario Rating	Major Negative					
Without Policy Scenario Rating	Major Negative					
Water Quality and Flood Risk	Full Dualling has the potential for significant negative effects in terms of water, drainage and flooding. There are large areas of floodplain around Elgin associated with the River Lossie, some of which have flood mitigation. There are areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent. There are also areas of flood risk around Inverurie associated with the River Urie and River Don. The construction of the new dual carriageway also has the potential to have a negative impact on water quality of these watercourses and consideration would be needed as to the alignment terms of water crossings and bridge design.					
	The scale of the effects of these proposals would depend on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have adverse environmental effects on water drainage and flooding which could be significant particularly if environmental designations are affected.					
	The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.					
With Policy Scenario Rating	Major Negative					
Without Policy Scenario Rating	Major Negative					
Biodiversity	Due to the overall scale of the required infrastructure, Full Dualling has the potential to have major negative effects on biodiversity and habitats, and forestry. Such impacts could either be direct such as demolition/land loss/habitat loss, or indirect such as impacts on setting or views and would depend on the alignment of the dualling. The A96 corridor and its surroundings, contain various local, regional, national, and international designated sites, the impacts on which would need to be considered. Depending on the alignment of the Full Dualling option, there could be significant effects on the environment given the scale of works which would likely be irreversible particularly given the sensitive locations along the existing route.					
	The local, regional, national, and international designated sites include for example SACs, SPAs and SSSIs. There are large swathes of Long-Established Woodland (of plantation origin), pockets of Ancient Woodland (of semi-natural origin) and areas with Tree Preservation Orders.					
	The following designated sites are noted in the overall A96 corridor study area:					



SEA Objectives	Full Dualling						
	 43 SSSIs eight SPAs seven SACs four Ramsar sites two RSPB Reserves The scale of the effects will depend on the design and alignment of the dualling and further detailed environmental assessment would need to be undertaken as part of any further antion development.						
	option development. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.						
With Policy Scenario Rating	Major Negative						
Without Policy Scenario Rating	Major Negative						
Soils	Soils are important for biodiversity and carbon sequestration. They also provide important ecosystem services such as crop production, pollutant filtration, water retention and protection of archaeological resources. Due to the overall scale of the full dual carriageway option, this package has the potential to have major negative effects on soils within and around the construction footprint, including high grade agricultural land, Geological Conservation Review sites, carbon rich soils and peat. Potential construction impacts include pollution, erosion, removal, degradation, compaction and sealing.						
With Policy Scenario Rating	Major Negative						
Without Policy Scenario Rating	Major Negative						
Cultural Heritage	Due to the overall scale of the required infrastructure, Full Dualling has the potential to have major negative effects on the historic environment. Such impacts could either be direct such as demolition/land loss or indirect such as impacts on setting or views and would depend on the alignment of the dualling. The A96 corridor and its surroundings, contain various local, regional, national, and international designated sites, the impact on which would need to be considered. Depending on the alignment of the Full Dualling option, there could be significant effects on the environment given the scale of works which would likely be irreversible particularly given the sensitive locations along the existing route.						
	 The following designated sites are noted in the overall A96 corridor study area: 17 Gardens and Designed Landscapes 20 Conservation Areas four Inventory of Historic Battlefields Sites 236 Scheduled Monuments 						
	The scale of the effects will depend on the design and alignment of the dualling and further detailed environmental assessment would need to be undertaken as part of any further option development.						
	The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.						

SEA Objectives	Full Dualling					
With Policy Scenario Rating	Major Negative					
Without Policy Scenario Rating	Major Negative					
Landscape	te to the overall scale of the required infrastructure, Full Dualling has the potential to have adverse effects on landscape. Such impacts could either be direct such as molition/land loss/loss of vegetation or indirect such as impacts on setting or views and would depend on the alignment of the dualling. The A96 corridor and its surroundings, national, national, and international designated sites, the impacts on which would need to be considered. Depending on the alignment of the full dualling option, ere could be significant effects on the environment given the scale of works which would likely be irreversible particularly given the sensitive locations along the existing route.					
	The following designated sites are noted in the overall A96 corridor study area:					
	 30 distinct Landscape Character Types (LCTs) between Inverness and Aberdeen 13 Local Landscape Areas (LLAs) 					
	In addition, according to the National Forest Inventory, wooded areas occur along the entire study area, concentrating on the outskirts of the towns of Nairn, Forres and Keith. In the southern part of the study area near Invertie, there is less forestation than in the north. Conifers predominate, but there are also areas of fallen trees, broadleaved trees and young trees. According to the Ancient Woodland Inventory, long-established areas (of plantation origin) are found mainly from Inverness to Huntly.					
	There are also various Tree Preservation Orders scattered through the study area, including several close to the existing A96 for example at Nairn, Keith and Thainstone.					
	The eastern end of the study area is within the Aberdeen City and Aberdeenshire Greenbelt, the purpose of which is to help avoid coalescence of settlements and sprawling development on the edge of the city, maintain Aberdeen's landscape setting, and provide access to open space.					
	Whilst the study area does not contain any nationally recognised scenic viewpoints, or nationally designated landscapes, there are visual sensitivities to some types of development within or visible from the Local Landscape Areas. There are also numerous towns, villages and rural properties, along with numerous paths, recreational trails and areas used for outdoor recreation where there is the potential for visual effects to occur. The scale of the effects associated with the full dualling of the A96 will be dependent on the design and alignment of the dualling and further detailed environmental assessment would need to be undertaken as part of any further option development. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.					
With Policy Scenario Rating	Major Negative					
Without Policy Scenario Rating	Major Negative					

Table E2: Packages 1 to 5

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
Climatic Factors: Greenhouse Gases (GHG)	Based on the estimated cost range between £501m and £1,000m for this package, greenhouse gas (GHG) emissions arising from the construction stage are estimated to be in the range of approximately 140,000 tonnes CO ₂ e (tCO ₂ e) to approximately 280,000 tCO ₂ e. Traffic flows and emissions around the A96 are predicted to increase as a result of this package, due to reduced congestion and an attraction of traffic onto this part of the network. There is therefore a net increase in road users' GHG emissions over the 60-year appraisal period. The estimated increase in road user GHG emissions over the appraisal period between the 'with package' and 'without package' scenarios is approximately 4,000 tCO2e under the 'With Policy' Scenario and approximately 110,000 tCO2e under the 'Without Policy' Scenario. The Net Present Value of tCO2e emissions of the package, calculated using the DfT GHG Workbook following the Transport Analysis Guidance (TAG) Unit A3 for the appraisal period, indicates an estimated net disbenefit under the 'With Policy' Scenario of approximately (-) <£0.5m and (-	Based on the estimated cost range between £501m and £1,000m for this package, GHG emissions arising from the construction stage are estimated to be in the range of approximately 140,000 tonnes CO2e (tCO2e) to approximately 280,000 tCO2e. Traffic flows and emissions along the A96 are predicted to decrease as a result of this package, due to an increase in sustainable travel mode share, resulting in a net decrease in GHG emissions. The estimated decrease in road user GHG emissions over the appraisal period between the 'with package' and 'without package' scenarios is approximately 1,200 tCO2e under the 'With Policy' Scenario and 12,200 tCO2e under the 'With Policy' Scenario. The Net Present Value of tCO2e of the package, calculated using the DfT GHG Workbook following the Transport Analysis Guidance (TAG) Unit A3 for the appraisal period, indicate an estimated net benefit under the 'With Policy' Scenario of approximately (+) <£0.5m and (+) £0.5m-£1m under the 'Without Policy' Scenario. Total road users' GHG emissions arising from this package between 2030 and 2045 are estimated to be 1,402,567 tCO2e for the With Policy Scenario in comparison to 1,403,741 tCO2e without the package in place. This results in a	Based on the estimated cost range between £501m and £1,000m for this package, GHG emissions arising from the construction stage of this package are estimated to be in range of approximately 140,000 tonnes CO ₂ e (tCO ₂ e) and 280,000 tCO ₂ e. Traffic flows and emissions around the A96 decrease as a result of this package, due to an increase in sustainable travel mode share, resulting in a net decrease in road user GHG emissions over the 60-year appraisal period. The estimated decrease in road user GHG emissions over the appraisal period between the 'with package' and 'without package' scenarios is approximately 1,300 tCO2e under the 'With Policy' Scenario and approximately 10,800 tCO2e under the 'Without Policy' Scenario. The Net Present Value of tCO2e of the package, calculated using the DfT GHG Workbook following the Transport Analysis Guidance (TAG) Unit A3 for the appraisal period, indicate an estimated net benefit under the 'With Policy' Scenario of approximately (+) <£0.5m and (+) £0.5m-£1m under the 'Without Policy' Scenario. Total road users' GHG emissions arising from this package between 2030 and 2045 are estimated to be 1,402,420 tCO ₂ e for the With Policy Scenario in comparison to	Based on the estimated cost range between £501m and £1,000m for this package, GHG emissions arising from the construction stage of this package are estimated to be in range of 140,000 tonnes CO ₂ e (tCO ₂ e) and 280,000 tCO ₂ e. Traffic flows and emissions along the A96 are predicted to decrease as a result of this package, due to an increase in sustainable travel mode share, resulting in a net decrease in road user GHG emissions over the 60-year appraisal period. The estimated decrease in road user GHG emissions over the appraisal period between the 'with package' and 'without package' scenarios is approximately 2,100 tCO2e under the 'With Policy' Scenario and approximately 14,100 tCO2e under the 'Without Policy' Scenario. The Net Present Value of tCO2e of the package, calculated using the DfT GHG Workbook following the Transport Analysis Guidance (TAG) Unit A3 for the appraisal period, indicate an estimated net benefit under the 'With Policy' Scenario of approximately (+) <£0.5m and (+) £1m-£5m under the 'Without Policy' Scenario. Total road users' GHG emissions arising from this package between 2030 and 2045 are estimated to be 1,402,420 tCO ₂ e for the With Policy Scenario in comparison to 1,403,741 tCO ₂ e without the	Based on the estimated cost range between £1,001m and £2,500m for this package, greenhouse gas (GHG) emissions arising from the construction stage are estimated to be in the range of approximately 280,000 tonnes CO2e (tCO2e) to approximately 700,000 tCO2e. Traffic flows and emissions around the A96 increase as a result of this package, due to reduced congestion and an attraction of traffic onto this part of the network. There is therefore a net increase in road users' GHG emissions over the 60-year appraisal period. The estimated increase in road user GHG emissions over the 60-year appraisal period between the 'with package' and 'without package' scenarios is approximately 3,200 tCO2e under the 'With Policy' Scenario and 100,400 tCO2e under the 'Without Policy' Scenario The Net Present Value of carbon dioxide equivalent emissions of the proposal, calculated using the DfT GHG Workbook following the TAG Unit A3 for the appraisal period, indicates an estimated net disbenefit under the 'With Policy' Scenario of approximately (-) <£0.5m and (-) £5m-£10m under the 'Without Policy' Scenario. The estimated increase in road users' GHG emissions in the appraisal period between the 'with scheme' and 'without scheme'

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
) £5m-£10m under the 'Without Policy' Scenario. The estimated increase in road users' GHG emissions in the appraisal period between the 'with scheme' and 'without scheme' scenarios for this package of interventions is approximately 4,000 tCO ₂ e under the With Policy Scenario and approximately 110,000 tCO ₂ e under the Without Policy Scenario. Further assessment should take into consideration mitigation to reduce the GHG impact of construction activities.	decrease in road user GHG emissions of 1,174 tCO ₂ e for the period of 2030-2045. Total road users' GHG emissions arising from this package between 2030 and 2045 are estimated to be 3,593,250 tCO ₂ e for the Without Policy Scenario in comparison to 3,596,379 tCO ₂ e without the package in place. This results in a decrease in road user GHG emissions of 3,129 tCO ₂ e for the period of 2030-2045.	1,403,741 tCO ₂ e for 'Road without the Scheme'. This results in the decrease in road user GHG emissions of 1,321 tCO ₂ e in period of 2030-2045. Total road users' GHG emissions arising from this package between 2030 and 2045 are estimated to be 3,593,554 tCO ₂ e for the Without Policy Scenario in comparison to 3,596,379 tCO ₂ e for 'Road without Scheme'. This results in decrease in road user GHG emissions of 2,825 tCO ₂ e in the period of 2030-2045.	package in place. This results in the decrease in road user GHG emissions of 1,321 tCO ₂ e in period of 2030-2045. Total road users' GHG emissions arising from this package between 2030 and 2045 are estimated to be 3,593,554 tCO ₂ e for the Without Policy Scenario in comparison to 3,596,379 tCO ₂ e without the package in place. This results in decrease in road user GHG emissions of 2,825 tCO ₂ e in the period of 2030-2045.	scenarios for this package of interventions is approximately 3,200 tCO ₂ e under the With Policy Scenario and 100,400 tCO ₂ e under the Without Policy Scenario.
With Policy Scenario Rating	Minor Negative	Minor Negative	Minor Negative	Minor Negative	Minor Negative
Without Policy Scenario Rating	Minor Negative	Minor Negative	Minor Negative	Minor Negative	Minor Negative
Climatic Factors: Climate Adaptation	The existing A96 Trunk Road is considered vulnerable to the effects of climate change, particularly in areas with a high risk of flooding or locations where current or future ground stability issues are known or anticipated. Such areas identified in the environmental assessment for this package are the floodplains associated with the River Lossie near Elgin, flood risk areas around Keith associated with the River Isla, and flood risk areas around Inverurie associated with the River Don.	The existing A96 Trunk Road network is considered vulnerable to the effects of climate change, particularly in areas with a high risk of flooding or locations where current or future ground stability issues are known or anticipated. Whilst there is potential to reduce transport emissions, current key long-term climate change trends for Scotland suggest that average temperatures will increase across all seasons; typically, summers will be warmer and drier, and winters will be milder and wetter. These are likely to have an impact on this package of interventions.	The existing A96 Trunk Road network is considered vulnerable to the effects of climate change, particularly in areas with a high risk of flooding or locations where current or future ground stability issues are known or anticipated. Whilst there is potential to reduce transport based GHG emissions, current key long-term climate change trends for Scotland are that average temperatures will increase across all seasons; typically, summers will be warmer and drier, and winters will be milder and wetter. These are likely to have an impact on this package	The existing A96 Trunk Road network is considered vulnerable to the effects of climate change, particularly in areas with a high risk of flooding or locations where current or future ground stability issues are known or anticipated. Whilst there is potential to reduce transport based GHG emissions, current key long-term climate change trends for Scotland are that average temperatures will increase across all seasons; typically, summers will be warmer and drier, and winters will be milder and wetter. These are likely to have an impact on this package	The existing A96 Trunk Road is considered vulnerable to the effects of climate change, particularly in areas with a high risk of flooding or locations where current or future ground stability issues are known or anticipated. Such areas are the floodplains associated with the River Lossie near Elgin, flood risk areas around Keith associated with the River Isla, and flood risk areas around Inverurie associated with the River Urie and River Don. The transport network improvements are expected to improve the resilience to

