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National Networks National Policy Statement (NPS) – Appraisal of Sustainability (AoS) Scoping Report

Report to Department for Transport (DfT)

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	Date	March 2009

Table of contents

Appendices

1 Introduction

1.1 Structure of this Report

This Scoping Report has been structured in the following sections:

- **Section 1 (this section):** Introduction to the Scoping Report, including an overview of the Planning Act, National Networks NPS and Appraisal of Sustainability.
- **Section 2:** A summary of the review of plans, policies and programmes relevant to the National Networks NPS.
- **Section 3:** An overview of the environmental, economic, social and general baseline characteristics related to the National Networks NPS.
- **Section 4:** Key sustainability issues identified relevant to National Network-related development and infrastructure.
- **Section 5:** The AoS Framework, including the AoS objectives/sub-objectives, and an overview of the assessment of the compatibility of AoS objectives.
- **Section 6:** An overview of consultation undertaken to date on the AoS and planned consultation.
- **Section 7:** An overview of the remaining stages of the AoS process for the National Networks NPS.

1.2 Background to National Policy Statements

1.2.1 The Planning Act

The Planning Act was granted Royal Assent on Tuesday 26th November 2008. The legislation builds on the proposals set out in the Planning White Paper, published on 21st May 2007, and introduces a new system for nationally significant infrastructure planning, alongside further reforms to the Town and Country Planning system.

A major component of this legislation is the introduction of an independent Infrastructure Planning Commission (IPC), to take decisions on major infrastructure projects (transport, energy, water and waste). To support decision-making, the IPC will refer to the Government's National Policy Statements (NPSs), which will provide a clear long-term strategic direction for nationally significant infrastructure development.

National Policy Statements are at the heart of the new planning regime for nationally significant infrastructure projects. Each NPS sets out Government policy for the infrastructure it covers and the reasons for that policy. This includes the need for new infrastructure; the relative weight to be given to specified criteria such as the benefits of new infrastructure and the adverse impacts that it might have; and, when action should be taken to mitigate adverse impacts. NPSs can set out criteria to be used in deciding whether a location is suitable for a type of infrastructure. They can also identify specific locations that are or might be suitable or unsuitable for a type of infrastructure[1].

Setting out a clear Government policy in this way establishes clear Ministerial accountability for the policy choices that underlie planning decisions on nationally significant infrastructure schemes. It also:

- provides the primary basis for decisions by the Infrastructure Planning Commission on the applications it receives;
- reduces the need for discussion at public inquiries about what is or should be Government policy – avoiding a situation in which an attempt is made to determine what the national need is on a case by case basis; and,
- gives prospective infrastructure providers clarity as to which proposals are or are not in line with Government policy.

The IPC must have regard to the relevant NPS in deciding applications put to it. The NPS are not, however, the only factor. The IPC will also have regard to any local impact report submitted by a

[1] See Section [5(5) and (6)] of the Planning Act 2008 for the exact specification as to what an NPS may or should contain

relevant local authority; anything that Ministers may prescribe in regulations in relation to a particular type of infrastructure; and anything else that the IPC judges to be both important and relevant to the decision.[2]

The IPC will have to decide an application[3] in accordance with the NPS unless it is satisfied that to do so would:

- lead to the UK being in breach of its international obligations;
- be unlawful;
- be in breach of any statutory duty that applies to the IPC;
- result in adverse impacts that outweigh the benefits; or
- be contrary to regulations about how decisions are to be taken.

The IPC will not be bound by local or regional developments plans. However, where a proposed infrastructure development would preclude something envisaged in a development plan, that may be considered as a potential adverse impact. As a statement of policy at national level the NPS, however, has primacy over regional or local planning documents for planning purposes.

1.2.2 National Networks National Policy Statement

The National Networks NPS will cover the strategic road network, the rail network and rail freight interchange facilities over 60 hectares. Sustainability issues within National Networks are currently addressed within the context of the October 2007 White Paper, "*Towards a Sustainable Transport System*" (TaSTS[4]) and follow up documents. This document describes the Department for Transport's (DfT) response to recommendations made in the Eddington[5] study to improve transport's contribution to economic growth and productivity, and those made in the Stern Review to ensure transport contributes to reducing Greenhouse Gas (GHG) emissions in the UK; sets out the DfT's policy and investment plans for the period to 2013-14; and proposes a longer term strategic approach for transport.

The NPS will be based on analysis at the national corridor level. It will forecast trips over the planning horizon, and identify in so far as is possible, the balance between demand growth pressures and measures necessary to meet the other challenges (particularly greenhouse gas emissions), the role of the modes in each corridor, and the level of service (reliability, journey time, safety etc.) that road and rail should deliver.

The analysis that underpins the NN NPS will focus on the 14 strategic national corridors identified in work undertaken as part of the "*Delivering a Sustainable Transport System"* (DaSTS[6]) process. This work identified a number of components of the transport infrastructure that, collectively, are critical to the functioning of the system as a whole and to the economic success of the nation. These are ten major ports, seven airports, our ten major conurbations and the 14 strategic national corridors that connect them.

The NPS will also need to set the framework for the Highways Agency's routes that are classified as regional, as well as local /regional rail schemes that do not feature as part of the Strategic National Corridors. The NPS will not present analysis for these routes, relying instead on Regional Spatial Strategies (or the future Integrated Regional Strategies) or Local Transport Plan (LTPs) in the case of locally funded rail schemes, to establish the strategic need, in addition to advice from regional stakeholders through the Regional Funding Allocation (RFA) process to determine priority, as is current practice.

Figure 1 to Figure 3 show the spatial location of the Strategic National Corridors, including rail and road, in England.

[2] See Section 104(2) of the Planning Act 2008 for the exact position
[3] See Section 104(3) – (8) of the Planning Act 2008 for the exact position
[4] DfT (2007) *Towards a Sustainable Transport System: Supporting Economic Growth in a Low Carbon World*, TSO, UK. URL: http://www.dft.gov.uk/about/strategy/transportstrategy/pdfsustaintranssystem.pdf
[5] DfT (2006) The Eddington Transport Study, DfT, UK. URL: http://www.dft.gov.uk/about/strategy/transportstrategy/eddingtonstudy/
[6] DfT (2008) *Delivering a Sustainable Transport System: Main Report and Consultation on Planning for 2014 and Beyond*, DfT, UK. URL: http://www.dft.gov.uk/about/strategy/transportstrategy/dasts/dastsreport.pdf

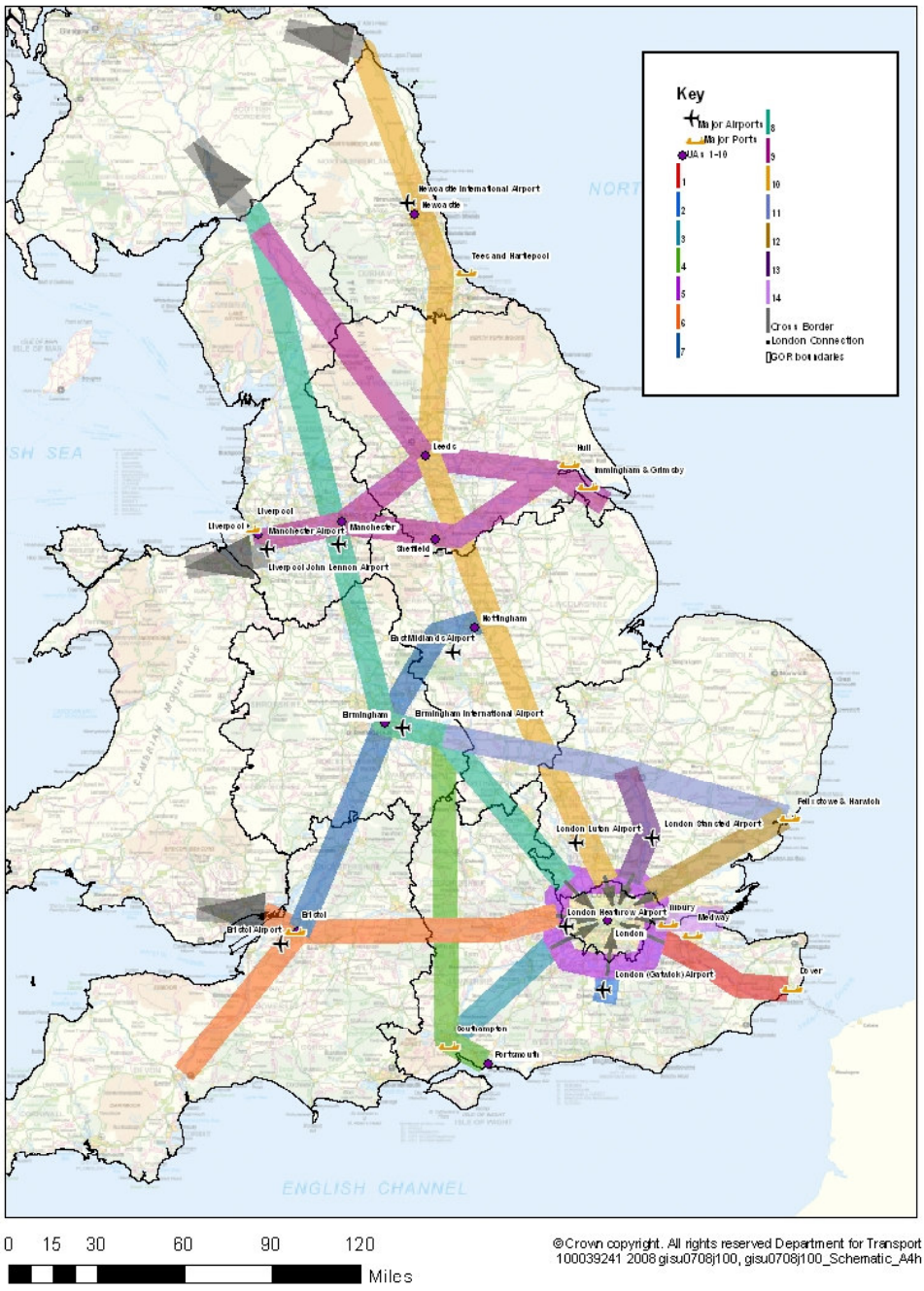

Figure 1: Strategic National Corridors

Figure 2: Strategic National Corridors – Rail Network

Figure 3: Strategic National Corridors – Road Network

1.3 Background to Appraisal of Sustainability (AoS)

The Planning Act commits Government Departments to assess the social, economic and environmental sustainability of policy stated within a NPS through the production of an Appraisal of Sustainability (AoS). The AoS process therefore relies upon the development of an appraisal framework within which assessments of the relative sustainability of the policy options can be made,

with the purpose of providing decision makers, consultees and others with manageable information on the wider effects of its implementation and capture progress towards sustainability.