SEA Objectives Package	1	Package 2	Package 3	Package 4	Package 5
improventimprove to identified other pote enhancent infrastruct sustainabe the area in partially remissions coupled with e grid, a vehicles. Whilst the reduce tracurrent key change the suggest the temperate across all summers drier, and and wetter have an info interversevents will frequent in exacerbate landslide have the prailway liming away, lead disruptioning and a result on other the provides. Paved surthe bypast infrastructions and a result on other the provides.	nents are expected to he resilience to flood risk areas, and ential climate risks. The nents in the transport ture to encourage le transport modes in nave the potential to mitigate road user sover time when with decarbonisation of and a switch to electric ere is potential to ansport emissions, ey long-term climate ends for Scotland nat average ures will increase seasons; typically, will be warmer and winters will be milder er. These are likely to mpact on this package ntions. Heavy rainfall lbecome more in the coming decades, sing flooding and incidents. These events potential to flood nes, or wash sections ding to significant in on the rail network cultant knock-on impact transport modes and efaces created as part of itses, active travel ture, and bus priority	Heavy rainfall events have the potential to flood railway lines, or wash sections away, leading to significant disruption on the rail network. Moreover, such heavy rainfall events are anticipated to become more frequent in the coming decades, exacerbating flooding and landslide incidents. Paved surfaces created as part of the active travel infrastructure, road safety improvements and potential bus priority measures included in this package might incur surface damage or be impacted by surface water flooding during periods of heavy rainfall. There is also an increased risk of thermal expansion and movement of paved surfaces due to increased summer temperatures. Higher summer temperatures might also lead to overheating and damage of electrical equipment developed as part of the 'Electric Corridor' intervention. Infrastructure might also be inaccessible during extreme weather events. In order to account for the effects of climate change, the infrastructure would be designed to be resilient to impacts arising from current and future weather events and climatic conditions, in accordance with current planning, design, engineering practice, and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential extreme weather events	of interventions. These events have the potential to flood railway lines, or wash sections away, leading to significant disruption on the rail network and a resultant knock-on impact on other transport modes and routes. Moreover, such heavy rainfall events are anticipated to become more frequent in the coming decades, exacerbating flooding and landslide incidents. Paved surfaces created as part of the active travel infrastructure, road safety improvements and bus priority measures included in this package might incur surface damage or be impacted by surface water flooding during periods of heavy rainfall. There is also an increased risk of thermal expansion and movement of paved surfaces due to increased summer temperatures. Higher summer temperatures might also lead to overheating and damage of electrical equipment developed as part of the 'Electric Corridor' intervention. In order to account for the effects of climate change, the infrastructure would be designed to be resilient to impacts arising from current and future weather events and climatic conditions and designed in accordance with current planning, design, engineering practice, and codes. A number of mitigation and adaptation measures will be considered at later design development stages to address	of interventions. Heavy rainfall events are expected to become more frequent in the coming decades, exacerbating flooding and landslide incidents These events have the potential to flood railway lines, or wash sections away, leading to significant disruption on the rail network and a resultant knock-on impact on other transport modes and routes. Paved surfaces created as part of the active travel infrastructure and road safety improvements included in this package might incur surface damage or be impacted by surface water flooding during periods of heavy rainfall. There is also an increased risk of thermal expansion and movement of paved surfaces due to increased summer temperatures. Higher summer temperatures might also lead to overheating and damage of electrical equipment developed as part of the 'Electric Corridor' intervention. In order to account for the effects of climate change, the infrastructure would be designed to be resilient to impacts arising from current and future weather events and climatic conditions and designed in accordance with current planning, design, engineering practice, and codes. A number of mitigation and adaptation measures would be considered at later design	identified flood risk areas, and other potential climate risks. The enhancements in the transport infrastructure to encourage sustainable transport modes in the area are expected to mitigate road user emissions over time when coupled with decarbonisation of the grid, and a switch to electric vehicles. Whilst there is potential to reduce transport emissions, current key long-term climate change trends for Scotland suggest that average temperatures would increase across all seasons; typically, summers will be warmer and drier, and winters will be milder and wetter. These are likely to have an impact on this package of interventions. Heavy rainfall events will become more frequent in the coming decades, exacerbating flooding and landslide incidents. These events have the potential to flood railway lines, or wash sections away, leading to significant disruption on the rail network and a resultant knock-on impact on other transport modes and routes. Paved surfaces created as part of the four bypasses, active travel infrastructure, targeted road safety improvements, and bus priority measures included in this package might incur surface damage or be impacted by surface water flooding during periods of heavy rainfall. There is also an increased risk of thermal expansion and movement of

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
SEA Objectives	package might incur surface damage or be impacted by surface water flooding during periods of heavy rainfall. There is also an increased risk of thermal expansion and movement of paved surfaces due to increased summer temperatures. Higher summer temperatures might also lead to overheating and damage of electrical equipment developed as part of the 'Electric Corridor' intervention. Infrastructure might also be inaccessible during extreme weather events. In order to account for the effects of climate change, the infrastructure would be designed to be resilient to predicted impacts arising from current and future weather events and climatic conditions, in accordance with current planning, design, engineering practice, and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential extreme weather events that will affect the region, and other likely climate risks. As there is considerable uncertainty associated with the future impacts of climate change and any construction design is yet to be developed, an uncertain score has been assigned for the climate adaptation SEA objective, in	that would affect the region and other likely climate risks. As there is considerable uncertainty associated with the future impacts of climate change and any construction design is yet to be developed, an uncertain score has been assigned for the climate adaptation SEA objective, in both With and Without Policy scenarios.	potential extreme weather events that are anticipated to affect the region, and other likely climate risks. As there is considerable uncertainty associated with the future impacts of climate change and any construction design is yet to be developed, an uncertain score has been assigned for the climate adaptation SEA objective, in both With and Without Policy scenarios.	development stages to address potential extreme weather events that may affect the region, and other likely climate risks. As there is considerable uncertainty associated with the future impacts of climate change and any construction design is yet to be developed, an uncertain score has been assigned for the climate adaptation SEA objective, in both With and Without Policy scenarios.	paved surfaces due to increased summer temperatures. Higher summer temperatures might also lead to overheating and damage of electrical equipment developed as part of the 'Electric Corridor' intervention. Infrastructure might also be inaccessible during other extreme weather events. In order to account for the effects of climate change, the infrastructure would be designed to be resilient to predicted impacts arising from current and future weather events and climatic conditions, in accordance with current planning, design, engineering practice, and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential extreme weather events that is anticipated to affect the region, and other likely climate risks. As there is considerable uncertainty associated with the future impacts of climate change and any construction design is yet to be developed, an uncertain score has been assigned for the climate adaptation SEA objective, in both With and Without Policy scenarios.

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
	both With and Without Policy scenarios.				
With Policy Scenario Rating	Uncertain	Uncertain	Uncertain	Uncertain	Uncertain
Without Policy Scenario Rating	Uncertain	Uncertain	Uncertain	Uncertain	Uncertain
Air Quality	Although this package is anticipated to have an overall negative impact in terms of air quality, it would have some positive effects on air quality within the bypassed settlements. The inclusion of bypasses has the potential to reduce existing air quality concerns within the settlements of Elgin and Keith, and to a lesser extent, Forres and Inverurie by reducing traffic volumes on the existing A96 Trunk Road through each settlement. Traffic modelling indicates that traffic flows could reduce by between 30% and 85% through the towns, depending on the location. Traffic modelling indicates that, at a daily level, the introduction of a bypass at Elgin is anticipated to reduce traffic on the existing A96 through the town by between approximately 25% and 35% in both directions in the 'With Policy' and 'Without Policy' scenarios respectively. At Inverurie, modelling indicates that the bypass would reduce traffic on the existing A96 by approximately 85% eastbound and 35% westbound in both scenarios. Reductions on the existing A96 at Forres are	This package has the potential to have positive effects on air quality. The inclusion of infrastructure interventions in the settlements to promote walking, cycling and public transport use, should reduce vehicles travelling around and between settlements. The active travel interventions within the settlements would result in an overall decrease in vehicles to the betterment of air quality within the settlement. There would also be a reduction in HGV traffic through a modal shift in freight to the rail network. In addition, the promotion of vehicles with lower or no emissions through the inclusion of alternative refuelling infrastructure and facilities should help to reduce vehicle emissions and thereby reduce overall air pollution. Following the introduction of Package 2, total emissions of nitrogen oxides (NOx) and particulate matter (PM) are predicted to decrease, under both the With and Without Policy scenarios. This is due to a decrease in traffic flows and emissions as a result of the potential interventions, which are	This package has the potential to have positive effects on air quality. The promotion of vehicles with lower or no emissions through the inclusion of alternative refuelling infrastructure and facilities should help to reduce vehicle emissions and thereby reduce overall air pollution. The inclusion of improved public transport infrastructure as well as continuous high quality active travel connections would help reduce reliance on vehicles for travelling between settlements resulting in an overall decrease in vehicles to the betterment of air quality. There would also be a reduction in HGV traffic through a modal shift in freight to the rail network. Following the introduction of Package 3, total emissions of nitrogen oxides (NOx) and particulate matter (PM) are predicted to decrease, under both the With and Without Policy scenarios. This is due to a decrease in traffic flows and emissions as a result of the potential interventions, which are anticipated to reduce congestion as users are encouraged to transfer to more sustainable	This package has the potential to have positive effects on air quality. The promotion of vehicles with lower or no emissions through the inclusion of alternative refuelling infrastructure and facilities should help to reduce vehicle emissions and thereby reduce overall air pollution. The inclusion of infrastructure interventions in the settlements to promote walking and cycling and public transport use would help reduce reliance on private vehicles throughout the network, resulting in an overall decrease in vehicles to the betterment of air quality within the settlements. In addition, the inclusion of continuous high quality active travel connections would help reduce reliance on vehicles for travelling between settlements. There would also be a reduction in HGV traffic through a modal shift in freight to the rail network. Following the introduction of Package 4, total emissions of nitrogen oxides (NOx) are predicted to decrease under both the 'With Policy' and 'Without Policy' scenarios over a 60-year appraisal period. This is due to a decrease in traffic flows and	Although, this package is anticipated to have an overall negative impact in terms of air quality, it also has the potential to have positive effects on air quality within the bypassed settlements. The inclusion of bypasses has the potential to reduce existing air quality concerns within Elgin and Keith and to a lesser extent Forres and Inverurie by reducing traffic volumes on the existing A96 Trunk Road through each of them. Traffic modelling indicating that traffic flows could reduce by between 25% and 85% through the towns, depending on the location. Traffic modelling indicates that, at a daily level, the introduction of a bypass at Elgin is anticipated to reduce traffic on the A96 through the town by between approximately 25% and 35% in both directions in the 'With Policy' and 'Without Policy' scenarios respectively. At Inverurie, modelling indicates that the bypass would reduce traffic on the existing A96 by approximately 85% eastbound and 35% westbound in both scenarios. Reductions on the existing A96 at Forres are anticipated to be approximately 50% to 60% in both directions in the 'With Policy'