The AoS needs to assess the environmental, social and economic effects of the NPS. The approach taken to the AoS will therefore use many of the principles of traditional 'Strategic Environmental Assessment' (SEA) and 'Sustainability Appraisal' (SA). SEA is a requirement in the assessment of the effects of certain plans and programmes as set out in the EU Directive 2001/42/EC and largely focuses on environmental effects. SA aims to promote sustainable development through the integration of environmental, social and economic considerations. Elements of SEA are often integrated into the wider SA process. In preparing this AoS Scoping Report, we have endeavored to utilize best practice in SA/SEA (ODPM, 2005[7]) where appropriate. However, this was not a requirement of the AoS brief.

This scoping exercise and subsequent AoS for the NN NPS (like SEA and SA processes) should be undertaken at the same time as the drafting of the National Policy Statement. This will ensure that findings from the scoping exercise and the AoS can be taken into account and potentially influence the draft policy statement prior to the public consultation stage.

The definition of sustainability that underpins this scoping exercise for the AoS is "*economic and social development that meets the needs of the current generation without undermining the ability of future generations to meet their own needs*" (WCED, 1987[8]). This definition is brought together under what is often referred to as the three pillars of sustainability: economic, social and environmental development. The UK Government has developed strategies to help implement sustainable development.

The DfT published '*Towards a Sustainable Transport System'* in 2007, (TaSTS) which outlines how the Government will improve transport's contribution to economic growth/productivity; ensuring transport is contributing to delivering reductions in carbon dioxide and other greenhouse gas emissions and proposing an approach to longer-term transport strategy. Five goals are included within the strategy, and are set out in DaSTS[9], which sets out how DfT is putting the TaSTS approach into practice through a strategy that both tackles immediate problems and also shapes our transport system to meet the longer-term challenges that are critical for our prosperity and way of life. These are:

- To support national economic competitiveness and growth, by delivering reliable, efficient networks;
- To reduce transport's emissions of carbon dioxide and other greenhouse gases, with the desired outcome of tackling climate change;
- To contribute to better safety, security and health and longer life-expectancy by reducing the risk of death, injury or illness arising from transport and by promoting travel modes that are beneficial to health;
- To promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society;
- To improve quality of life for transport users and non-transport users, and to promote a healthy natural environment.

The development of the National Networks NPS and associated Appraisal of Sustainability work is being undertaken in parallel. The DfT is responsible for the development of the NPS and AoS, and the iterative nature of the process will ensure that sustainability issues identified within the AoS should be taken into account in NPS development where relevant.

1.3.1 Purpose of this Scoping Report

The purpose of this report is to set out the scope and level of the information that will be included within the AoS Report, which will be the primary output of the AoS process. The preparation of this document has aided the identification of the sustainability issues relevant to the development of the National Networks NPS, and the development of an AoS Framework, against which the NPS will be assessed. This Scoping Report also reports on the tasks that were undertaken during the scoping

[7] ODPM (2005) Sustainability Appraisal of Regional Spatial Strategies and Local Development Documents, TSO, UK. URL: http://www.communities.gov.uk/documents/planningandbuilding/pdf/142520.pdf
[8] WCED (1987) *Our Common Future*, World Commission on Environment and Development

stage, such as the review of relevant plans, policies and programmes, and the collation of sustainability baseline data. Therefore, this report provides information on:

- Other relevant plans, policies and programmes and their sustainability objectives;
- Baseline information;
- Sustainability issues identification;
- AoS framework for appraising the likely significant effects arising from the National Networks NPS;
- Consultation undertaken, and planned future consultation; and
- Proposed structure and level of detail of the final Appraisal of Sustainability Report.

This report has been written in the absence of a fully worked up NPS draft and, in developing the AoS, the approach outlined will probably need to be refined and revised to ensure that it is appropriate to the evolving NPS draft. This could include developing a framework against which the impact of policy options can be forecast in order to assess the sustainability of NPS policies and their alternatives.

1.3.2 AoS Scoping Methodology

The tasks undertaken in the Scoping Stage of the Appraisal of Sustainability are set out inFigure 4.. The key stages undertaken were therefore:

- Identifying relevant policies, plans and programmes, and undertaking a review of these documents;
- Identifying and collating relevant sustainability baseline data
- Identifying key sustainability issues. This was followed by the development of objectives, indicators and targets to form the AoS Framework;
- Consultation with Statutory Environmental Bodies (and other key stakeholders); and
- Preparation of an AoS Scoping report.

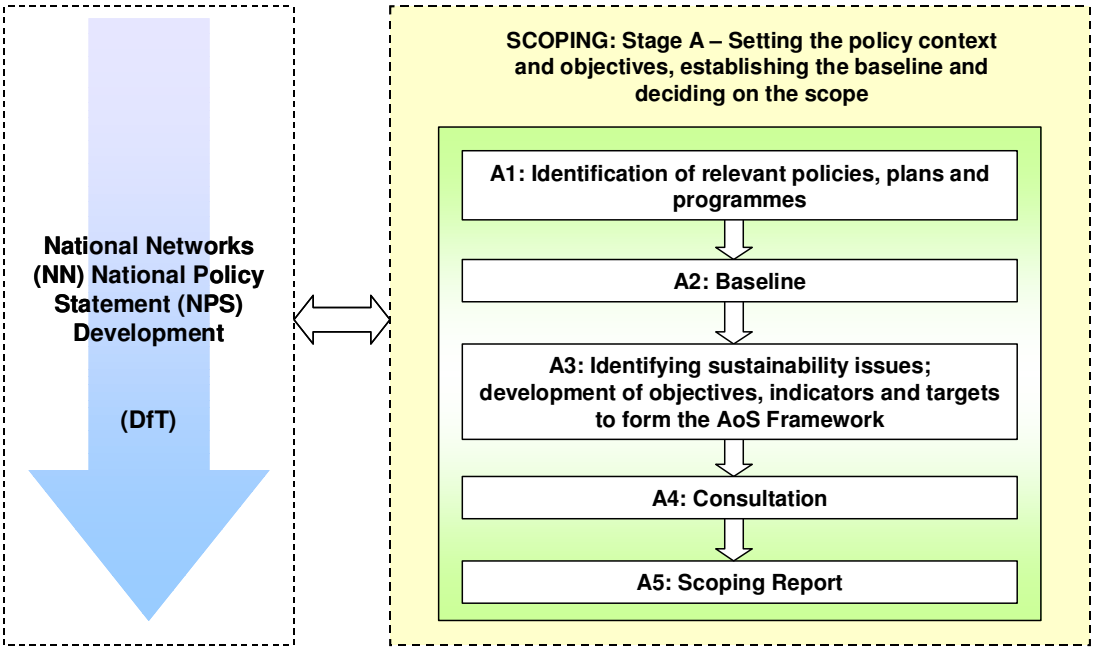

Figure 4: Scoping Stage – Appraisal of Sustainability of the National Networks NPS

1.3.3 NATA and AoS

The NPS will set out a requirement for the IPC to use the New Approach to Transport Appraisal (NATA) when making planning decisions about schemes/projects on the National Networks. NATA is the analytical framework used to appraise the economic, environmental and social aspects of all

transport proposals that require DfT funding or approval, and will enable the IPC to set out the key benefits and disbenefits of a scheme against the Government's objectives and sub-objectives for the economy, environment, accessibility, integration and safety[10]. Guidance on the NATA approach and the conduct of transport studies is provided on WebTAG (Transport Analysis Guidance)[11].

The IPC will need to make two main judgements, based on the evidence put before it. These will be:

- Is the proposed scheme consistent with the NPS?
- What are the local impacts and how do they weigh against the benefits (relevant to the NPS)?

The strategic national need will be established by the NPS, through its setting out of the national policy context for national networks, the exposure of problems and issues on strategic corridors, and the discussion at a high level of preferred interventions where appropriate. The IPC must then satisfy itself that the case for any specific intervention is not outweighed by considerations at the local level.

This Scoping Stage of the AoS has therefore considered the NATA objectives and guidance in developing the AoS Framework and Objectives (See Chapter 5). AoS objectives have been ordered according to NATA objectives in order to show the relationship between them. This approach differs slightly to that taken for the AoS of other NPSs, as NATA is not the relevant appraisal framework used in other sectors (e.g. Ports).

The NATA Objectives and Sub objectives are set out in Table 1. DfT is conducting an update of the NATA appraisal framework, which will seek to align it with the DaSTS goals, and this will therefore be subject to revision.

Table 1: NATA Objectives and Sub-objectives

NATA Objectives	NATA Sub-Objectives
ENVIRONMENT - To protect the built and natural environment	• to reduce **noise**
	• to improve **local air quality**
	• to reduce **greenhouse gases**
	• to protect and enhance the **landscape**
	• to protect and enhance the **townscape**
	• to protect the **heritage of historic resour**ces
	• to support **biodiversity**
	• to protect the **water environment**
	• to encourage **physical fitness**
	• to improve **journey ambience**
SAFETY - To reduce the loss of life, injuries and damage to property resulting from transport accidents and crime	• to reduce **accidents**
	• to improve **security**
ECONOMY - To support sustainable economic activity and get good value for money	• to get good value for money in relation to impacts on **public accounts**
	• to improve transport economic efficiency for **business users and transport providers**
	• to improve **transport economic efficiency for consumer users**
	• to improve **reliability**
	• to provide beneficial **wider economic impacts**
ACCESSIBILITY - To improve access to facilities for those without a car and to reduce severance	• to increase **option values**
	• to reduce **severance**
	• to improve **access to the transport system**
	• to improve **transport interchange**
INTEGRATION - To ensure that all decisions are taken in the context of the Government's integrated transport policy	• to integrate transport policy with **land-use policy**
	• to integrate transport policy with **other Government policies**

[10] NATA is currently subject to a refresh programme which will ultimately align it to the DaSTS Framework
[11] WebTag: http://www.webtag.org.uk/index.htm

1.3.4 Geographical and temporal scope

The spatial scope of the future appraisal of sustainability and the National Networks NPS is England. In some cases, impacts may be identified that could affect sustainability issues in neighbouring countries and in such cases the appraisal will take account of trans-boundary effects.

The temporal scales that may want to be considered within the appraisal are:

- Short term (0-5 years);
- Medium term (5-10 years);
- Long term (10-20 years); and
- Longer term (20 years+).

2 Summary of the review of relevant plans, policies and programmes

A review of relevant legal plans, policies and programmes that have the potential to influence the development of the National Networks NPS was undertaken. Such plans, policies and programmes can potentially act as constraints, for example where formal limitations, policy contexts or requirements are stated. Through undertaking the review, these constraints can be identified, as well as establishing any sustainability objectives they may contain, identifying synergies and opportunities or potential conflicts between aims, objectives and policy details.

Table 2 provides an overview of the plans, policies and programmes that were reviewed. The full review can be found in Appendix A. Plans, policies and programmes have been categorised into overarching, environmental, economic, social, and transport-specific documents. Within each category, the spatial level of relevance of the document has also been identified (International, Europe, UK, England).

Table 2: List of relevant plans, policies and programmes

Scale	Plan, Policy or Programme Reviewed
Overarching	
International	EU Rural Development Policy 2007 - 2013
	The European Spatial Development Perspective (ESDP) (European Commission, 1999)
UK	Planning Act 2008
	Planning for a Sustainable Future: White Paper (CLG, 2007)
	UK Government Sustainable Development Strategy: Securing the Future (HM Government, 2005)
	UK's Shared Framework for Sustainable Development One Future – Different Paths (HMG, 2005)
England	Natural Environment and Rural Communities Act 2006
	Planning Policy Statement 11 (Regional Spatial Strategies) (ODPM, 2004)
	Regional Development Agencies Act 1998;
	Guidance to RDAs on Regional Strategies (DTI, 2005);
	Regional Economic Strategies – BERR; Example: South East Region (SEEDA, 2006)
	PPS 1: Delivering Sustainable Development (ODPM, 2005)
	The Countryside in and Around Towns: A Vision for Connecting Town and Country in the Pursuit of Sustainable Development (The Countryside Agency/Groundwork, 2005)
	PPS 7 Sustainable Development in Rural Areas (ODPM, 2004)
	Review of the Rural White Paper – Our Countryside: The Future (DETR, 2004)
	Rural Strategy (Defra, 2004)
	Rural White Paper "Our Countryside: the Future: A Fair Deal for Rural England" (2000)
	Securing the Regions' Futures – Strengthening the Delivery of Sustainable Development in the English Regions (Defra, DTI and ODPM, 2006)
	Regional State of the Environment Reports (Environment Agency)
Environmental	
International	Environmental Liability Directive 2004/35/EC
	EU Directive on Ambient Air Quality and Management (96/62/EC) and Daughter Directives (1999/30/EC), (2000/69/EC), (2002/3/EC), (2004/107/EC)
	EU Directive on Ambient Air Quality and Management (1996/62/EC)
	EU Thematic Strategy on Air Quality (2005)
	National Emissions Ceiling Directive (2001/81/EC)
	Action Plan on Biodiversity (2006-2010)
	Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979)
	Bonn Convention on the Conservation of Migratory Species of Wild Animals (1979)
	Council Directive on the Conservation of European Wild Birds (79/406/EEC)
	Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora
	Espoo Convention on Environmental Impact Assessment in a Transboundary Context (1991)
	EU Biodiversity Strategy (EU, 1998)
	Environment 2010: Our Future, Our Choice - EU 6th Environmental Action Plan (2002 – 2012) (EU 2002)
	OSPAR Biological Diversity and Ecosystems Strategy (OSPAR, 2003)
	Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat (1971)
	UN Convention on Biological Diversity (1992)

	Directive 85/337/EEC on the Assessment of the Effects of Certain Public and Private Projects on the Environment (Environmental Impact Assessment - EIA Directive) as amended by Directive 97/11/EC
	Renewable Energy Directive (RED) and Fuel Quality Directive (FQD) both (to be published 2009)
	EU Directive for the Promotion of Bio-fuels for Transport (2003/30/EC)
	EU Emissions Trading Scheme (2005)
	Kyoto Protocol to the UN Framework Convention on Climate Change (agreed in 1997, ratified in 2005)
	2020 Climate Change and Energy Package (EC, 2008)
	Strategy on Climate Change: Control Measures Through Until 2020 and Beyond (EC, 2007)
	The UN Millennium Declaration and Millennium Development Goals (2002)
	EC Green Paper on Adaptation to Climate Change in Europe (2007)
	UN Framework Convention on Climate Change (2008)
	Directive 2001/42/EC on the Assessment of the Effects of Certain Plans and Programmes on the Environment (Strategic Environmental Assessment - SEA Directive)
	The EU Forestry Strategy (EC, 1998)
	European Landscape Convention (EC, 2000)
	EU Thematic Strategy for Soil Protection (EC, 2004)
	EU Soil Framework Directive (Proposed)
	Directive on the Landfill of Waste (99/31/EC)
	Directive on Waste (2006/12/EC)
	Hazardous Waste Directive 91/689/EEC
	Integrated Pollution Prevention and Control: IPPC Directive 96/61/EC
	EU Directive 2002/49/EC Relating to the Assessment and Management of Environmental Noise - The Environmental Noise Directive (EU, 2002)
	Guidelines for Community Noise (WHO, 2000)
	Directive 2006/7/EC Concerning the Management of Bathing Water Quality and Repealing Council Directive 76/160/EEC
	Directive on the Assessment and Management of Flood Risks (2007/60/EC)
	Drinking Water Directive (98/83/EC)
	Freshwater Fish Directive (78/659/EEC) (updated in 2006 by Directive 2006/44/EC on the Quality of Fresh Waters Needing Protection or Improvement in Order to Support Fish Life)
	Groundwater Directive (GWD) (80/68/EEC)
	"New" Groundwater Directive (GWD) (2006/118/EC)
	Recommendation of the European Parliament and of the Council of 30 May 2002, Concerning the Implementation of Integrated Coastal Zone Management in Europe (2002/413/EC)
	Shellfish Waters Directive (2006/113/EC)
	Surface Water Abstraction Directive (75/440/EEC)
	Urban Waste Water Treatment (91/271/EEC)
	Water Framework Directive (2000/60/EC)
	Environmental Quality Standards Directive 2008/105/EEC
	Nitrates Directive (91/676/EEC)
	European Convention on the Protection of the Archaeological Heritage (Valetta, 16.I.1992)
	UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (1972)
UK	Air Quality Regulations 2000 and The Air Quality (Amendment) Regulations 2002
	The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Defra, 2007)
	Conserving Biodiversity – The UK Approach (Defra on behalf of the UK Biodiversity Partnership 2007)
	PSA Delivery Agreement 27 Lead the Global Effort to Avoid Dangerous Climate Change (HM Government, 2007)
	PSA Delivery Agreement 28 Secure a Healthy Natural Environment for Today and the Future (HM Government, 2007)
	UK Biodiversity Action Plan - UK BAP (Defra, 1994)
	Wildlife and Countryside Act (England and Wales) 1981
	The Conservation (Natural Habitats, &c.) Regulations 1994
	The Commons Act 2006
	Carbon Pathways: Informing Development of a Carbon Reduction Strategy for Transport (DfT, 2008)
	Climate Change – The UK Programme 2006: Tomorrow's Climate Today's Challenge (House of Commons Environmental Audit Committee, 2006)
	Climate Change Act 2008
	Our Energy Future - Creating a Low Carbon Economy' (DTI, 2003) - UK White Paper on Energy
	Building a Low-Carbon Economy – The UK's Contribution to Tackling Climate Change. The First Report of the Committee on Climate Change (Committee on Climate Change, 2008)
	Adapting to Climate Change in England (DEFRA, 2008)
	Energy Act 2008
	Energy White Paper: Meeting the Energy Challenge (DTI, 2007)