SEA Objectives Package 1	Package 2	Package 3	Package 4	Package 5
anticipated to be approximate 50% to 60% in both direction in the 'With Policy' and 'Wither Policy' scenarios, and at Keith reduction of through trips of approximately 65% is anticipated eastbound and 85 westbound in both scenarios. The bypasses however may result in an increase in the usprivate vehicles due to the reduction in congestion, whice may lead to a reduction in air quality in the vicinity of the bypass alignments and the wide A96 Corridor itself. In addition the promotion of vehicles with lower or zero emissions through the inclusion of alternative refuelling infrastructure and facilities should help to reduce vehicle emissions and thereby reduce overall air pollution. Following the introduction of Package 1, total emissions of nitrogen oxides (NOx) and particulate matter (PM) are predicted to increase, under both the With and Without Policy scenarios over the 60-year appraisal period. This is to an increase in traffic flows emissions as congestion is reduced following the inclusion of the proposed bypasses. Emissions are anticipated to reduce within the bypassed settlements as users are encouraged to transfer to mo sustainable modes The packa is predicted to increase NOx a particulate matter of 2.5	as users are encouraged to transfer to more sustainable modes and reduced emissions from low emission vehicles which would benefit from new alternative refuelling infrastructure along the A96 Trunk Road. The package is predicted to decrease NOx by 1 tonne and particulate matter of 2.5 microns or less (PM _{2.5}) emissions by 2 tonnes in the With Policy Scenario; and NOx by 8 tonnes and PM _{2.5} emissions by 3 tonnes in the Without Policy Scenario, over the 60-year appraisal period. There are however opportunities for the transport interventions to promote and facilitate sustainable travel and assist in reducing transport related air pollution along the corridor.	modes and reduced emissions from low emission vehicles which would benefit from new alternative refuelling infrastructure along the A96 Trunk Road. The package would decrease emissions over the 60-year appraisal period. There is a predicted decrease of one tonne of NOx and two tonnes of PM _{2.5} emissions in the With Policy Scenario; and a decrease of seven tonnes of NOx and two tonnes of PM _{2.5} emissions in the Without Policy Scenario.	emissions as a result of the potential interventions, which are anticipated to reduce congestion as users are encouraged to transfer to more sustainable modes and reduced emissions from low emission vehicles which would benefit from new alternative refuelling infrastructure along the A96 Trunk Road. The package would decrease GHG emissions over the 60-year appraisal period. There is a predicted decrease in NOx of two tonnes and three tonnes for PM of 2.5 microns or less (PM _{2.5}) emissions in the 'With Policy' Scenario; and a decrease of 12 tonnes of NOx and four tonnes of PM _{2.5} in the 'Without Policy' Scenario.	and 'Without Policy' scenarios and at Keith, a reduction of through trips of approximately 65% is anticipated eastbound and 85% westbound in both scenarios. The bypasses however may result in an increase in the use of private vehicles due to the reduction in congestion, which may lead to a reduction in air quality in the vicinity of the bypass alignments and indeed the wider A96 corridor itself. The scale of negative impacts on overall air quality can also be reduced through other interventions within the package. The promotion of vehicles with lower or zero emissions through the inclusion of alternative refuelling infrastructure and facilities should help to reduce vehicle emissions and thereby reduce overall air pollution. The inclusion of infrastructure interventions in the settlements to promote walking and cycling and public transport use would help reduce reliance on private vehicles throughout the network, resulting in an overall decrease in vehicles to the betterment of air quality within the settlement. In addition, continuous high quality active travel connections would help reduce reliance on vehicles for travelling between settlements. There would also be a reduction in HGV traffic through a modal shift in freight to the rail network.

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
	microns or less (PM _{2.5}) emissions by 4 tonnes in the With Policy Scenario; and NOx by 46 tonnes and PM _{2.5} emissions by 19 tonnes in the Without Policy Scenario, over the 60-year appraisal period. There are however opportunities for the transport interventions to promote and facilitate sustainable travel and assist in reducing transport related air pollution along the corridor. By reducing the traffic through Forres, Elgin, Keith and Inverurie through the introduction of bypasses, and noting the Nairn bypass committed as part of the A96 Dualling Inverness to Nairn (including Nairn Bypass) scheme, there is also an opportunity to increase the active travel opportunities within these settlements. This could further reduce the use of private vehicles, with a positive effect on air quality.				Following the introduction of Package 5, total emissions of nitrogen oxides (NOx) and particulate matter (PM) are predicted to increase, under both the With and Without Policy scenarios. This is due to an increase in traffic flows and emissions as congestion is reduced following the inclusion of the proposed bypasses. Emissions are anticipated to reduce within the bypassed settlements as users are encouraged to transfer to more sustainable modes The package is predicted to increase NOx and particulate matter of 2.5 microns or less (PM _{2.5}) emissions by 2 tonnes in the With Policy Scenario; and NOx by 45 tonnes and PM _{2.5} emissions by 17 tonnes in the Without Policy Scenario, over the 60-year appraisal period. There are however opportunities for the transport interventions to promote and facilitate sustainable travel and assist in reducing transport related air pollution
					along the corridor. By reducing the traffic through Forres, Elgin, Keith and Inverurie through the introduction of bypasses, and noting the Nairn bypass committed as part of the A96 Dualling Inverness to Nairn (including Nairn bypass) scheme, there is also an opportunity to increase the active travel opportunities within these settlements. This could further reduce the use of private vehicles,

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
					with a positive effect on air quality.
With Policy Scenario Rating	Minor Negative	Minor Positive	Minor Positive	Minor Positive	Minor Negative
Without Policy Scenario Rating	Minor Negative	Minor Positive	Minor Positive	Minor Positive	Minor Negative
Population and Human Health Quality of life and sustainable access	This package could increase sustainable access to essential services by directly improving access to local health and wellbeing infrastructure, a result of improved active travel provision, improved public transport interchange and improving the journey time and frequency of rail services. It could therefore improve access to health and wellbeing facilities in the wider A96 corridor area, for example Raigmore Hospital in Inverness and Aberdeen Royal Infirmary, through improved linkages to public transport services. The removal of through traffic from Elgin is also anticipated to reduce congestion which should provide benefits for accessing local health and wellbeing services, such as Dr Gray's Hospital, whether it be by car, public transport or by active modes. This package could also improve quality of life by improving the public realm, employing placemaking initiatives, providing opportunities for people to gather and socialise, and therefore enabling residents	The options within this package could see a modal shift to sustainable transport, including bus, rail, walking, wheeling and cycling, and help create a sense of place. The increased opportunities to travel by these modes would be beneficial and create opportunities for communities to access key services, employment opportunities and healthcare. The active travel improvements within the settlements would have a positive environmental effect for the communities and physical fitness. These improvements would help create a sense of place and promote walking, wheeling and cycling to the benefit of the population. The implementation of DRT and MaaS within this package could increase the efficiency of service provision and improve sustainable access to labor markets, key centres of employment, education and training. For example, accessibility increases include 8200 additional people being within a 60-minute journey time via public transport to a higher education site, as well as 5,900 additional people being able to access the nearest major	This package supports modal shift to more sustainable transport modes including bus, rail, walking, wheeling and cycling. The increased opportunities to travel by these modes would be beneficial and create opportunities for communities to access key services, employment opportunities and healthcare. In addition, the network improvements could reduce disruption and congestion and increase safety and accessibility. The new active travel infrastructure would help create a sense of place and promote active modes of travel resulting in a positive impact on human health through improved physical fitness and access to healthcare, and reduced community severance. An uptake in active travel may improve the quality of life for those who are most vulnerable to air pollution due to the improvement of air quality, reducing the frequency and severity of adverse health effects from traffic-related emissions.	The proposals are likely to have positive effects in terms of communities and physical fitness. The options could see a modal shift to sustainable transport methods including bus, rail, walking, wheeling and cycling. The increased opportunities to travel by these methods would be beneficial and create opportunities for communities to access key services, employment opportunities and healthcare particularly along the A96 corridor. In addition, this package could reduce disruption and congestion, and increase safety and congestion and increase accessibility. The active travel improvements within and between the settlements would have a positive environmental effect for the communities and physical fitness. Enhancements to the active travel network to provide direct routes to public transport interchange points and stations would also benefit accessibility to key health and wellbeing services. The provision of active communities within this package would reduce the need for people	This package could directly improve access to local health and wellbeing infrastructure, a result of improved active travel provision, improved public transport interchange and improving the journey time and frequency of rail services. It could therefore improve access to health and wellbeing facilities across the wider A96 Corridor, for example Raigmore Hospital in Inverness, Dr Gray's Hospital in Elgin and Aberdeen Royal Infirmary, through improved linkages to public transport services. The removal of through traffic from Elgin is also anticipated to reduce congestion which should provide benefits for accessing local health and wellbeing services, such as Dr Gray's Hospital, whether it be by car, public transport or by active modes. The proposals within this package are also likely to have positive effects in terms of communities and physical fitness. The options could see a modal shift to sustainable transport methods including bus, rail, walking and cycling. The increased opportunities to travel by these

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
	to feel more connected with their local community.	shopping centre within a 40-minute journey time via public transport. The increased provision of alternative transport modes will promote sustainable access.		to travel unsustainably and enhance the sense of place, encouraging the local communities to spend more time in their local areas.	methods would be beneficial and create opportunities for communities to access key services, employment opportunities and healthcare particularly along the A96 corridor. In addition, this package of A96 improvements could reduce disruption and congestion and increase safety and accessibility. The active travel improvements between the settlements would have a positive environmental effect for the communities and physical fitness. Enhancements to the active travel network to provide direct routes to public transport interchange points and stations would also benefit accessibility to key health and wellbeing services.
With Policy Scenario Rating	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Moderate Positive
Without Policy Scenario Rating	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Moderate Positive
Population and Human Health Noise and Vibration	There would be positive effects following the implementation of this package in terms of a potential reduction in noise and vibration within the settlements of Forres, Elgin, Keith and Inverurie, with the provision of bypasses and the associated reduction in the volume of traffic passing through the settlements. Scotland's Noise Map illustrates that vehicle noise from the A96 Trunk Road is a significant contributor of noise within these settlements and	This package aims to promote a shift to sustainable modes of travel, which could see a reduction in road traffic, with positive effects in terms of noise and vibration within and around settlements. There may be a reduction in noise (from both engine and tyres) and vibration from reduced vehicle use in the short term and then reduction in noise (from engines) should electric vehicles come to prominence. Scotland's Noise Map illustrates that vehicle noise from the A96 Trunk Road is a significant	This package aims to promote a shift to sustainable modes of travel, which could see a reduction in road traffic, with positive effects in terms of noise and vibration within and around settlements. There may be a reduction in noise (from both engines and road-tyre interaction) and vibration from reduced vehicle use in the short term and then reduction in noise (from engines) should electric vehicles come to prominence. Scotland's Noise Map illustrates that vehicle noise from the A96	This package aims to promote a shift to sustainable modes of travel which could see a reduction in road traffic, with positive effects in terms of noise and vibration within and around settlements. There may be a reduction in noise (from both engines and road-tyre interactions) and vibration from reduced vehicle use in the short term and then reduction in noise (from engines) should electric vehicles come to prominence. Scotland's Noise Map2 illustrates that the A96 Trunk Road is a	There would be positive effects following the implementation of this package in terms of a potential reduction in noise and vibration within the settlements of Forres, Elgin, Keith and Inverurie, with the provision of bypasses and the associated reduction in the volume of traffic passing through the settlements. Scotland's Noise Map illustrates that noise from vehicles using the A96 Trunk Road is a significant contributor of noise within these settlements and thereby noise effects could be

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
	thereby noise effects could be reduced through both the reduction of vehicles by the interventions within this package and the bypassing of settlements by a large proportion of the vehicles. Noise associated with vehicles would however be prevalent along the bypass routes which could have significant effects depending on their alignment and proximity of receptors although noise mitigation could be incorporated. Furthermore, this package has the potential to have negative effects in terms of noise and vibration through the increase of freight on the railway and any associated rail freight facilities. The significance of the effect would depend on the location of such facilities.	contributor of noise within settlements and along the A96 Trunk Road generally. The modal shift to sustainable modes of transport and away from the private car should help reduce vehicle noise and vibration along the A96 and within settlements. However, this package has the potential to have negative effects in terms of noise and vibration through the increase of freight on the railway and any associated rail freight facilities. The significance of the effect would depend on the location of such facilities.	Trunk Road is a significant noise contributor in the area. This package does, however, have the potential to have localised minor negative effects within the vicinity of the railway and any associated rail line improvements, as a result of the increase in rail freight and an associated increase in noise and vibration. The construction of interventions included in this package and associated traffic is also likely to lead to minor negative effects on noise and vibration during the construction phase. The significance of these effects would depend on the location and scale of any construction work. Overall, and in the operational phase, the modal shift to rail freight, sustainable modes of transport and away from the private car should result in positive effects in terms of noise and vibration through the reduction of vehicles on the A96.	significant noise contributor in the area. This package, however, may potentially have negative effects within the vicinity of the railway and any associated rail freight facilities as a result of the increase in rail freight and an associated increase in noise and vibration. The significance of the effect would depend on the location of such facilities. Overall, the modal shift to sustainable modes of transport and away from the private car should help reduce vehicle noise and vibration along the A96 and within settlements.	reduced through the interventions within this package, including the potential shift to electric vehicles and the bypassing of settlements by a significant proportion of vehicles. Noise associated with vehicles would however be prevalent along the bypass routes which could have significant effects depending on their alignment and proximity to receptors, although various forms of noise mitigation could be incorporated. Furthermore, this package has the potential to have negative effects in terms of noise and vibration through the increase of freight on the railway and any associated rail freight facilities. The construction of interventions included in this package and associated traffic is also likely to lead to minor negative effects on noise and vibration during the construction phase. The significance of these effects would depend on the location of such facilities and scale of any construction work.
With Policy Scenario Rating	Uncertain	Uncertain	Uncertain	Uncertain	Uncertain
Without Policy Scenario Rating	Uncertain	Uncertain	Uncertain	Uncertain	Uncertain
Population and Human Health High quality places	Enhanced placemaking, and the creation of active communities, along with reducing demand for unsustainable travel for shorter everyday trips, would offer improvements to visual amenity in communities where centres	Enhanced placemaking, along with reducing demand for unsustainable travel for shorter everyday trips, would offer improvements to visual amenity in communities where centres become more about a sense of	This package would lead to positive effects on placemaking as it helps to create a better sense of place through increased levels of activity within settlements and improve the feeling of connectivity between settlements along the	As the package focuses on longer distance travel, the impacts would predominantly affect those who travel between communities along the A96 Corridor or into Aberdeen and Inverness at either end of the route. Those who travel	Enhanced placemaking, along with reducing demand for unsustainable travel for shorter everyday trips, would also offer improvements to visual amenity in communities where centres become more about a sense of

SEA Objectives Pa	Package 1	Package 2	Package 3	Package 4	Package 5
pl of m cr w of lo pu ga ha sp	place rather than a connection of roads for the purpose of novement. Improved routes and rossing facilities for walking, wheeling and cycling would also offer better access to existing local green space. Improved bublic realm allows for people to gather and socialise. Studies have linked the quality of public paces to people's perceptions of attractiveness of an area, contributing towards their quality of life.	place rather than a connection of roads for the purpose of movement. Improved routes and crossing facilities for walking, wheeling and cycling would also offer better access to existing local green space. Improved public realm allows for people to gather and socialise. Studies have linked the quality of public spaces to people's perceptions of attractiveness of an area, contributing towards their quality of life. However, there is potential for negative environmental effects on visual amenity during construction and operation of any new road infrastructure, including safety improvements and the development of new alternative fuelling stations. The rail improvements are also likely to impact on visual amenity where passing loops and freight yards are created. This would need to be assessed in more detail during the development of this aspect of the package.	A96 corridor. The package will encourage a mode shift to active modes for longer and shorter trips, which would enhance health and wellbeing. However, there is potential for negative environmental effects on visual amenity during construction and operation of any new road infrastructure, including safety improvements and the development of new alternative fuelling stations. The rail improvements are also likely to impact on visual amenity where passing loops and freight yards are created. This would need to be assessed in more detail during the development of this aspect of the package.	internally within settlements would also see some benefits to local placemaking where active travel routes are introduced or enhanced to facilitate the fully integrated route between Aberdeen and Inverness, or to connect with local transport hubs and public transport interchanges. High-quality travel routes between settlements along the A96 corridor also form part of this package. Through connecting communities, the creation of safe crossings in rural areas, providing safe, attractive, and convenient choices for many functional and recreational journeys, enables people to benefit from improved access to key trip attractors in neighboring settlements, whilst using sustainable travel modes However, there is potential for negative environmental effects on visual amenity during construction and operation of any new road infrastructure, including safety improvements and the development of new alternative fuelling stations. The long-distance active travel connection is also likely to remove greenspace and replace it with active travel infrastructure, including lighting and signage. This would need to be assessed in more detail during the development of this aspect of the package.	place rather than a connection of roads for the purpose of movement. Improved routes and crossing facilities for walking, wheeling and cycling would also offer better access to existing local green space. Improved public realm allows for people to gather and socialise. Studies have linked the quality of public spaces to people's perceptions of attractiveness of an area, contributing towards their quality of life. However, there is potential for negative environmental effects on visual amenity during construction and operation of any new road infrastructure, including safety improvements and the development of new alternative fuelling stations. The rail improvements are also likely to impact on visual amenity where passing loops and freight yards are created. This would need to be assessed in more detail during the development of this aspect of the package.

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
With Policy Scenario Rating	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive
Without Policy Scenario Rating	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive
Population and Human Health Safety	Personal security is likely to improve through an increase in people walking, wheeling and cycling in and around key communities along the A96 corridor as there would be an increase in natural surveillance. Furthermore, public realm improvements such as the provision of street lighting can prevent road traffic collisions and increase pedestrian activity through reduction in the fear of crime. Public transport interchange improvements and DRT/MaaS may also improve personal security and make a safer network for travellers, either directly through improved security facilities at interchanges, such as improved lighting and CCTV coverage or indirectly through better passenger assistance or through minimising wait times. These interventions could therefore improve the attractiveness of public transport stops and stations as they would likely be perceived to be safer. This package could directly improve access to local health and wellbeing infrastructure following the implementation of	Improved pedestrian and cycling infrastructure together with other specific interventions such as speed reduction can significantly reduce road casualties. The following public transport interchange improvements and DRT may also improve personal security and make a safer network for travellers: • Improved security facilities at interchange opportunities through improved lighting and CCTV coverage • Better passenger assistance • Minimising wait times due to better information about services • Public transport stops and stations can become more attractive and would likely be perceived to be safer. • MaaS and DRT can also help those with mobility issues travel, thereby reducing social isolation by allowing trips to be made more easily. These interventions could also deliver better access to healthcare and wellbeing infrastructure, with additional safety benefits where people are currently travelling	Safety would be improved and wait times would be minimised through better passenger assistance and provision of service information. Public transport stops and stations can become more attractive and would likely be perceived to be safer. MaaS and DRT can also help those with mobility issues travel, thereby reducing social isolation by allowing trips to be made more easily. These interventions could also deliver better access to healthcare and wellbeing infrastructure, with additional safety benefits where people are currently travelling longer distances to bus stops using roads with poor pedestrian infrastructure. Additionally, reducing vehicle trips with greater active travel trips and public transport use would contribute to fewer accidents on the network. A mode shift for freight to reduce the number of HGV trips would also contribute to this. The provision and improvement of active travel infrastructure such as implementing segregated and traffic-free routes and providing safe opportunities for crossings in rural areas, would address safety	Safety would be improved through better passenger assistance or through minimising wait times due to better information about services. Public transport stops and stations can become more attractive and would likely be perceived to be safer. Additionally, reducing vehicle trips with greater active travel trips and public transport use would contribute to fewer accidents on the network. A mode shift for freight to reduce the number of HGV trips would also contribute to this. Safety conditions for cyclists could be improved with the provision of a direct and fully connected long distance active travel route within this package, which would offer uninterrupted journeys between and within settlements with adequate provisions at junctions and safe crossing points. The provision of interventions that encourage walking, wheeling and cycling within communities can lead to residents feeling more connected with their local community and improve public health through increased physical activity. The interventions would	Personal security is likely to improve through an increase in people walking, wheeling and cycling in and around key communities along the A96 corridor as there would be an increase natural surveillance. Furthermore, public realm improvements such as the provision of street lighting can prevent road traffic collisions and increase pedestrian activity through reduction in the fear of crime. Public transport interchange improvements and DRT/MaaS may also improve personal security and make a safer network for travellers, either directly through improved security facilities at interchanges, such as improved lighting and CCTV coverage or indirectly through better passenger assistance or through minimising wait times. These interventions could therefore improve the attractiveness of public transport stops and stations as they would likely be perceived to be safer. Safety would also be improved through better passenger assistance or through minimising wait times due to better information about services. Public transport stops and stations can

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
	improved active travel provision, improved public transport interchange and reduced journey times and improved frequency of rail services. It could therefore improve access to health and wellbeing facilities in the wider A96 corridor area, for example Raigmore Hospital in Inverness and Aberdeen Royal Infirmary, through improved linkages to public transport services. The removal of through traffic from Elgin is also anticipated to reduce congestion which should provide benefits for accessing local health and wellbeing services, such as Dr Gray's Hospital, whether it be by car, public transport or by active modes.	longer distances to bus stops using roads with poor pedestrian infrastructure. This package is also directly linked to Scotland's Road Safety Framework to 2030, and the NTS2 as it embeds the Safe System approach to road safety delivery. Improved pedestrian and cycling infrastructure together with other specific interventions such as speed reduction can significantly reduce road casualties. The options within this package could result in a modal shift to sustainable transport including bus, rail, walking, wheeling and cycling. The increased opportunities to travel by these modes would be beneficial and create opportunities for communities to access key services such as healthcare. There would be some benefits to the wider corridor through interventions such as rail improvements but generally the package is targeted at those within the aforementioned settlements. This would limit the potential impact of the package on benefits achieved through aspects such as mode shift and vehicle kilometre reduction as the population in the affected settlements is small in relation to the wider corridor.	concerns which are a significant barrier to the uptake of active travel. This would improve the personal security of vulnerable people and reduce the number of road traffic accidents if overall car use was reduced. Through increasing the overall availability of alternative refuelling assets across the region and expanding coverage, the package should reduce the required distance to reach these assets and therefore the overall number of vehicle kilometres travelled. This could help contribute towards reducing the overall frequency of collisions and their associated causalities; however, this is likely to be minimal.	also improve public realm, allowing people to gather and socialise, with Public Health Scotlandii Linking the quality of public spaces to people's perceptions of attractiveness of an area, positively contributing towards their quality of life. The options within this package could result in a modal shift to sustainable transport including bus, rail, walking, wheeling and cycling. The increased opportunities to travel by these modes would be beneficial and create opportunities for communities to access key services such as healthcare. Modelling undertaken using NaPTAT indicates a journey time reduction to the nearest emergency department hospital in some settlements across the study area that rely on rail use for travelling by public transport. This includes Huntly, where a journey time reduction of up to six minutes to the nearest emergency department hospital is anticipated in the 'with package' assessment compared to the 'without package' assessment. Only considering journey times to the largest emergency department hospitals in the region, found in Aberdeen and Inverness, where more facilities and specialist services are available, the model indicates that journey times would be reduced from Elgin to Raigmore Hospital in Inverness. This journey time reduction would	become more attractive and would likely be perceived to be safer. MaaS and DRT can also help those with mobility issues travel, thereby reducing social isolation by allowing trips to be made more easily. These interventions could also deliver better access to healthcare and wellbeing infrastructure, with additional safety benefits where people are currently travelling longer distances to bus stops using roads with poor pedestrian infrastructure. Additionally, reducing vehicle trips with greater active travel trips and public transport use would contribute to fewer accidents on the network. A mode shift for freight to reduce the number of HGV trips would also contribute to this. This package could directly improve access to local health and wellbeing infrastructure following the implementation of improved active travel provision, improved public transport interchange and reduced journey times and improved frequency of rail services. It could therefore improve access to health and wellbeing facilities across the wider A96 corridor, for example Raigmore Hospital in Inverness, Dr Gray's Hospital in Elgin and Aberdeen Royal Infirmary, through improved linkages to public transport services. The removal of through traffic from

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
				be approximately six minutes from most of the town, though could be up to 14 minutes from parts of New Elgin (to the south).	Elgin is also anticipated to reduce congestion which should provide benefits for accessing local health and wellbeing services, such as Dr Gray's Hospital, whether it be by car, public transport or by active modes.
With Policy Scenario Rating	Moderate Positive	Moderate Positive	Moderate Positive	Moderate Positive	Moderate Positive
Without Policy Scenario Rating	Moderate Positive	Moderate Positive	Moderate Positive	Moderate Positive	Moderate Positive
Material Assets Sustainable Transport	Potential for minor positive effects on the sustainable use of the transport network by promoting or improving the sustainable use of the transport network through planning for future travel arrangements where journeys are made by a number of different modes (including active travel modes). Potential opportunity for road schemes to improve surface conditions, and, alongside advancement in the types of materials used, reduce overall maintenance needs in the longer term, with associated positive effects.	Potential for minor positive effects on the sustainable use of the transport network by promoting or improving the sustainable use of the transport network through planning for future travel arrangements where journeys are made by a number of different modes (including active travel modes).	Potential for minor positive effects on the sustainable use of the transport network by promoting or improving the sustainable use of the transport network through planning for future travel arrangements where journeys are made by a number of different modes (including active travel modes).	Potential for minor positive effects on the sustainable use of the transport network by promoting or improving the sustainable use of the transport network through planning for future travel arrangements where journeys are made by a number of different modes (including active travel modes).	Potential for minor positive effects on the sustainable use of the transport network by promoting or improving the sustainable use of the transport network through planning for future travel arrangements where journeys are made by a number of different modes (including active travel modes). Potential opportunity for road schemes to improve surface conditions, and, alongside advancement in the types of materials used, reduce overall maintenance needs in the longer term, with associated positive effects.
With Policy Scenario Rating	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive
Without Policy Scenario Rating	Minor Positive	Minor Positive	Minor Positive	Minor Positive	Minor Positive
Material Assets Natural Resources	Depending on the source and type of materials/natural resources used to construct some of the new infrastructure	Depending on the source and type of materials/natural resources used to construct some of the new infrastructure associated with	Depending on the source and type of materials/natural resources used to construct some of the new infrastructure associated with	Depending on the source and type of materials/natural resources used to construct some of the new infrastructure associated with	Depending on the source and type of materials/natural resources used to construct some of the new infrastructure associated with