	UK Renewable Energy Strategy Consultation (Department for Business, Enterprise & Regulatory Reform (BERR), 2008)
	Environment Act 1995
	A Better Place to Play (Environment Agency, 2006)
	Marine and Coastal Access Bill (HM Government, 2008)
	Shoreline Management Plans (SMPs) (Environment Agency)
	Draft River Basin Management Plans (Environment Agency)
	Water Strategy: Surface Water Drainage
	Water Strategy: Water Demand
	Water Strategy: Water Quality in the Natural Environment
	Water Strategy: Water Supply
	The Pitt Review: Learning Lessons from the 2007 Floods (Pitt, 2008)
	Draft Heritage Protection Bill (2008)
	Ancient Monuments and Archaeological Areas Act 1979
	Town and Country Planning Act 1990
	Clean Neighbourhoods and Environment Act 2005
	UK Government Sustainable Procurement Plan (Defra, 2007)
	Environmental Protection Act 1990
	Control of Pollution Act 1974
	Pollution Prevention and Control (England and Wales) Regulations 2000
	Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996 (SI 428)
	Noise Emission in the Environment by Equipment for Use Outdoor Regulations 2001 (SI 1701)
England	The Contaminated Land (England) Regulations 2006 (HMSO, 2006)
	Future Water, the Government's Water Strategy for England (Defra, 2008)
	PPS 6 Planning for Town Centres (ODPM, 2005)
	A Strategy for England's Trees, Woodlands and Forests (Defra, 2007)
	Delivery Plan 2008-2012 England's Trees, Woods and Forests (Forestry Commission 2008)
	PPG 2: Green Belts (ODPM, 1995, amended 2001)
	PPS 9 Biodiversity and Geological Conservation (ODPM, 2005)
	Circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System (ODPM, 2005)
	Countryside and Rights of Way Act (CRoW) (ODPM, 2000)
	Environmental Noise (England) Regulations 2006 SI 2238
	PPG 24 Planning and Noise (ODPM, 1994)
	Rural Development Programme for England 2007-2013 (Defra, 2007)
	PPS 10 Planning for Sustainable Waste Management (ODPM, 2005)
	PPS 23 Planning and Pollution Control (ODPM, 2004)
	Waste Strategy for England (Defra, 2007)
	PPS 1: Planning and Climate Change – Supplement to PPS 1 (ODPM, 2007)
	PPS 22 Renewable Energy (ODPM, 2004)
	PPG 14 Development on Unstable Land (Department of the Environment, 1990)
	A Strategy for Promoting an Integrated Approach to the Management of Coastal Areas in England (Defra, 2008)
	Making Space for Water: Taking Forward a New Government Strategy for Flood and Coastal Erosion Risk Management (Defra, 2005)
	PPG 20 Coastal Planning (Department of the Environment, 1992)
	PPS 25 Development and Flood Risk (Communities and Local Government, 2006)
	Heritage Protection for the 21st Century: White Paper (DCMS, 2007)
	PPG 15 Planning and Historic Environment (Department of the Environment and Department of National Heritage September 1994)
	PPG 16 Archaeology and Planning (ODPM, 2006)
	Planning (Listed Buildings and Conservation Areas) Act 1990
Economic	
International	Internalisation of Transport External Costs (EC, 2008)
	Integrated Guideline for Growth and Jobs 2008-11, Commission of the European Communities (Committee on Economic and Monetary Affairs, 2007)
UK	Towards a Sustainable Transport System (TaSTS): Supporting Economic Growth in a Low Carbon World (DfT, 2007)
	The Eddington Transport Study (Eddington, 2006)
	Office of Government Commerce Policy on Value for Money
	Stern Review of the Economics of Climate Change (Stern, 2007)
	Treasury Green Book (HM Treasury, 2003) CSR (2007)
	2004 Spending Review: Final report on the Efficiency Programme (HM Treasury, 2008)
	Operational Efficiency Programme: Prospectus (HM Treasury, 2008)
	Planning for Economic Development (ODPM, 2004)

	PSA Delivery Agreement 1: Raise the Productivity of the UK Economy (HM Government, 2007)
	PSA Delivery Agreement 5: Deliver Reliable and Efficient Transport Networks that Support Economic Growth (HM Government, 2007)
	PSA Delivery Agreement 6: Deliver the Conditions for Business Success in the UK (HM Government, 2007)
	PSA Delivery Agreement 7: Improve the Economic Performance of all English Regions and Reduce the Gap in Economic Growth Rates Between Regions (HM Government, 2007)
	UK Trade Policy
	UK and EU Industry Policy
England	Good Practice Guide on Planning for Tourism which should be used instead of PPG 21 (Department for Communities and Local Government (DCLG), 2006)
Social	
International	Children's Environment and Health Action Plan for Europe (CEHAPE) 2004
	Aarhus Convention (Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters) (1998)
	Health Effects of Transport-Related Air Pollution (WHO, 2005)
	Transport, Environment and Health (WHO, 2000)
	Council Directive 2000/78/EC: Establishing a General Framework for Equal Treatment in Employment and Cooperation – EU Directive for an Employment Equality Framework
	Council Directive 2000/43/EC: Implementing the Principle of Equal Treatment Between Persons Irrespective of Racial or Ethnic Origin – EU Directive for a Race Quality Framework
	Collaboration Between the Health and Transport Sectors in Promoting Physical Activity (WHO, 2006)
	Joint Report on Social Protection and Social Inclusion (Council of European Union, 2008)
	Together for Health: A Strategic Approach for the EU 2008 – 2013 (European Union, 2007)
UK	The Disability Discrimination Act (DDA) 1995
	The Race Relations Act 1976 and the Race Relations Amendment Act 2000
	The Human Rights Act 1998
	Health Inequalities, Progress and Next Steps (Department of Health, 2008)
	Education and Skills – Delivering Results (Department for Eduation and Skills, 2002)
	Sustainable Development Action Plan for Education and Skills (Department for Education and Skills, 2003)
	PSA Delivery Agreement 12: Improve the Health and Wellbeing of Children and Young People (HM Government, 2008)
	PSA Delivery Agreement 13: Improve Children and Young People's Safety (HM Government, 2008)
	PSA Delivery Agreement 14: Increase the Number of Children and Young People on the Path to Success (HM Government, 2008)
	PSA Delivery Agreement 15: Address the Disadvantage that Individuals Experience Because of their Gender, Race, Disability, Age, Sexual Orientation, Religion or Belief (HM Government, 2007)
	PSA Delivery Agreement 17: Tackle Poverty and Promote Greater Independence and Wellbeing in Later Life (HM Government, 2007)
	PSA Delivery Agreement 18: Promote Better Health and Wellbeing for All (HM Government, 2007)
	PSA Delivery Agreement 20 Increase Long Term Housing Supply and Affordability: (HM Government, 2007)
	PSA Delivery Agreement 21: Build More Cohesive, Empowered and Active Communities (HM Government, 2007)
	PSA Delivery Agreement 22: Deliver a Successful Olympic Games and Paralympic Games with a Sustainable Legacy and Get More Children and Young People Taking Part in High Quality PE and Sport (HM Government, 2007)
	PSA Delivery Agreement 23: Make Communities Safer (HM Government, 2007)
	PSA Delivery Agreement 25: Reduce the Harm Caused by Alcohol and Drugs (HM Government, 2007)
	PSA Delivery Agreement 26: Reduce the Risk to the UK and its Interests Overseas from International Terrorism (HM Government, 2007)
	Every Child Matters (DfES, 2003)
	Delivering Choosing Health: Making Healthier Choice Easier (Department of Health, 2004)
	Child Road Safety Strategy (DfT, 2007)
	Young People and Transport: Understanding their Needs and Requirements (DfT, 2006)
	Older People: Their Transport Needs and Requirements (DfT, 2001)
	Tackling Health Inequalities – A Programme for Action 2003 (Including the 2007 Status Report on the Programme for Action) (Department of Health, 2003 & 2007)
	Working for a Healthier Tomorrow –(Dame Carol Black's Review of the Health of Britain's Working Age Population, 2008)
	Equality Act (2006)
	Opportunity Age: Meeting the Challenges of Ageing in the 21st Century (HM Government, 2005)
	Cutting Crime: A New Partnership 2008-2011 (Home Office, 2007)