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
	associated with several interventions in the proposed package (including four bypasses), there is potential for major negative effects on material assets in terms of natural resources usage. Raw materials such as aggregate, non-metallic minerals, cement and sand are likely to be required for the construction of new transport infrastructure ⁱⁱ .	several interventions in the proposed package, there is potential for negative effects on material assets in terms of natural resources usage. Raw materials such as aggregate, non-metallic minerals, cement and sand are likely to be required for the construction of new transport infrastructure ⁱⁱ .	several interventions in the proposed package, there is potential for negative effects on material assets in terms of natural resources usage. Raw materials such as aggregate, non-metallic minerals, cement and sand are likely to be required for the construction of new transport infrastructure ⁱⁱ .	several interventions in the proposed package, there is potential for negative effects on material assets in terms of natural resources usage. Raw materials such as aggregate, non-metallic minerals, cement and sand are likely to be required for the construction of new transport infrastructure ⁱⁱ .	several interventions in the proposed package (including four bypasses), there is potential for major negative effects on material assets in terms of natural resources usage.
With Policy Scenario Rating	Major Negative	Minor Negative	Minor Negative	Minor Negative	Major Negative
Without Policy Scenario Rating	Major Negative	Minor Negative	Minor Negative	Minor Negative	Major Negative
Water Quality and Flood Risk	The bypasses and other construction works associated with this package have the potential for significant negative effects on the water environment. There are large areas of floodplain around Elgin associated with the River Lossie, some of which have flood mitigation. There are areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and southwest to a lesser extent. There are also areas of flood risk around Inverurie associated with the River Urie and River Don. These areas are potential constraints to the bypasses proposed. The construction of the bypasses also has the potential to have a negative impact on water quality of these water courses and	The physical works associated with implementing the package, including new active travel, road safety, electric vehicle and public transport infrastructure has the potential for significant negative effects in terms of water, drainage and flooding. There are also large areas of floodplain around Elgin associated with the River Lossie, some of which have flood mitigation. There are areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent. There are also areas of flood risk around Inverurie associated with the River Urie and River Don. These areas are potential constraints to the proposed physical works	The physical works associated with implementing the package, including new active travel, road safety, electric vehicle and public transport infrastructure has the potential to have negative effects in terms of water, drainage and flooding during the construction phase. There are areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent. There are also areas of flood risk around Inverurie associated with the River Urie and River Don. These areas are potential constraints to the proposed physical works associated with implementing this package. The construction of this package also has the potential to have an	The physical works associated with implementing the package, including new active travel, road safety, electric vehicle and public transport infrastructure has the potential to have negative effects in terms of water, drainage and flooding during the construction phase. The impacts will be of varying degrees depending on scale, design and location. There are areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent. There are also areas of flood risk around Inverurie associated with the River Urie and River Don. These areas are potential constraints to the proposed physical works associated with implementing this package.	The bypasses and other construction works associated with this package have the potential for significant negative effects on the water environment. There are areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent. There are also areas of flood risk around Inverurie associated with the River Urie and River Don. The construction of the bypasses has the potential to have a negative effect on water quality of these water courses and consideration would be needed as to the alignment of the bypasses in terms of water crossings and bridge design. The physical works associated with the other interventions within this package, including new active

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
	consideration would be needed as to the alignment of the bypasses in terms of water crossings and bridge design. The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have adverse environmental effects on water drainage and flooding which could be significant particularly if environmental designations are affected. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.	associated with implementing this package. The construction of the various elements of this package has the potential to have negative effects on the water quality of surrounding watercourses during the construction phase and consideration would be needed in terms of water crossings and bridge design. The rail improvements at Keith have the potential to result in some negative effects on flooding due to the areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent. The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have adverse environmental effects on water drainage and flooding which could be significant particularly if environmental designations are affected. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.	these water courses and consideration would be needed in terms of water crossings and bridge design. Any impacts would be of varying degrees depending on scale, design and location. The rail improvements at Keith have the potential to result in some negative effects on flooding due to the areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent. Construction works have the potential to lead to moderate environmental effects given the scale of these works are likely to be more significant and may affect environmental designations. For the continuous active travel route, this may need to follow the current A96 route. The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have adverse environmental effects on water	The construction of this package also has the potential to have an adverse impact on water quality of these water courses and consideration would be needed in terms of water crossings and bridge design. Any impacts would be of varying degrees depending on scale, design and location. The rail improvements at Keith have the potential to result in some negative effects on flooding due to the areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent. The construction of Park and Ride facilities, larger rail freight facilities, long distance active travel routes and any improved overtaking opportunities as part of the A96 improvements has the potential to have moderate environmental effects, given the scale of these works are likely to be more significant and may affect environmental designations. For the continuous active travel route, this may need to follow the current A96 route. The scale of the effects of these proposals would depend on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have adverse environmental effects on water drainage and flooding which could be significant particularly if	travel, road safety, electric vehicle and public transport infrastructure also has the potential to have negative effects in terms of water, drainage and flooding of varying degrees depending on scale, design and location. The rail improvements at Keith have the potential to result in some negative effects on flooding due to the areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent. Construction works have the potential to lead to moderate environmental effects given the scale of these works are likely to be more significant and may affect environmental designations. For the continuous active travel route, this may need to follow the current A96 route. The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have adverse environmental effects on water drainage and flooding which could be significant particularly if environmental designations are affected. The statutory environmental bodies in Scotland would be consulted about the need and

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
				environmental designations are affected. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.	scope of future environmental assessment.
With Policy Scenario Rating	Moderate Negative	Minor Negative	Minor Negative	Minor Negative	Moderate Negative
Without Policy Scenario Rating	Moderate Negative	Minor Negative	Minor Negative	Minor Negative	Moderate Negative
Biodiversity	The bypasses have the potential to have major negative effects on biodiversity and habitats, landscape and forestry. These effects could be major negative (depending on alignment), given the scale of development associated with these bypasses. The physical works associated with the other interventions within this package are likely to have negative environmental effects of varying degrees depending on scale, design and location. Some of these impacts may be short-term during the construction phase only and could be mitigated. The rail improvements at Keith and Huntly have the potential to result in some negative effects however, these effects may be limited, considering there are no environmental designations in the areas of proposed interventions. There may be some localised landscape and biodiversity effects through the	The physical works associated with implementing the package, including new active travel, road safety, electric vehicle and public transport infrastructure has the potential to have negative effects during the construction phase. The impacts would be of varying degrees depending on scale, design and location. The rail improvements at Keith and Huntly have the potential to result in some negative effects on biodiversity and habitats, and forestry. However, the extent of these effects may be limited, considering there are no environmental designations in the areas of proposed interventions. The construction of Park and Ride facilities and the DRT, bus priority and electric corridor interventions also have the potential for negative effects but this is depending on the extent of physical works and location. The environmental effects are likely to be low.	The physical works associated with implementing the package, including new active travel, road safety, electric vehicle and public transport infrastructure has the potential to have negative effects during the construction phase. The impacts would be of varying degrees depending on scale, design and location. The rail improvements at Keith and Huntly are likely to result in some negative effects on biodiversity and habitats, and forestry. However, these effects may be limited, considering there are no environmental designations in the areas of proposed interventions. There may be some localised landscape and biodiversity effects through the loss of vegetation, however mitigation could be utilised through appropriate landscaping and tree planting to minimise these effects. Similarly, works associated with other interventions could also have negative effects on biodiversity and habitats, and forestry. Some	The physical works associated with implementing the package, including new active travel, road safety, electric vehicle and public transport improvements has the potential to have negative effects during the construction phase. The impacts will be of varying degrees depending on scale, design and location. The rail improvements at Keith and Huntly are likely to result in some negative effects on biodiversity and habitats and forestry. However, these effects may be limited, considering there are no environmental designations in the areas of proposed interventions. There may be some localised visual and biodiversity effects through the loss of vegetation, however mitigation could be utilised through appropriate landscaping and tree planting to minimise these effects. Similarly, the other works could have negative effects on biodiversity and habitats and forestry. Some of these impacts may be short term during the	The bypasses have the potential to have negative effects on biodiversity and habitats, landscape and forestry. These effects could be major negative (depending on alignment), given the scale of development associated with these bypasses. The following designations are noted in and around each settlement: Elgin: one Ramsar site five SSSIs parcels of ancient woodland Inverurie: parcels of ancient woodland Keith: two SSSIs parcels of ancient woodland Forres: one SAC

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
	loss of vegetation, however mitigation could be incorporated, such as appropriate landscaping and tree planting to reduce these effects. The construction of Park and Ride facilities and the DRT, bus priority and electric corridor interventions also have the potential for negative effects but this is depending on the extent of physical works and location. The environmental effects are likely to be low. The following designations are noted in and around each settlement: Elgin: one Ramsar site five SSSIs parcels of ancient woodland Inverurie: parcels of ancient woodland Forres: one SAC two SPAs one Ramsar site three SSSIs parcels of ancient woodland In addition, interventions along the current A96 route have the	There may be some localised landscape and biodiversity effects through the loss of vegetation, however mitigation could be incorporated, such as appropriate landscaping and tree planting to reduce these effects. Similarly, works associated with the other non-rail interventions and measures within this package could have negative effects on biodiversity and habitats, landscape, historic environment, water drainage and flooding, geology and soils, agriculture and forestry. Some of these impacts may be short-term during the construction phase only and could be mitigated. The following designations are noted in and around each settlement: Lhanbryde: • one SSSI Mosstodloch/Fochabers: • three SSSIs • one SPA • two SACs • one Ramsar site In addition, interventions along the current A96 route have the potential to affect the following designations: • two Ramsar sites • 12 SSSIs • three SACs • four SPAs The scale of the effects of these proposals would be dependent on the design and location of the	of these impacts may be short- term during the construction phase only and could be mitigated. The DRT, bus priority and electric corridor interventions also have the potential for negative effects but this is depending on the extent of physical works and location. The environmental effects are likely to be low. The construction of Park and Ride facilities, long-distance active travel routes and any improved overtaking opportunities as part of the A96 improvements has the potential to have moderate environmental effects given the scale of these works are likely to be more significant and may affect environmental designations. Interventions along the current A96 route have the potential to affect the following designations: • two Ramsar sites • 12 SSSIs • three SACs • four SPAs The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have negative environmental effects on biodiversity and habitats and forestry, all of which could be	construction phase only and could be mitigated. The construction of larger rail freight facilities, long distance active travel routes and any improved overtaking opportunities as part of the A96 improvements has the potential to have moderate environmental effects, given the scale of these works are likely to be more significant and may affect environmental designations. For the continuous active travel route, this may need to follow the current A96 route. Interventions along the current A96 route have the potential to affect the following designations: • two Ramsar sites • 12 SSSIs • three SACs • four SPAs The scale of the effects of these proposals will be dependent on the design and location of the works and further environmental assessment will be undertaken as the designs progress. These have the potential to have negative environmental effects on biodiversity and habitats, all of which could be significant particularly if the above designations are affected. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.	 two SPAs one Ramsar site three SSSIs parcels of ancient woodland The physical works associated with the other interventions within this package are likely to have negative environmental effects of varying degrees depending on scale, design and location. Some of these impacts may be short term during the construction phase only and could be mitigated. The rail improvements at Keith and Huntly have the potential to result in some negative effects however, these effects may be limited, considering there are no environmental designations in the areas of proposed interventions. There may be some localised landscape and biodiversity effects through the loss of vegetation, however mitigation could be incorporated, such as appropriate landscaping and tree planting to reduce these effects. The construction of Park and Ride facilities and the DRT, bus priority and electric corridor interventions also have the potential for negative effects but this is dependent on the extent of physical works and location. The environmental effects are likely to be low. Interventions along the current A96 route have the potential to affect the following designations: two Ramsar sites

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
	potential to affect the following designations: • two Ramsar sites • 12 SSSIs • three SAC • four SPAs The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have negative environmental effects on biodiversity and habitats, landscape, historic environment, water drainage and flooding, geology and soils, agriculture and forestry, all of which could be significant, particularly if the above designations are affected. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.	works and further environmental assessment would be undertaken as the designs progress. These have the potential to have negative environmental effects on biodiversity and habitats, landscape, historic environment, water drainage and flooding, geology and soils, agriculture and forestry, all of which could be significant, particularly if the above designations are affected. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.	significant particularly if the above designations are affected. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.		 12 SSSIs three SACs four SPAs The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have negative environmental effects on biodiversity and habitats, landscape, historic environment, water drainage and flooding, geology and soils, agriculture and forestry, all of which could be significant, particularly if the above designations are affected. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.
With Policy Scenario Rating	Major Negative	Minor Negative	Moderate Negative	Minor Negative	Major Negative
Without Policy Scenario Rating	Major Negative	Minor Negative	Moderate Negative	Minor Negative	Major Negative
Soils	Soils are important for biodiversity and carbon sequestration. They also provide important ecosystem services such as crop production, pollutant filtration and protection of archaeological resources.	Soils are important for biodiversity and carbon sequestration. They also provide important ecosystem services such as crop production, pollutant filtration and protection of archaeological resources.	Soils are important for biodiversity and carbon sequestration. They also provide important ecosystem services such as crop production, pollutant filtration and protection of archaeological resources.	Soils are important for biodiversity and carbon sequestration. They also provide important ecosystem services such as crop production, pollutant filtration and protection of archaeological resources.	Soils are important for biodiversity and carbon sequestration. They also provide important ecosystem services such as crop production, pollutant filtration and protection of archaeological resources.