	Sustainable Communities: Building for the Future (ODPM, 2003)
Transport	
International	European Transport Policy for 2010: A Time to Decide (EC, 2001)
	Freight Logistics - The Key to Sustainable Mobility (EU, 2006)
UK	White Paper - Delivering a Sustainable Railway (DfT, 2007)
	Local Transport Bill (2008)
	Railways Act 2005
	10 Year Transport Plan (DfT, 2000)
	Sustainable Distribution: A Strategy (DfT, 1999)
	Delivering a Sustainable Transport System (DaSTS) (DfT, 2008)
	Delivering a Sustainable Transport System - Consultation on Planning for 2014 and Beyond (DfT, 2008)
	Delivering A Sustainable Transport System: The Logistics Perspective (DfT, 2008)
	DfT Sustainable Development Action Plan (2007 and 2008)
	Road Safety Act 2006
	The Future of Transport White Paper – A Network for 2030 (DfT, 2004)
	Building Sustainable Transport into New Developments (DfT, 2008)
	The Gallagher Review of the Indirect Effects of Biofuels Production (Renewable Fuels Agency, 2008)
	2007 No. Transport Energy Sustainable and Renewable Fuels: The Renewable Transport Fuel Obligations Order 2007
	New Approach To Appraisal (NATA) (DfT, 1999 onwards) and Webtag Guidance (DfT, 2003)
	PPG 13 Transport (DfT, 2001)
	Review of Community Rail Development Strategy (DfT, 2004)
	The Case for Rail 2007 The First Sustainable Development Review of the Mainline Railways of Great Britain (Rail Safety and Standards Board, 2007)
	The Rail Industry - A Way Forward on Sustainable Development (Rail Standards and Safety Board, 2006)
	Rail Industry Sustainable Development Current & Potential Further Action Areas (Rail Standards and Safety Board)
	Developing Metrics and Benchmarking for Sustainable Development in the Rail Industry (Rail Safety and Standards Board, 2007)
	Overview of Environmental Noise, Diffuse Pollution and Biodiversity Management in the Great Britain (GB) (Rail Safety and Standards Board, 2007)
	ORR'S Sustainable Development & Environmental Duties (Office of Rail Regulation, 2007)
	Corporate Responsibility Report 2007/08 Delivering for You (Network Rail, 2008)
	Achieving Sustainability The Highways Agency's Sustainable Development Action Plan 2007-08 (Highways Agency, 2007)
	The King Review of Low-Carbon Cars (HM Treasury 2008)
	The Government Response to the King Review of Low-Carbon Cars (2008)

3 Environmental, Economic, Social and general baseline characteristics

This section focuses on the environmental, economic, social and general baseline characteristics relevant to the AoS and National Networks NPS. Data on a range of key indicators relating to environmental, social and economic indicators have been identified and collated.

Indicators have been used as a way of collating relevant baseline data – this will ensure that the data collection being carried out is both focused and effective. This task has been undertaken at the same time as the review of other relevant plans, policies and programmes, and the identification of sustainability issues. Indicators have therefore been selected for their ability to provide objective data that will offer insight into the trends taking place over time. Through the assessment process, a number of issues may be addressed, including the following:

- What is the current situation, including trends over time?
- How far is the current situation from thresholds or objectives?
- Are particularly sensitive or important elements of the environment, economy or society affected?
- Are the problems of a large or small scale, reversible or irreversible, permanent or temporary, direct or indirect nature?
- How difficult would it be to prevent, reduce or compensate for any negative effect?
- Has there been, or will there be any significant cumulative or synergistic effects over time?

The collated baseline therefore provides an overview of the environmental, social and economic characteristics of the National Networks NPS area (England). The full baseline can be found in Appendix B. The data presented here have been identified at the highest level. Some of these data might not be utilised in the subsequent stages of the AoS as it provides general contextual information only – although it has been used to inform the identification and development of key sustainability issues during this stage. It is also possible that further specific baseline data will require collation during the next stage of the AoS, to inform the appraisal of the proposals of National Networks NPS. Data/indicators have been collated and analysed for the datasets listed below.

Noise	• LAeq Noise level by region (day/night) • LAeq noise level by land use category • Proportion of population in LAeq noise bands
Air quality	• Air Quality Management Areas (AQMAs) • Air pollution emissions – CO, VOCs, PM_{10}, NO_X, SO
Greenhouse Gases	• Greenhouse Gases – CO_2, N_2O, SF6, PFCs, HFCs. • Sector contributions to GHG • Regional distributions of net GHG emissions
Climatic Factors	• Mean annual temperature and rainfall
Landscape & Seascape	• National Parks • Areas of Outstanding Natural Beauty • Heritage Coasts • Landscape Character • Tranquillity • Light pollution • Local areas of importance – e.g. country parks and woodland parks
Cultural Heritage including Architectural and archaeological Heritage	• World Heritage Sites • Scheduled Monuments • Historic Battlefields • Registered Parks and Gardens • Areas of Archaeological Importance • Listed Buildings

Biodiversity	• Special Protection Areas (including potential sites pSPAs) • Special Areas of Conservation (including candidate sites (cSACs) • Ramsar Sites • National Nature Reserves • Sites of Special Scientific Interest • Areas of Ancient Woodland Sites • Biosphere Reserves • Local Nature Reserves • Species and Habitats of Principal Importance for conserving biodiversity in England.
Geological Assets	• Limestone Pavement Orders • Location of Geological SSSIs/ASSIs • Geoparks
Water	• Chemical and Biological Water Quality • River Lengths with High Phosphate Levels • River Lengths with High Nitrate Levels • Bathing Water Quality • Downstream Water Quality for EQS list 1 Substances • Abstractions complying with Surface Water Abstraction Standards • Freshwater Fish Directive Sites • Water supply-demand balance - % surplus/deficit • Household Water Use • Abstraction from Freshwater
Flooding	• Location of Fluvial and Tidal Floodplains • River Flood levels in England • Number of properties at risk from flooding
Soil	• Soils lost to development
Land	• Land Use • Previously Developed Land by Planning Status • Main Contaminants at Reported Contaminated Land Sites • Land Pressures
Waste	• Municipal Waste Arising • Management of Municipal Waste
Energy	• Energy Consumption by Sector
Material Assets	• Location of Strategic Rail Links • Location of Strategic Road Network (Motorways and Trunk Roads) • Location of Airports • Location of Ports
Population	• Population • Location of Major Settlements • Ethnic Background • Faith • Working age with disabilities
Health and Wellbeing	• Life Expectancy • Healthy Life Expectancy • Standardised Mortality Ratio • Infant Mortality • General Health of the Population • Well-being • Use of Healthy Modes of Transport • Participation in Regular Sporting Activities • Obesity (including childhood) • Physical Activity
Accidents	• Road casualties (including fatalities)

	• Rail fatalities
Crime and Fear of Crime	• Fear of Crime • Number of Recorded Crimes
Access to the transport System	• Trips by main mode • Journey Purpose • Bus Availability • Access to a Car • Public Transport Use • Concessionary Travel • Travel Demand Roads/Rail/Ports
Access to Services	• Access to Key Services • Average Time Taken to Travel to Work • Trips to leisure/social events • Location of Nature Trails
Economy	• Age Structure – Working Population • Unemployment • Employment • Ethnic Minority Employment • Economically Inactive • Economic Activity Rates • Job density • Average Earnings by Residence
Equality	• Childhood Poverty • Young Adults not in Education, Employment or Training • Skills and Training • Pensioner Poverty • Health Inequality • Environmental Equality • Average Property Vales • Affordable Housing • Household Growth • Derelict Land Available for Housing • Percentage of Households Satisfied with the area they live in • Homelessness
Social Exclusion	• Indices of Multiple Deprivation

4 Key Sustainability Issues

Through the review of relevant plans, policies and programmes and the collation of sustainability baseline data, a range of key sustainability issues that could be addressed by or affect the content of the National Networks NPS were identified. The key sustainability issues identified are discussed in more detail in the following sections. The opportunities to address these key issues within the AoS and/or the NPS are then displayed in Table 3. There is no priority between issues and for the purposes of this exercise; key issues have been grouped by sustainability topic.

DaSTS is the Government's formal consultation on the challenges that will need to be addressed in the delivery of transport on all networks over the medium to long term. DaSTS sets out a range of goals and challenges, including those specifically related to National Networks. DaSTS challenges, where relevant, have been identified within the key sustainability issues.

4.1 Key Environmental Sustainability Issues

4.1.1 Key Issue 1: Air Quality[12]

Air pollution currently reduces the life expectancy of every person in the UK by an average of 7-8 months. Poor air quality also has negative impacts on our environment, both directly in terms of vegetation and indirectly through effects on the nutrient status of soils and water. The combustion of fossil fuels contributes to the emission of a range of primary pollutants, including NO_X, VOCs, CO, SO_X and particulate matter (PM_{10} &$PM_{2.5}$). Secondary pollutants, such as ozone and the majority of the NO_2 in the atmosphere are subsequently formed as a result of atmospheric chemistry. Emissions of NO_X, PM_{10} (and increasingly $PM_{2.5}$) and benzene are relevant to road transport, while emissions of SO_X are relevant for rail (although becoming less so). Secondary emission impacts may also arise from increases in the amount of traffic accessing the network (from non-national roads).

The new EU Air Quality Directive adopted in June 2008 sets out a requirement for EU Member States to ensure that air quality limit values for a range of air pollutants are not exceeded. These legally-binding targets are closely mirrored by a national set of objectives, detailed in the UK's Air Quality Strategy (July 2007). Where air quality targets are not being met, Local Authorities (LAs) are required to declare Air Quality Management Areas (AQMAs). Approximately 200 AQMAs have been declared by LAs in England alone. The majority of these have been declared for exceedences of the NO_2 and PM_{10} objectives mainly due to road transport emissions. The sources of emissions are either local authority roads, or the strategic road network[13].

4.1.2 Key Issue 2: Greenhouse Gas (GHG) Emissions

A good transport system is essential for sustaining economic growth. However, as people become more prosperous they tend to consume more and travel in ways that emit more greenhouse gases. The UK has a legally-binding target under the Kyoto Protocol, to cut the emissions of a basket of six greenhouse gases to, on average, 12.5% below 1990 levels, between 2008 and 2012. The Climate Change Act 2008 has committed the UK Government to addressing both the causes and consequences of climate change. The Act sets the Government a domestic target to reduce the UK's Greenhouse Gas (GHG) emissions, by at least 80% below 1990 levels by 2050. The Act also introduces a system of carbon budgets, to set the trajectory towards the longer term target. Carbon budgets will limit greenhouse gas emissions over consecutive five-year periods, with three budgets set at any one time. The first three carbon budgets will cover 2008-12, 2013-17 and 2018-22, and the Act requires that they be set by 1 June 2009.

The main component of transport's GHG emissions is carbon dioxide (CO_2) however; two of the other six Kyoto greenhouse gases are also emitted by transport, nitrous oxide (N_2O) and methane (CH_4). N_2O is emitted due to the use of catalytic converters and CH_4 is released from some fuel combustion.

[12] Air Quality Framework Directives (96/62/EC); EU Directive on ambient Air Quality and Management (1996/62/EC); EU Thematic Strategy on Air Quality; The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007); PPS23 – Planning and Pollution Control; PSA Delivery Agreement 28: Secure a healthy natural environment for today and the future
[13] The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)

4.1.3 Key Issue 3: Climatic Factors and Adaptation[14]

The Planning Act requires the NPS to have regard to the desirability of mitigating and adapting to climate change. Climate changes such as increasing temperatures and extreme weather events (e.g. intense rainfall, severe storms, gales and heat waves) are likely to increase the risk of flooding, landslides, fires etc. These in turn will have significant impacts on road and rail networks with implications for costs, safety and reliability of services. Predicted impacts include damage to road and rail infrastructure; disruption of transport activities that are important to national supplies (and travellers); disruption to the availability of energy and other resources; and changes in the demand for transport as a result of changes in the distribution of urban and rural settlements in the long term. Some opportunities may arise too, for example maintenance and repair savings resulting from a decrease in the number of days of frost and snow.

It is important that transport networks are designed, developed and maintained in ways that take account of the above-anticipated risks in order to build resilience to climate change impacts. The Climate Change Act 2008 establishes a statutory framework for the UK to reduce emissions and adapt to climate change. This will help meet Public Service Agreement 27: leading the global effort to avoid dangerous climate change to 'develop a robust approach to domestic adaptation to climate change, shared across Government'.

4.1.4 Key Issue 4: Flood Risk[15]

Development of rail and road infrastructure can lead to increased risk of coastal, fluvial and surface water flooding of the local environment and the national network infrastructure itself. This risk is likely to increase over time with the expected impacts from climate change. Therefore such infrastructure should strive to be resilient to flooding. It is particularly important to site national network infrastructure away from areas at risk from flooding in order to minimise flood risk, and put measures in to place to adapt to the probable impacts of climate change. Although national networks have the potential to increase flood risk (e.g. through using cuttings, increases in hardstanding, earthworks), their ability to potentially reduce flood risk, for example, with embankments, should also be acknowledged.

4.1.5 Key Issue 5: Contamination of Water Resources[16]

The diffuse pollution of water is a widespread problem and action to tackle it is required throughout England. Diffuse water pollution arises from many sources, for example agriculture. Although agriculture is one of the main sources of diffuse pollution, run-off from roads can introduce a variety of pollutants, including fuel oils and seasonal road treatments, to nearby water sources though diffusion.

4.1.6 Key Issue 6: Water Resources[17]

Water is a precious natural resource and its sustainable management is essential to protect the water environment and to meet current and future demand. Population, household size and growth and affluence all affect how much water we use. Factors such as climate change are also likely to put supplies under greater pressure in the future, making it important that we manage water supplies effectively.

There is increasing pressure on water supply brought about by changes in societal demand, population increase, changing household patterns and by climate change. As such, it is vital that water resources are managed and protected. Development of rail and road infrastructure can lead to an adverse impact on water resources. This is a particularly significant issue in areas of water stress, such as southeast England.

[14] Kyoto Protocol to the UN Framework Convention on Climate Change; Climate Change Act (2008); Planning and Climate Change (Supplement to PPS1, 2007); PPS22 – Renewable Energy (2004); PSA Delivery Agreement 27: Lead the Global effort to avoid dangerous climate change
[15] Directive on the Assessment and Management of Flood Risks (2007/60/EC); PPS25 – Development and Flood Risk (2006); The Pitt Review: lessons learned from the 2007 floods (2008)
[16] Water Framework Directive (2000/60/EC); Groundwater Directive (2006/118/EC)
[17] Directive concerning the management of bathing water quality (2006/7/EC); Drinking Water Directive (98/83/EC); PPS23 – Planning and Pollution Control; PSA Delivery Agreement 28: Secure a healthy natural environment for today and the future

4.1.7 Key Issue 7: Biodiversity[18]

Existing, extended and new road and rail infrastructure may be detrimental to biodiversity, either directly through destruction or damage to habitats and species, or indirectly, e.g. air pollution, noise disturbance etc. Road and rail infrastructure can also eliminate or severely degrade movement corridors for certain organisms, which are often essential for maintaining biodiversity in the UK. Conversely transport corridors can also provide for the spread of organisms through them by their linear nature.

There are currently 78 Special Protection Areas (SPAs), 228 Special Areas of Conservation (SACs), 93 SACs with marine components, 66 designated Ramsar (wetland) sites, 222 National Nature Reserves (NNR), over 4,000 SSSIs, 1 Marine Nature Reserve (MNR), over 22,000 ancient woodland sites, 3 biosphere reserves, and over 1,280 Local Nature Reserves (LNR) in England. Compliance with the provisions of the Habitats Directive and Wild Birds Directive will ensure that impacts on SPAs, pSPAs, SACs and are considered. The Government's policy is also that Ramsar Sites not incorporated in *Natura 2000* should also be subject to protection.

4.1.8 Key Issue 8: Soil and Land Resources[19]

Soil is a fundamental and irreplaceable natural resource, providing the essential link between the components that make up our environment. Contaminants may be present naturally, and often they result from human industrial and domestic pollution. In most cases, levels of contaminants are sufficiently low that there is no appreciable risk. However, sometimes there can be significant risks to people or the environment. It is only when such risks exist that land is considered to be “contaminated land”.

Land may become contaminated through road and rail use – fuel and oil spills, and seasonal road treatment from the road sector and the coolants/hydraulic oils used in engines, de-icing fluid on tracks and fuel spills by the tracks from the rail sector. Waste oils and toilet waste (on tracks for older trains) and litter (stations and trains) are also an issue for railways.

4.1.9 Key Issue 9: Waste Generation and Resource Use[20]

Defra’s Waste Strategy for England (2007[21]) highlights that current consumption of natural resources in the UK is at an unsustainable rate. The primary aim of the strategy is to reduce waste by using fewer natural resources, re-using materials or recycling them where possible. In addition to environmental benefits, this approach is likely to reduce costs from the reduction in use of natural resources and the reduction of waste treatment and disposal costs. Infrastructure and associated development are a possible source of waste from construction. Sleeper and ballast waste is an issue for railways.

The EU Waste Directive establishes a framework for the management of waste across the European Community. The directive will require waste prevention to be given priority and the encouragement of waste re-use and recovery, the preparation of waste management plans ·and the assurance that waste is recovered or disposed of without endangering human health.

4.1.10 Key Issue 10: Landscape and Townscape[22]

NATA emphasises that ‘Landscape’ means more than just 'the view'. It is both the physical and cultural (including its use and management) characteristics of the land itself and the way in which we perceive those characteristics. It is this mix of characteristics and perceptions that make up and contribute to landscape character and give a "sense of place".

[18] Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive) (92/43/EEC); Directive on the Conservation of Wild Birds (79/409/EEC); Water Framework Directive (2000/60/EC); Ramsar convention on Wetlands of International Importance; EU Biodiversity Strategy; Conserving Biodiversity – The UK Approach (2007); Defra - UK Biodiversity Action Plan (1994); PPS9 – Biodiversity and Geological Conservation (2005); PSA Delivery Agreement 28: Secure a healthy natural environment for today and the future
[19] EU Thematic Strategy for Soil Protection; EU Soil Framework Directive (proposed)
[20] Directive on Waste (2006/12/EC); Defra - Waste Strategy (2007); PPS10 – Planning for Sustainable Waste Management (2005)
[21] Defra (2007) Waste Strategy for England 2007, Available from www.defra.gov.uk/environment/waste/strategy.
[22] European Landscape Convention; PPG2 – Greenbelts (2001); Countryside Rights of Way Act (2000); HA - Assessing the Effect of Road Schemes on Historic Landscape Character (2007); ; DEFRA Noising Map

The physical characteristics of a 'Townscape' are expressed by the development form of buildings, structures and spaces. The development form influences the pattern of use, activity and movement in a place and the experience of those who visit, work and live there. The social characteristics of a townscape are determined by how the physical characteristics (i.e. buildings, structures and open spaces) are used and managed. For example, the character and value of a pedestrianised square in a town or city centre is very different to a square that has not been pedestrianised.

It is sometimes difficult to distinguish the boundaries between townscape and landscape and between townscape and heritage. It is often the success of the interaction between all three that determines how well a place works. NATA therefore recommends that the impacts of a transport proposal on all three (landscape, townscape and heritage) should therefore be appraised, recognising the interplay where appropriate.