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
	The bypasses also have the potential to have negative effects on soils within and around the construction footprint, including high grade agricultural land, Geological Conservation Review sites, carbon rich soils and peat. Potential construction impacts include pollution, erosion, removal, degradation, compaction and sealing.	The physical works associated with implementing the package have the potential to have negative effects on soils within and around the construction footprint. Potential construction impacts include pollution, erosion, removal, degradation, compaction and sealing.	The physical works associated with implementing the package have the potential to have negative effects on soils within and around the construction footprint. Potential construction impacts include pollution, erosion, removal, degradation, compaction and sealing.	The physical works associated with implementing the package, such as introducing rail freight terminals, have the potential to have negative effects on soils within and around the construction footprint. Potential construction impacts include pollution, erosion, removal, degradation, compaction and sealing.	The physical works associated with implementing the package such as introducing rail freight terminals, have the potential to have negative effects on soils within and around the construction footprint. The bypasses also have the potential to have negative effects on soils within and around the construction footprint, including high grade agricultural land, Geological Conservation Review sites, carbon rich soils and peat. Potential construction impacts include pollution, erosion, removal, degradation, compaction and sealing.
With Policy Scenario Rating	Moderate Negative	Minor Negative	Moderate Negative	Minor Negative	Moderate Negative
Without Policy Scenario Rating	Moderate Negative	Minor Negative	Moderate Negative	Minor Negative	Moderate Negative
Cultural Heritage	The bypasses and other construction works associated with this package have the potential to have negative effects on cultural heritage. These effects could be moderate negative (depending on alignment), given the scale of development associated with these bypasses. The physical works associated with the other interventions within this package are likely to have negative environmental effects of varying degrees depending on scale, design and location. Some of these impacts	The physical works associated with implementing the package, including new active travel, road safety, electric vehicle and public transport infrastructure has the potential to have negative effects during the construction phase. The impacts would be of varying degrees depending on scale, design and location. The rail improvements at Keith and Huntly have the potential to result in some negative effects on cultural heritage. However, the extent of these effects may be limited, considering there are no cultural	The physical works associated with implementing the package, including new active travel, road safety, electric vehicle and public transport infrastructure has the potential to have negative effects during the construction phase. The impacts would be of varying degrees depending on scale, design and location. The rail improvements at Keith and Huntly are likely to result in some negative effects on cultural heritage. However, these effects may be limited, considering there are no cultural heritage	The physical works associated with implementing the package, including new active travel, road safety, electric vehicle and public transport infrastructure has the potential to have negative effects during the construction phase. The impacts will be of varying degrees depending on scale, design and location. The rail improvements at Keith and Huntly are likely to result in some negative effects on cultural heritages. However, these effects may be limited, considering there are no cultural heritage designations in the areas of proposed interventions.	The bypasses and other construction works associated with this package have the potential to have negative effects on cultural heritage. These effects could be moderate negative (depending on alignment), given the scale of development associated with these bypasses. The physical works associated with implementing the package, including improving public transport interchanges, linespeed improvements and increasing passenger and freight capacity have the potential to have negative effects during the

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
	may be short-term during the construction phase only and could be mitigated. The rail improvements at Keith and Huntly have the potential to result in some negative effects however, these effects may be limited, considering there are no cultural heritage designations in the areas of proposed interventions. The DRT, bus priority and electric corridor interventions also have the potential for negative effects but this is dependent on the extent of physical works and location. The environmental effects are likely to be low. The following designations are noted in and around each settlement: Elgin • four Scheduled Monuments • two Conservation Areas Inverurie • one Garden and Designed Landscape • two Scheduled Monuments • one Inventory of Historic Battlefields Sites Keith • one Scheduled Monument • two Conservation Areas Forres • one Garden and Designed Landscape	heritage designations in the areas of proposed interventions. The following designations are noted in and around each settlement: Lhanbryde: • one Garden and Designated Landscape Mosstodloch/Fochabers: • one Conservation Area • one Garden and Designated Landscape In addition, interventions along the current A96 route have the potential to affect the following designations: • three Inventory of Historic Battlefields Sites • seven Gardens and Designed Landscapes • seven Scheduled Monuments The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have negative environmental effects on historic environment which could be significant particularly if the above designations are affected. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.	designations in the areas of proposed interventions. The construction works have the potential to have moderate environmental effects given the scale of these works are likely to be more significant and may affect environmental designations. Interventions along the current A96 route have the potential to affect the following designations: • three Inventory of Historic Battlefields Sites • seven Gardens and Designed Landscapes • seven Scheduled Monuments The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have negative environment, all of which could be significant particularly if the above designations are affected. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.	The construction of larger rail freight facilities, long distance active travel routes and any improved overtaking opportunities as part of the A96 improvements has the potential to have moderate environmental effects, given the scale of these works are likely to be more significant and may affect environmental designations. For the continuous active travel route, this may need to follow the current A96 route. Interventions along the current A96 route have the potential to affect the following designations: • three Inventory of Historic Battlefields Sites • seven Gardens and Designed Landscapes • seven Scheduled Monuments The scale of the effects of these proposals will be dependent on the design and location of the works and further environmental assessment will be undertaken as the designs progress. These have the potential to have negative environmental effects on the historic environment which could be significant particularly if the above designations are affected. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.	construction phase. The impacts would be of varying degrees depending on scale, design and location. The rail improvements at Keith and Huntly are likely to result in some negative effects on cultural heritage. However, these effects may be limited, considering there are no cultural heritage designations in the areas of proposed interventions. The construction works have the potential to have moderate environmental effects, given the scale of these works are likely to be more significant and may affect environmental designations. Interventions along the current A96 route have the potential to affect the following designations: • three Inventory of Historic Battlefields Sites • seven Gardens and Designed Landscapes • seven Scheduled Monuments In relation to the bypasses, the following designations are noted in and around each settlement: Elgin • four Scheduled Monuments • two Conservation Areas Inverurie • one Garden and Designed Landscape • two Scheduled Monuments • one Inventory of Historic Battlefields

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
	 two Scheduled Monuments one Conservation Area In addition, interventions along the current A96 route have the potential to affect the following designations: three Inventory of Historic Battlefields Sites seven Gardens and Designed Landscapes seven Scheduled Monuments The scale of the effects will be dependent on the design and alignment of the dualling and further detailed environmental assessment would need to be undertaken as part of any further option development. These have the potential to have negative environmental effects on historic environment, all of which could be significant, particularly if the above designations are affected. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment. 				 Neith one Scheduled Monument two Conservation Areas Forres one Garden and Designed Landscape two Scheduled Monuments one Conservation Area The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have negative environmental effects on historic environment, all of which could be significant, particularly if the above designations are affected. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.
With Policy Scenario Rating	Moderate Negative	Minor Negative	Minor Negative	Minor Negative	Moderate Negative
Without Policy Scenario Rating	Moderate Negative	Minor Negative	Minor Negative	Minor Negative	Moderate Negative
Landscape	The bypasses and improvements to public transport interchanges have the potential to have	The physical works associated with implementing the package, including new active travel, road	The physical works associated with implementing the package, including new active travel, road	The physical works associated with implementing the package, including new active travel, road	The bypasses and improvements to public transport interchanges have the potential to have

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
	negative effects on landscape. These effects could be moderate negative (depending on alignment), given the scale of development associated with these bypasses. The physical works associated with the other interventions within this package are likely to have negative environmental effects of varying degrees depending on scale, design and location. Some of these impacts may be short-term during the construction phase only and could be mitigated. The rail improvements at Keith and Huntly have the potential to result in some negative effects however, these effects may be limited, considering there are no environmental designations in the areas of proposed interventions. There may be some localised landscape and biodiversity effects through the loss of vegetation, however mitigation could be incorporated, such as appropriate landscaping and tree planting to reduce these effects. The DRT, bus priority and electric corridor interventions also have the potential for negative effects but this is dependent on the extent of physical works and location. The environmental effects are likely to be low. The following designations are noted in and around each settlement:	safety, electric vehicle and public transport infrastructure have the potential to have negative effects during the construction phase. The impacts would be of varying degrees depending on scale, design and location. The rail improvements at Keith and Huntly have the potential to result in some negative effects on landscape. However, the extent of these effects may be limited, considering there are no environmental designations in the areas of proposed interventions. There may be some localised landscape and biodiversity effects through the loss of vegetation, however mitigation could be incorporated, such as appropriate landscaping and tree planting to reduce these effects. Similarly, works associated with the other non-rail interventions and measures within this package could have negative effects on landscape. Some of these impacts may be short-term during the construction phase only and could be mitigated. Mosstodloch Spey Valley LLA Lower Spey and Gordon Castle Policies LLA Fochabers Spey Valley LLA Lower Spey and Gordon Castle Policies LLA Huntly Deveron Valley LLA	safety, electric vehicle and public transport infrastructure have the potential to have negative effects during the construction phase. The impacts would be of varying degrees depending on scale, design and location. The rail improvements at Keith and Huntly are likely to result in some negative effects on landscape. However, these effects may be limited, considering there are no environmental designations in the areas of proposed interventions. There may be some localised landscape and biodiversity effects through the loss of vegetation, however mitigation could be utilised through appropriate landscaping and tree planting to minimise these effects. Similarly, works associated with other interventions could also have negative effects on landscape historic environment. Some of these impacts may be short term during the construction phase only and could be mitigated. The construction works as part of this package have the potential to have moderate environmental effects given the scale of these works are likely to be more significant and may affect environmental designations. • 30 distinct Landscape Character Types (LCTs) between Inverness and Aberdeen • 13 Local Landscape Areas (LLAs)	safety, electric vehicle and public transport infrastructure have the potential to have negative effects during the construction phase. The impacts will be of varying degrees depending on scale, design and location. The rail improvements at Keith and Huntly are likely to result in some negative effects landscape and visual amenity, However, these effects may be limited, considering there are no environmental designations in the areas of proposed interventions. There may be some localised visual effects through the loss of vegetation, however mitigation could be utilised through appropriate landscaping and tree planting to minimise these effects. Some of these impacts may be short-term during the construction phase only and could be mitigated. The construction of larger rail freight facilities, long distance active travel routes and any improved overtaking opportunities as part of the A96 improvements has the potential to have moderate environmental effects, given the scale of these works are likely to be more significant and may affect environmental designations. For the continuous active travel route, this may need to follow the current A96 route. • 30 distinct Landscape Character Types (LCTs) between Inverness and Aberdeen	negative effects on landscape. These effects could be moderate negative (depending on alignment), given the scale of development associated with these bypasses. The physical works associated with the other interventions within this package are likely to have negative environmental effects of varying degrees depending on scale, design and location. Some of these impacts may be short-term during the construction phase only and could be mitigated. The rail improvements at Keith and Huntly have the potential to result in some negative effects however, these effects may be limited, considering there are no environmental designations in the areas of proposed interventions. There may be some localised landscape and biodiversity effects through the loss of vegetation, however mitigation could be incorporated, such as appropriate landscaping and tree planting to reduce these effects. The DRT, bus priority and electric corridor interventions also have the potential for negative effects but this is dependent on the extent of physical works and location. The environmental effects are likely to be low. In relation to the bypasses, the following designations are noted in and around each settlement: Forres

SEA Objectives Packa	age 1	Package 2	Package 3	Package 4	Package 5
Nation wood entire concerning con	Findhorn Valley and the Wooded Estates LLA Cluny Hill LLA Quarrelwood LLA Spynie LLA	• Bennachie LLA In addition, according to the National Forest Inventory, wooded areas occur along the entire study area. In the southern part of the study area near Inverurie, there is less forestation than in the north. Conifers predominate, but there are also areas of fallen trees, broadleaved trees and young trees. According to the Ancient Woodland Inventory, long- established areas (of plantation origin) are found mainly from Inverness to Huntly. There are also various Tree Preservation Orders scattered through the study area, including several close to the existing A96 for example at Thainstone near Kintore. The eastern end of the study area (including Blackburn) is within the Aberdeen City and Aberdeenshire Greenbelt, the purpose of which is to help avoid coalescence of settlements and sprawling development on the edge of the city, maintain Aberdeen's landscape setting, and provide access to open space. Whilst the study area does not contain any nationally recognised scenic viewpoints, or nationally designated landscapes, there are visual sensitivities to some types of development within or visible from the Local Landscape Areas. There are also numerous towns, villages and rural properties,	In addition, according to the National Forest Inventory, wooded areas occur along the entire study area, concentrating on the outskirts of the towns of Nairn, Forres and Keith. In the southern part of the study area near Inverurie, there is less forestation than in the north. Conifers predominate, but there are also areas of fallen trees, broadleaved trees and young trees. According to the Ancient Woodland Inventory, long-established areas (of plantation origin) are found mainly from Inverness to Huntly. There are also various Tree Preservation Orders scattered through the study area, including several close to the existing A96 for example at Nairn, Keith and Thainstone. The eastern end of the study area is within the Aberdeen City and Aberdeenshire Greenbelt, the purpose of which is to help avoid coalescence of settlements and sprawling development on the edge of the city, maintain Aberdeen's landscape setting, and provide access to open space. Whilst the study area does not contain any nationally recognised scenic viewpoints, or nationally designated landscapes, there are visual sensitivities to some types of development within or visible from the Local Landscape Areas. There are also numerous towns, villages and rural properties, along with numerous paths,	• 13 Local Landscape Areas (LLAs) In addition, according to the National Forest Inventory, wooded areas occur along the entire study area, concentrating on the outskirts of the towns of Nairn, Forres and Keith. In the southern part of the study area near Inverurie, there is less forestation than in the north. Conifers predominate, but there are also areas of fallen trees, broadleaved trees and young trees. According to the Ancient Woodland Inventory, long-established areas (of plantation origin) are found mainly from Inverness to Huntly. There are also various Tree Preservation Orders scattered through the study area, including several close to the existing A96 for example at Nairn, Keith and Thainstone. The eastern end of the study area is within the Aberdeen City and Aberdeenshire Greenbelt, the purpose of which is to help avoid coalescence of settlements and sprawling development on the edge of the city, maintain Aberdeen's landscape setting, and provide access to open space. Whilst the study area does not contain any nationally recognised scenic viewpoints, or nationally designated landscapes, there are visual sensitivities to some types of development within or visible from the Local Landscape Areas. There are also numerous towns, villages and rural properties,	 Findhorn Valley and the Wooded Estates LLA Cluny Hill LLA Elgin Quarrelwood LLA Spynie LLA Inverurie Bennachie LLA The construction works as part of the other interventions in this package also have the potential to have moderate environmental effects given the scale of these works are likely to be more significant and may affect environmental designations. 30 distinct Landscape Character Types (LCTs) between Inverness and Aberdeen 13 Local Landscape Areas (LLAs) In addition, according to the National Forest Inventory, wooded areas occur along the entire study area, including concentrated areas on the outskirts of the towns of Forres and Keith. In the southern part of the study area near Inverurie, there is less forestation than in the north. Conifers predominate, but there are also areas of fallen trees, broadleaved trees and young trees. According to the Ancient Woodland Inventory, long-established areas (of plantation origin) are found mainly from Inverness to Huntly. There are also various Tree Preservation Orders scattered

SEA Objectives	Package 1	Package 2	Package 3	Package 4	Package 5
	villages and rural properties, along with numerous paths, recreational trails and areas used for outdoor recreation where there is the potential for visual effects to occur. The scale of effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.	along with numerous paths, recreational trails and areas used for outdoor recreation where there is the potential for visual effects to occur. The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.	recreational trails and areas used for outdoor recreation where there is the potential for visual effects to occur. The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.	along with numerous paths, recreational trails and areas used for outdoor recreation where there is the potential for visual effects to occur. The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress.	through the study area, including several close to the existing A96 for example at Nairn, Keith and Thainstone. Whilst the study area does not contain any nationally recognised scenic viewpoints, or nationally designated landscapes, there are visual sensitivities to some types of development within or visible from the Local Landscape Areas. There are also numerous towns, villages and rural properties, along with numerous paths, recreational trails and areas used for outdoor recreation where there is the potential for visual effects to occur. The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.
With Policy Scenario Rating	Moderate Negative	Minor Negative	Moderate Negative	Minor Negative	Moderate Negative
Without Policy Scenario Rating	Moderate Negative	Minor Negative	Moderate Negative	Minor Negative	Moderate Negative



Table E3: Environmental Appraisal of the Refined Package

SEA Objectives	Refined Package
Climatic Factors:	Based on the estimated cost range between £501m and £1,000m for this package, GHG emissions arising from the construction stage of this package are estimated to be in the range of approximately $140,000 \text{ tCO}_2\text{e}$ to $280,000 \text{ tCO}_2\text{e}$.
Greenhouse Gases (GHG)	Traffic flows and emissions around the A96 increase as a result of this package, due to reduced congestion and an attraction of traffic onto this part of the network. There is therefore a net increase in GHG emissions. The estimated increase in road users GHG emissions over the 60-year appraisal period between the 'with package' and 'without package' scenarios is approximately 2,300 tCO2e under the 'With Policy' Scenario and 88,000 tCO2e under the 'Without Policy' Scenario.
	The Net Present Value of tCO2e, calculated using the DfT GHG Workbook following the Transport Analysis Guidance (TAG) Unit A3 for the appraisal period, indicates an estimated disbenefit under the 'With Policy' Scenario of approximately (-) <£0.5m, and (-) £5m-£10m under the 'Without Policy' Scenario.
With Policy Scenario Rating	Minor Negative
Without Policy Scenario Rating	Minor Negative
Climatic Factors: Climate Adaptation	The existing A96 Trunk Road is considered vulnerable to the effects of climate change, particularly in areas with a high risk of flooding such as the floodplains associated with the River Lossie near Elgin, and flood risk areas around Keith associated with the River Isla, or locations where current or future ground stability issues are known or anticipated. Such areas identified in the environmental assessment for this package are the floodplains associated with the River Lossie near Elgin, and flood risk areas around Keith associated with the River Isla, or locations where current or future ground stability issues are known or anticipated.
	The transport network improvements are expected to improve the resilience to identified flood risk areas, and other potential climate risks. The enhancements in the transport infrastructure to encourage sustainable transport modes in the area have the potential to partially mitigate road user GHG emissions over time when coupled with decarbonisation of the grid, and a switch to electric vehicles.
	Despite this, key long-term climate change trends for Scotland are that average temperatures will increase across all seasons; typically, summers will be warmer and drier, and winters will be milder and wetter. These are likely to have an impact on this package. Heavy rainfall events are anticipated to become more frequent in the coming decades, exacerbating flooding and landslide incidents.
	Whilst there is potential to reduce transport based GHG emissions, key long-term climate change trends for Scotland are that average temperatures will increase across all seasons; typically summers will be warmer and drier, and winters will be milder and wetter. These are likely to have an impact on this package of interventions. Heavy rainfall events will become more frequent in the coming decades, exacerbating flooding and landslide incidents. These events have the potential to flood railway lines, or wash sections away, leading to significant disruption on the rail network and a resultant knock-on impact on other transport modes and routes.
	Paved surfaces created as part of the Refined Package options (Elgin and Keith bypasses, active travel infrastructure, and targeted road safety improvements) might incur surface damage or be impacted by surface water flooding during periods of heavy rainfall. There is also an increased risk of thermal expansion and movement of paved surfaces due to increased summer temperatures. Higher summer temperatures might also lead to overheating and damage of electrical equipment developed as part of the A96 Electric Corridor intervention. Infrastructure might also be inaccessible during extreme weather events.
	In order to account for the effects of climate change, the infrastructure would be designed to be resilient to predicted impacts arising from current and future weather events and climatic conditions, in accordance with current planning, design, engineering practice, and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential extreme weather events that are anticipated to affect the region, and other likely climate risks.
	As there is considerable uncertainty associated with the future impacts of climate change and any construction design is yet to be developed, an uncertain score has been assigned for the climate adaptation SEA objective, in both With and Without Policy scenarios.



SEA Objectives	Refined Package
With Policy Scenario Rating	Uncertain
Without Policy Scenario Rating	Uncertain
Air Quality	Although this package is anticipated to have an overall negative impact in terms of air quality, it also has the potential to have positive effects on air quality within the bypassed settlements. The inclusion of bypasses has the potential to reduce existing air quality concerns within Elgin and Keith by reducing traffic volumes on the existing A96 Trunk Road through each of them.
	Traffic modelling indicates that, at a daily level, the introduction of a bypass at Elgin is anticipated to reduce traffic on the A96 through the town by between approximately 25% and 35% in both directions in the 'With Policy' and 'Without Policy' scenarios respectively. At Keith, a reduction of through trips of approximately 65% is anticipated eastbound and up to 85% westbound in both scenarios. The bypasses may result in an increase in the use of private vehicles due to the reduction in congestion, which may have a negative impact on air quality in the vicinity of the bypass alignments and indeed the wider A96 corridor itself.
	The scale of negative impacts on air quality can be reduced through interventions within the package. The inclusion of bypasses has the potential to reduce existing air quality concerns within the settlements of Elgin and Keith by reducing the traffic passing through them. Furthermore, the inclusion of infrastructure interventions in the settlements to promote walking, cycling and public transport use could help reduce reliance on private vehicles throughout the network, resulting in an overall decrease in vehicles to the betterment of air quality within the settlements. In addition, the promotion of vehicles with lower or zero tailpipe GHG emissions through the inclusion of alternative refuelling infrastructure and facilities should help to reduce vehicle emissions. There would also be a reduction in HGV traffic through a modal shift in freight to the rail network, and thereby a reduction in overall air pollution.
	Following the introduction of the Refined Package, total emissions of nitrogen oxides (NOx) and particulate matter (PM) are predicted to increase, under both the With and Without Policy scenarios. This is due to an increase in traffic flows and emissions as congestion is reduced following the inclusion of the proposed bypasses. Emissions are anticipated to reduce within the bypassed settlements as users are encouraged to transfer to more sustainable modes The package is predicted to increase NOx by two tonnes and particulate matter of 2.5 microns or less (PM _{2.5}) emissions by less than 1 tonne in the 'With Policy' Scenario; and NOx by 43 tonnes and PM _{2.5} emissions by 13 tonnes in the Without Policy Scenario, over the 60-year appraisal period. There are however opportunities for the transport interventions to promote and facilitate sustainable travel and assist in reducing transport-related air pollution along the corridor.
	Overall, a minor negative impact on air quality is predicted for the Refined Package.
With Policy Scenario Rating	Minor Negative
Without Policy Scenario Rating	Minor Negative



SEA Objectives	Refined Package
Population and Human Health Quality of life and sustainable access	This package could directly improve access to local health and wellbeing infrastructure, a result of improved active travel provision, improved public transport interchange and improving the journey time and frequency of rail services. It could therefore improve access to health and wellbeing facilities in the wider A96 corridor area, for example Raigmore Hospital in Inverness, Dr Gray's Hospital in Elgin and Aberdeen Royal Infirmary, through improved linkages to public transport services. The removal of through traffic from Elgin is also anticipated to reduce congestion which should provide benefits for accessing local health and wellbeing services, such as Dr Gray's Hospital, whether it be by car, public transport or by active modes. The proposals within this package are also likely to have positive effects in terms of communities and physical fitness. The options could see a modal shift to sustainable transport methods including bus, rail, walking and cycling. The increased opportunities to travel by these methods would be beneficial and create opportunities for communities to access key services, employment opportunities and healthcare particularly along the A96 corridor. In addition, this package of A96 improvements could reduce disruption and congestion and increase safety and accessibility. The active travel improvements between the settlements would have a positive environmental effect for the communities and physical fitness.
	Enhancements to the active travel network to provide direct routes to public transport interchange points and stations would also benefit accessibility to key health and wellbeing services.
With Policy Scenario Rating	Minor Positive
Without Policy Scenario Rating	Minor Positive
Population and Human Health Noise and Vibration	There would be positive effects in terms of a potential reduction in noise and vibration within the settlements of Elgin and Keith, with the provision of bypasses and the associated reduction in the volume of traffic passing through the settlements. The active communities and public transport interventions associated with this package are also likely to reduce noise and vibration from vehicle traffic if the interventions lead to a modal shift. This package may also create positive effects in terms of noise and vibration within and around settlements. The package aims to promote a shift to sustainable modes of traffic which could see a reduction in traffic. Scotland's Noise Map illustrates that the A96 Trunk Road is a significant noise contributor in the area. The modal shift to sustainable modes of transport and away from the private car should help reduce vehicle noise and vibration along the A96 and within settlements. Scotland's Noise Map illustrates that vehicle noise from the A96 Trunk Road is a significant contributor of noise within these settlements and thereby noise effects could be reduced through both the reduction of vehicles by the interventions within this package and the bypassing of settlements by a large proportion of the vehicles. Noise associated with vehicles would however be prevalent along the bypass routes which could have significant effects depending on their alignment and proximity of receptors although noise mitigation could be incorporated. However, this package also has the potential to have negative effects in terms of noise and vibration through the increase of freight on the railway and any associated rail freight facilities. The significance of the effect would depend on the location of such facilities.
With Policy Scenario Rating	Uncertain
Without Policy Scenario Rating	Uncertain
Population and Human Health High quality places	Enhanced placemaking, along with reduced demand for unsustainable travel for shorter everyday trips, would also offer improvements to visual amenity in communities where centres become more about a sense of place rather than a connection of roads for the purpose of movement. Improved routes and crossing facilities for walking, wheeling and cycling would also offer better access to existing local green space. Improved public realm allows for people to gather and socialise. Studies have linked the quality of public spaces to people's perceptions of attractiveness of an area, contributing towards their quality of life.