Transport and associated infrastructure can introduce light (and noise which will be addressed later) into otherwise rural areas and/or tranquil areas, having an impact on the overall landscape and its character. Databases have been compiled on Historic Landscape Characterisation (HLC), which are used to inform planners, developers and decision-makers of the particular sensitivities and capacities for change in historic landscape types. Areas of greenbelt are also at risk from future development.

There are a range of designations considered to be important related to landscape, which include National Parks, Country Parks, Areas of Outstanding Natural Beauty (AONBs) and Heritage Coasts. In England there are currently 8 National Parks, 270 Country Parks and 35 AONBs. England also has 32 heritage coasts (covering 33% of the coastline).

There are often strong links between landscape and biodiversity, due to landscape-designated areas providing habitats (including rare and protected) for various species which are also potentially rare and protected.

4.1.11 Key Issue 11: Noise[23]

Noise annoyance is defined by the World Health Organisation (WHO) as 'a feeling of displeasure evoked by noise'. The UK has well-established procedures for assessing the nuisance to people caused by road and rail traffic-related noise and vibration. These procedures have been developed from surveys of the impacts of noise from transport on people, including dissatisfaction, annoyance and disturbance.

54% of the UK population experience daytime levels above WHO recommended level of 55dBL_{Aeq} and 67% of UK population experience nighttime levels above WHO recommended level of 45dBL_{Aeq}.

Exposure to transport noise remains a serious problem in the UK, in particular road traffic noise. Road noise is the most prevalent cause of annoyance, sleep disturbance and related human health issues. Railway noise is less of an issue but it is, nevertheless, disturbing for those who live or work close to railway lines.

4.1.12 Key Issue 12: Historic Environment[24]

NATA describes the man-made historic environment ('heritage', or heritage resource, heritage assets) as comprising:

- Buildings (individually or in association) of architectural or historic significance;
- Areas, such as parks, gardens, other designed landscapes or public spaces, remnant historic landscapes and archaeological complexes; and
- Sites (e.g. ancient monuments, places with historical associations such as battlefields, preserved evidence of human effects on the landscape, etc.).

Heritage also includes the sense of identity and place, which the combination of these features provides.

[23] EU Directive relating to the Assessment and Management of Environmental Noise (The Environmental Noise Directive) (2002/49/EC); WHO Guidelines for Community Noise (2000); PPG 24: Planning and Noise; DEFRA Noising Map

[24] UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (1972); PPG 16 - Archaeology and Planning; PPG 15 - Planning and the Historic Environment (1994); DCMS - *Heritage Protection for the 21st Century*, 2007; PPS 1: Delivering Sustainable Development; Ancient Monuments and Archaeological Areas Act 1979; Planning (Listed buildings and Conservation Areas) Act 1990

The characteristics of heritage may be commonplace and contribute to local identity, being representative of the distinctiveness of an area. They may also be significant due to their rarity, exemplary form or style, or historical associations. Appreciation of characteristics can change with time (e.g. recent listing of post-war buildings), and trends in character and identity of the heritage should be taken into account during its appraisal.

There are 16 World Heritage Sites, 19,711 Schedule Monuments, 43 English Battlefields identified by the English Heritage Register of Historic Battlefields, 1,595 Registered Parks and Gardens, 5 Areas of Archaeological Importance and 373,315 Listed Buildings in England. Depending on their location both traffic and the construction of new transport infrastructure may have negative impacts on historic assets.

4.2 Key Economic Sustainability Issues

4.2.1 Key Issue 13: Employment, Regeneration and Local/ Regional Development[25]

Improved transport systems and services can extend the catchment areas for business, retail centres and provide wider labour markets for employers and workers. Employment opportunities can be improved through better matching of skills to jobs and better access to a wider employment market.

Regeneration can be supported by transport by making locations more accessible, particularly by sustainable transport modes. Good transport links are an important consideration for developer investment, providing easier access to consumers and employees.

However, changes in accessibility can also reduce economic activity in some areas, with concentration of service or product supply, eroding local markets.

4.2.2 Key Issue 14: Productivity Growth across the Economy[26]

Consideration of impacts on journey times has been a standard part of appraisal for some time. These also tend to be a substantial component of benefits of transport interventions. Reliable and efficient transport links can support productivity and competiveness. The Eddington Transport Study highlighted potential gains from 'agglomeration economies' where firms and workers benefit from being located close together. Where firms and workers have good access to each other they are likely to benefit from easier access to suppliers, better functioning labour markets, and the sharing of knowledge and expertise. Productivity gains that result from agglomeration may help to support the provision of world-class products and services. Improving transport links for workers, businesses, and goods transport may therefore improve productivity and our international competitiveness.

Congestion and unreliable journey times can have a major cost on transport operations, businesses, service providers and individuals and can constrain the growth of productivity locally, regionally and nationally (DaSTS: “there are acute congestion and crowding problems in key urban areas, on inter-urban corridors and at international gateways, for which we pay an economic price”).

4.2.3 Key Issue 15: Rural Economic Growth[27]

Strategic National Corridors may impact positively or negatively on rural economies depending on the accessibility provided to rural areas; greater accessibility can provide wider markets for local business through access over longer distances and more employment opportunities locally but it can also result

[25] PPG13 Transport (2001); PPS1: Delivering Sustainable Development (2005); Securing the Regions’ Futures – Strengthening the Delivery of Sustainable Development in the English Regions (2006); Government/ DfT 10 Year Transport Plan (2000); Review of Community Rail Development Strategy
[26] PPG13 Transport (2001); PPS1: Delivering Sustainable Development (2005); Securing the Regions’ Futures – Strengthening the Delivery of Sustainable Development in the English Regions (2006); Planning for a Sustainable Future, CLG (2007); Building Sustainable Transport into New Developments DfT (2008); Eddington Report 2006; Government/ DfT 10 Year Transport Plan (2000); Review of Community Rail Development Strategy
[27] EU Rural Development Policy (2007-2013); PPS7: Sustainable Development in Rural Areas (2004)

in the migration of local workforce to urban centres. There can also be increased competition with local industry

4.3 Key Social Sustainability Issues

4.3.1 Key Issue 16: Accessibility[28]

Accessibility to goods, services and opportunities for employment, education and recreation are fundamental to individual and communal quality of life. National networks can improve accessibility and, with the appropriate features, can reduce inequality of accessibility. Conversely where national networks are unsuitable for some users or where, via severance, they introduce physical or perceptual barriers to movement they can reduce accessibility.

4.3.2 Key Issue 17: Population[29]

Population in communities close to enhancements made to national networks may grow as a result of the better links to employment opportunities that are provided. This may lead to key services (e.g. affordable housing, education, health facilities) being inadequate to meet demand, which may impact negatively on those communities.

If national networks do not effectively serve a region of the country they may contribute to a net economic and population migration from that region. Conversely, through providing good access, national networks could positively contribute to net economic and population inward migration.

4.3.3 Key Issue 18: Equality[30]

Inequality of access can perpetuate social, economic and health inequalities between individuals, communities and regions. Population groups prone to social exclusion, including disabled people, the elderly and children may require greater assistance or specific features in the transport system if it is to be of benefit to them.

The external effects of national networks, including noise, emission of pollutants, severance and risk frequently affect locations where vulnerable groups tend to live, work and learn to a greater extent than they affect the 'average' population'. However this is in all probability, more of an issue for city and regional networks

4.3.4 Key Issue 19: Health and Well-being[31]

Even though life expectancy across the UK has been increasing, there remain health inequalities resulting from a wide variety of factors. Health issues are closely related to socio-economic conditions and the quality of people's living environment. A wide range of central and local government schemes are in place to help reduce these inequalities. Typically, inequalities are at their most extreme in inner city areas.

Increased road use generates costs to society - through noise, pollution and accidents - in the form of illness, injuries, deaths and damage to mental health and social relationships. The challenge is to promote healthy and sustainable transport alternatives to prevent the negative effects of transport systems on human health.

[28] DfT – Older people: Their transport needs and requirements; DfT – Young people and transport: Their transport needs and requirements; Education and Skills – Delivering Results; Every Child Matters (2003); Joint Report on Social Protection and Social Inclusion (2008); PPG13 Transport (2001); Review of Community Rail Development Strategy; Tackling Health Inequalities – A Programme for Action (2003)
[29] Planning for a Sustainable Future (2007); Integrated Guideline for Growth and Jobs 2008-2011 (2007); Rural Strategy (2004)
[30] Integrated Guideline for Growth and Jobs 2008-2011 (2007); Tackling Health Inequalities (2003); CEHAPE (2004); Council Directive 2000/78/EC – employment equality; Council Directive 2000/43/EC – race equality; DfT – Older people: Their transport needs and requirements; DfT – Young people and transport: Their transport needs and requirements; Every Child Matters (2003); Joint Report on Social Protection and Social Inclusion (2008); Opportunity Age; WHO (2006) – health and transport sectors promoting physical activity
[31] Inequalities: Joint Report on Social Protection and Social Inclusion (2008); Tackling Health Inequalities (2003); Together for Health (2007); Working for a Healthier Tomorrow (2008). Health: CEHAPE (2004); WHO (2005) – Health effects of transport-related air pollution; WHO (2000) – Transport, environment and health.