SEA Objectives	Refined Package
	However, there is potential for negative environmental effects on visual amenity during construction and operation of any new road infrastructure, development of new alternative fuelling stations and any rail line improvements such as the construction of passing loops. This would need to be assessed in more detail during the development of this aspect of the package.
With Policy Scenario Rating	Minor Positive
Without Policy Scenario Rating	Minor Positive
Population and Human Health Safety	Personal security is likely to improve through an increase in people walking, wheeling and cycling in and around key communities along the A96 corridor as there would be an increase in natural surveillance. Furthermore, public realm improvements such as the provision of street lighting can prevent road traffic collisions and increase pedestrian activity through reduction in the fear of crime.
	Public transport interchange improvements and DRT/MaaS may also improve personal security and make a safer network for travellers, either directly through improved security facilities at interchanges, such as improved lighting and CCTV coverage or indirectly through better passenger assistance or through minimising wait times. These interventions could therefore improve the attractiveness of public transport stops and stations as they would likely be perceived to be safer.
	Safety would also be improved through better passenger assistance or through minimising wait times due to better information about services. Public transport stops and stations can become more attractive and would likely be perceived to be safer.
	MaaS and DRT can also help those with mobility issues travel, thereby reducing social isolation by allowing trips to be made more easily. These interventions could also deliver better access to healthcare and wellbeing infrastructure, with additional safety benefits where people are currently travelling longer distances to bus stops using roads with poor pedestrian infrastructure.
	The options within this package could result in a modal shift to sustainable transport including rail, walking, wheeling and cycling. The increased opportunities to travel by these modes would be beneficial and create opportunities for communities to access key services such as healthcare. Modelling undertaken using the NaPTAT estimates that an additional 8,100 of the population in the study area would be able to access an emergency department hospital in a journey time of approximately 30 minutes by public transport. This represents around a 2 percentage point increase in accessibility levels from approximately 49% in the 'without package' assessment to approximately 51% in the 'with package' assessment. This journey time accessibility improvement would also benefit groups who may be more reliant on public transport for accessing health services, such as those aged 65 and over, where an additional 2,100 people would be able to access healthcare in under 30 minutes by public transport, as well as 1,900 people across all age groups with long-term health problems or disability, whose day-to-day activities are limited. The improvements would be found in Aberdeen City (5,900 people), as a result of interchange interventions which would improve the connection between services, and in Moray (2,300 people), with a reduction in journey times observed in settlements such as Lossiemouth. It is anticipated that the improved connection between public transport services in Aberdeen would benefit journeys travelling to the city which require an onward service to reach a destination, such as employment centres which are located across various parts of the city.
	Other journey time improvements to the nearest emergency department hospital would be observed in rural settlements along the A96 corridor, with the highest journey time reduction shown in Huntly where an additional 2,700 people would be able to access their nearest site within 80 minutes. This accessibility benefit would be observed for groups who may be more reliant on public transport for accessing such health services, including 900 people aged 65 and over, and 700 people across all age groups with long-term health problems or disability, whose day-to-day activities are limited. This improvement would be reflected in the journey time reduction to the two cities, Inverness and Aberdeen, as well as Elgin in the study area. Many settlements with access to railway stations show journey time improvements for journeys to Elgin, Inverness and particularly to Aberdeen.
With Policy Scenario Rating	Moderate Positive

SEA Objectives	Refined Package
Without Policy Scenario Rating	Moderate Positive
Material Assets Sustainable Transport	Potential for minor positive effects on the sustainable use of the transport network by promoting or improving the sustainable use of the transport network through planning for future travel arrangements where journeys are made by a number of different modes (including active travel modes).
	Potential opportunity for road schemes to improve surface conditions, and, alongside advancement in the types of materials used, reduce overall maintenance needs in the longer-term, with associated positive effects.
With Policy Scenario Rating	Minor Positive
Without Policy Scenario Rating	Minor Positive
Material Assets Natural Resources	Depending on the source and type of materials/natural resources used to construct some of the new infrastructure associated with several of the proposed interventions, there is potential for moderate negative effects on material assets in terms of natural resources usage. Raw materials such as aggregate, non-metallic minerals, cement and sand are likely to be required for the construction of new transport infrastructure.
With Policy Scenario Rating	Moderate Negative
Without Policy Scenario Rating	Moderate Negative
Water Quality and Flood Risk	The bypasses and other construction works associated with this package have the potential for significant negative effects on the water environment. There are large areas of floodplain around Elgin associated with the River Lossie, some of which have flood mitigation. There are areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent. The construction of the bypasses also has the potential to have a negative impact on water quality of these water courses and consideration would be needed as to the alignment of the bypasses in terms of water crossings and bridge design.
	The physical works associated with implementing the package, including improving public transport interchanges, linespeed improvements and increasing passenger and freight capacity has the potential to have negative effects in terms of water, drainage and flooding during the construction phase.
	There are areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent. These areas are potential constraints to the proposed physical works associated with implementing this package.
	The construction of this package also has the potential to have an adverse impact on water quality of these water courses and consideration would be needed in terms of water crossings and bridge design. Any impacts would be of varying degrees depending on scale, design and location.
	The rail improvements at Keith have the potential to result in some negative effects on flooding due to the areas of flood risk around Keith associated with the River Isla to the north of the town and some flood risk to the west and south-west to a lesser extent.
	Construction works have the potential to lead to moderate environmental effects given the scale of these works are likely to be more significant and may affect environmental designations. For the continuous active travel route, this may need to follow the current A96 route.
	The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have adverse environmental effects on water drainage and flooding which could be significant particularly if environmental designations are affected.

SEA Objectives	Refined Package
	The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.
With Policy Scenario Rating	Minor Negative
Without Policy Scenario Rating	Minor Negative
Biodiversity	The bypasses have the potential to have moderate negative effects on biodiversity and habitats, landscape and forestry. These effects could be moderate negative (depending on alignment), given the scale of development associated with these bypasses.
	The following designations are noted in and around each settlement:
	Elgin:
	 one Ramsar site five SSSIs parcels of ancient woodland
	Keith:
	 two SSSIs parcels of ancient woodland
	The physical works associated with the other interventions within this package are likely to have negative environmental effects of varying degrees depending on scale, design and location. Some of these impacts may be short-term during the construction phase only and could be mitigated. The rail improvements at Keith and Huntly have the potential to result in some negative effects however, these effects may be limited, considering there are no environmental designations in the areas of proposed interventions. There may be some localised landscape and biodiversity effects through the loss of vegetation, however mitigation could be incorporated, such as appropriate landscaping and tree planting to reduce these effects. The construction of the DRT and electric corridor interventions also have the potential for negative effects but this is dependent on the extent of physical works and location. The environmental effects are likely to be low.
	This has the potential to affect the following designations:
	 two Ramsar Sites 12 SSSIs three SACs four SPAs
	The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have negative environmental effects on biodiversity and habitats, landscape, historic environment, water drainage and flooding, geology and soils, agriculture and forestry, all of which could be significant particularly if the above designations are affected.
	The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.
With Policy Scenario Rating	Moderate Negative

SEA Objectives	Refined Package
Without Policy Scenario Rating	Moderate Negative
Soils	Soils are important for biodiversity and carbon sequestration. They also provide important ecosystem services such as crop production, pollutant filtration and protection of archaeological resources.
	The physical works associated with implementing the package, have the potential to have negative effects on soils within and around the construction footprint.
	The bypasses also have the potential to have negative effects on soils within and around the construction footprint, including high grade agricultural land, Geological Conservation Review sites, carbon rich soils and peat.
	Potential construction impacts include pollution, erosion, removal, degradation, compaction and sealing.
With Policy Scenario Rating	Minor Negative
Without Policy Scenario Rating	Minor Negative
Cultural Heritage	The bypasses and other construction works associated with this package have the potential to have negative effects on cultural heritage. These effects could be minor negative (depending on alignment), given the scale of development associated with these bypasses.
	The physical works associated with implementing the package, including improving public transport interchanges, linespeed improvements and increasing passenger and freight capacity has the potential to have negative effects during the construction phase. The impacts would be of varying degrees depending on scale, design and location. The rail improvements at Keith and Huntly are likely to result in some negative effects on cultural heritage. However, these effects may be limited, considering there are no cultural heritage designations in the areas of proposed interventions.
	The construction works have the potential to have moderate environmental effects given the scale of these works are likely to be more significant and may affect environmental designations.
	Interventions along the current A96 route have the potential to affect the following designations:
	 three Inventory of Historic Battlefields seven Gardens and Designed Landscapes seven Scheduled Monuments
	In relation to the bypasses, the following designations are noted in and around each settlement:
	Elgin:
	 four Scheduled Monuments two Conservation Areas
	Keith:
	 one Scheduled Monument two Conservation Areas
	The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress. These have the potential to have negative environmental effects on historic environment, all of which could be significant particularly if the above designations are affected.

SEA Objectives	Refined Package
	The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.
With Policy Scenario Rating	Minor Negative
Without Policy Scenario Rating	Minor Negative
Landscape	The bypasses and improvements to public transport interchanges have the potential to have negative effects on landscape. These effects could be minor negative (depending on alignment), given the scale of development associated with these bypasses.
	The physical works associated with the other interventions within this package are likely to have negative environmental effects of varying degrees depending on scale, design and location. Some of these impacts may be short-term during the construction phase only and could be mitigated. The rail improvements at Keith and Huntly have the potential to result in some negative effects however, these effects may be limited, considering there are no environmental designations in the areas of proposed interventions. There may be some localised landscape and biodiversity effects through the loss of vegetation, however mitigation could be incorporated, such as appropriate landscaping and tree planting to reduce these effects. The DRT and electric corridor interventions also have the potential for negative effects but this is dependent on the extent of physical works and location. The environmental effects are likely to be low.
	In relation to the bypasses, the following designations are noted in and around each settlement:
	Elgin:
	 Quarrelwood LLA Spynie LLA
	The construction works as part of the other interventions in this package also have the potential to have moderate environmental effects given the scale of these works are likely to be more significant and may affect environmental designations.
	The following designated sites are noted in the overall A96 corridor study area:
	 30 distinct Landscape Character Types (LCTs) between Inverness and Aberdeen 13 Local Landscape Areas (LLAs)
	In addition, according to the National Forest Inventory, wooded areas occur along the entire study area, including concentrated areas on the outskirts of the towns of Forres and Keith. In the southern part of the study area near Inverurie, there is less forestation than in the north. Conifers predominate, but there are also areas of fallen trees, broadleaved trees and young trees. According to the Ancient Woodland Inventory, long-established areas (of plantation origin) are found mainly from Inverness to Huntly.
	There are also various Tree Preservation Orders scattered through the study area, including several close to the existing A96 for example at Nairn, Keith and Thainstone.
	Whilst the study area does not contain any nationally recognised scenic viewpoints, or nationally designated landscapes, there are visual sensitivities to some types of development within or visible from the Local Landscape Areas. There are also numerous towns, villages and rural properties, along with numerous paths, recreational trails and areas used for outdoor recreation where there is the potential for visual effects to occur.
	The scale of the effects of these proposals would be dependent on the design and location of the works and further environmental assessment would be undertaken as the designs progress.
	The statutory environmental bodies in Scotland would be consulted about the need and scope of future environmental assessment.
With Policy Scenario Rating	Minor Negative



SEA Objectives	Refined Package
Without Policy Scenario Rating	Minor Negative

i IOER Information System Built Environment 2024, Transport Infrastructures, available at https://ioer-isbe.de/en/resources/construction-data/transport-infrastructures

ii Public Health Scotland, Evidence Behind Place Standard Tool and Place and Wellbeing Outcomes, 2022,

<a href="https://www.publichealthscotland.scot/publications/evidence-behind-place-standard-tool-and-place-standard-tool-and-place-and-wellbeing-outcomes/evidence-behind-place-standard-tool-and-place-and-wellbeing-outcomes/evidence-behind-place-standard-tool-and-place-and-wellbeing-outcomes/evidence-behind-place-standard-tool-and-place-and-wellbeing-outcomes/evidence-behind-place-standard-tool-and-place-and-wellbeing-outcomes/evidence-behind-place-standard-tool-and-place-and-wellbeing-outcomes/evidence-behind-place-standard-tool-and-place-and-wellbeing-outcomes/evidence-behind-place-and-wellbein

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- ²A96 Corridor Review, Climate Compatibility Assessment Report (Draft): https://www.transport.gov.scot/publication/climate-compatibility-assessment-report-draft-a96-corridor-review/
- ³ EIA screening process https://www.transport.gov.scot/publication/guidance-environmental-impact-assessments-for-road-projects/screening-process/
- ⁴ Design Manual for Roads and Bridges (DMRB), Volume 11, Section 3, Part 1 LA 105 Air Quality. https://www.standardsforhighways.co.uk/search/af7f4cda-08f7-4f16-a89f-e30da703f3f4
- ⁵ Halcrow (2014) A96 Dualling Programme Strategic Environmental Assessment Tier 1 Environmental Report. https://www.transport.gov.scot/media/39258/a96-t1-sea-environmental-report.pdf
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- ⁷ CH2M (2016) A96 Dualling Programme Strategic Environmental Assessment Post Adoption Statement. https://www.transport.gov.scot/media/39288/a96-t2-sea-post-adoption-statement.pdf
- ⁸ Jacobs AECOM (2022) A96 Corridor Review: Strategic Environmental Assessment Screening Report. https://www.transport.gov.scot/publication/a96-corridor-review-strategic-environmental-assessment-sea-screening-report/
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