4.3.5 Key Issue 20: Security and Safety[32]

The number of road and rail casualties has been decreasing over the past decade. Nevertheless casualties on national networks result in a significant individual, social and communal cost.

The operation of national networks needs to contribute to meeting Government targets for reducing road casualties by 2010, compared to the average numbers from 1994-98:

- a 40% reduction in the numbers of people killed or seriously injured in road accidents;
- a 50% reduction in the numbers of children killed or seriously injured; and
- a 10% reduction in the slight casualty rate, expressed as the number of people slightly injured per 100 million vehicle kilometres.

In addition to casualties, fear of risk from crashes and crime can significantly suppress trips, particularly by vulnerable users. In recent years there has been growing concern over the perceived threat of terrorist attacks on the national networks.

[32] **Accidents/Safety:** DfT Child Road Safety Strategy (2007); Reduce by 50% the number of children aged 0-15 killed or seriously injured in GB by 2010, compared to the average for 1994-1998; WHO (2000) – Transport, environment and health; Common Safety Targets will be adopted for each EU member state in 2009 under European Rail Safety Directive (2004/49/EC). **Vulnerable Users:** DfT – Older people: Their transport needs and requirements; DfT – Young people and transport: Their transport needs and requirements; Home Office (2007) – Cutting Crime

4.4 Opportunities to address Key Sustainability Issues in the AoS

Table 3 presents the opportunities to address these key issues within the AoS. These are mapped against the relevant DaSTS Challenges for National Networks.

Table 3: Key Sustainability Issues – National Networks-Related Development and Infrastructure

Key Issues / Problems	Considerations for AoS	DaSTS Challenge (National Networks)
Environmental Issues		
Key Issue 1: Air Quality	The AoS should consider: • The impacts of transport on air quality. • Requirement for the concentrations of harmful air pollutants to be *"avoided, prevented or reduced and limit values and/or alert thresholds set for ambient air pollution levels*" [Air Quality Framework Directive, 96/62/EC]. • Requirement to "*take the necessary measures to ensure compliance with the limit values*" [Air Quality Framework Directive, 96/62/EC]. • The requirement to "*take action when limit values are exceeded in order to comply with these values within the time fixed*" [Air Quality Framework Directive, 96/62/EC].	Reduce the social and economic costs of transport to public health, including air quality impacts.
Key Issue 2: Greenhouse Gas (GHG) Emissions	The AoS should consider: • Compliance with the Act [Planning Act, 2008. Part 2, section 10]: *(1) This section applies to the Secretary of State's functions under sections 5 and 6.* *(2) The Secretary of State must, in exercising those functions, do so with the objective of contributing to the achievement of sustainable development.* *(3) For the purposes of subsection (2) the Secretary of State must (in particular) have regard to the desirability of-* *(a) mitigating, and adapting to, climate change.* *(b) achieving good design.* • The duty of the Secretary of State to: • *"Ensure that the net UK carbon account for the year 2050 is at least 80%lower than the 1990 baseline*[33]*"* [Climate Change Act, 2008. Part 1, Section 1]. • Contribution to achieving carbon budgets.	Deliver quantified reductions in greenhouse gas emissions on national networks taking account of cross-network policy measures.
Key Issue 3: Climatic Factors and Adaptation	The AoS should consider: • Compliance with the Act [Planning Act, 2008. Part 2, section 10]:	Ensure national transport networks are resistant and

[33] Emissions of GHG from international aviation or international shipping do not count as emissions from sources in the UK.

Table 3: Key Sustainability Issues – National Networks-Related Development and Infrastructure		
Key Issues / Problems	**Considerations for AoS**	**DaSTS Challenge (National Networks)**
	(1) This section applies to the Secretary of State's functions under sections 5 and 6. *(2) The Secretary of State must, in exercising those functions, do so with the objective of contributing to the achievement of sustainable development.* *(3) For the purposes of subsection (2) the Secretary of State must (in particular) have regard to the desirability of-* (a) *mitigating, and adapting to, climate change* (b) *achieving good design* • Compliance with the Climate Change Act, 2008.	adaptable to shocks and impacts such as adverse weather, accidents, terrorist attacks and impacts of climate change.
Key Issue 4: Flood Risk	The AoS should consider whether road or rail infrastructure: • Would increase the risk of flooding. • Is at risk of flooding. • Can contribute to reducing flood risk through design.	Minimise the impacts of transport on the natural environment, heritage and landscape and seek solutions which deliver long-term environmental benefits.
Key Issue 5: Contamination of Water Resources	The AoS should consider: • The quality of surface and groundwater. • Sustainable drainage to improve the water quality. Requirements to: • "*Implement the necessary measures to prevent deterioration of the status of all bodies of surface water*". • "*Protect, enhance and restore all bodies of surface water*". • "*Implement the measures necessary to prevent or limit the input of pollutants into groundwater and to prevent the deterioration of the status of all bodies of groundwater*". • "*Protect, enhance and restore all bodies of groundwater*" [Water Framework Directive, 2000/60/EC. Article 4].	Minimise the impacts of transport on the natural environment, heritage and landscape and seek solutions which deliver long-term environmental benefits.
Key Issue 6: Water Resources	The AoS should consider: • The impact of infrastructure on local/regional water resources.	Minimise the impacts of transport on the natural environment, heritage and landscape and seek solutions which deliver long-term environmental benefits.
Key Issue 7: Biodiversity	The AoS should consider: • The "*preservation, protection and improvement of the quality of the environment, including the conservation of natural habitats and of wild fauna and flora*" [Habitats Directive, 92/43/EEC] • "*1. The aim of this Directive shall be to contribute towards ensuring bio-diversity through the conservation of natural habitats and of wild fauna and flora in the European territory of the Member*	Minimise the impacts of transport on the natural environment, heritage and landscape and seek solutions which deliver long-term environmental benefits.

Table 3: Key Sustainability Issues – National Networks-Related Development and Infrastructure		
Key Issues / Problems	**Considerations for AoS**	**DaSTS Challenge (National Networks)**
	States to which the Treaty applies. • *2. Measures taken pursuant to this Directive shall be designed to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest.* • *3. Measures taken pursuant to this Directive shall take account of economic, social and cultural requirements and regional and local characteristics*" [Habitats Directive, 92/43/EEC. Article 2]. • In relation to Special Areas of Conservation, "*take appropriate steps to avoid pollution or deterioration of habitats or any disturbances affecting the birds, in so far as these would be significant having regard to the objectives of this Article. Outside these protection areas, Member States shall also strive to avoid pollution or deterioration of habitats*" [Wild Birds Directive, 79/409/EEC] • The requirement to "*ensure the establishment of a register or registers of all areas lying within each river basin district which have been designated as requiring special protection under specific Community legislation for the protection of their surface water and groundwater or for the conservation of habitats and species directly depending on water*" [Water Framework Directive, 2000/60/EC – SPAs and SACs] • Biodiversity designations: ○ Special Protection Areas (Habitats Directive, UK Government). ○ Special Areas of Conservation (Wild Birds Directive, UK Government). ○ SACs with marine components. ○ Ramsar sites (Ramsar Convention 1971, UK Government). ○ National Nature Reserves (National Parks and Access to the Countryside Act of 1949; Countryside Rights of Way Act, 2000; statutory nature conservation agencies. ○ Sites of Special Scientific Interest (The Wildlife and Countryside Act 1981). • Marine Nature Reserve (The Wildlife and Countryside Act 1981; statutory nature conservation agencies). ○ Ancient woodland sites. ○ Biosphere reserves (UK Government). ○ Local Nature Reserves (local authorities).	
Key Issue 8: Soil and Land Resources	The AoS should consider: • The reduction of contamination from transportation. • Safeguarding of soil quality and quantity. • Minimising the use of previously undeveloped land.	Minimise the impacts of transport on the natural environment, heritage and landscape and seek solutions which deliver long-term environmental benefits.
Key Issue 9: Waste Generation and Resource Use .	The AoS should consider: • The use of recycled materials when constructing transport-related infrastructure. • Reusing any waste created locally. "*Member States shall take appropriate measures to encourage:*	Minimise the impacts of transport on the natural environment, heritage and landscape and seek solutions which deliver long-term environmental benefits.

Table 3: Key Sustainability Issues – National Networks-Related Development and Infrastructure

Key Issues / Problems	Considerations for AoS	DaSTS Challenge (National Networks)
	(a) First, the prevention or reduction of waste production and its harmfulness, in particular by: *(i) the development of clean technologies more sparing in their use of natural resources;* *(ii) the technical development and marketing of products designed so as to make no contribution or to make the smallest possible contribution, by the nature of their manufacture, use or disposal, to increasing the amount or harmfulness of waste and pollution hazards;* *(iii) the development of appropriate techniques for the final disposal of dangerous substances contained in waste destined for recovery;* *(b) Second:* *(i) the recovery of waste by means of recycling, re-use or reclamation or any other process with a view to extracting secondary raw materials; or* *(ii) the use of waste as a source of energy".* [Waste Directive, 2006/12/EC, Article 3]	

Key Issue 10: Landscape and Townscape	The AoS should consider:
	• The character of the landscape.
	• The preservation, protection and improvement of landscape designations:
	  • Areas of Outstanding Natural Beauty (National Parks and Access to the Countryside Act of 1949; Countryside Rights of Way Act, 2000 – regulation and protection of AONBs, ensuring the future of AONBs as important national resources).
	  • National Parks (The Wildlife and Countryside Act 1981; Environment Act 1995; Natural England/CCW).
	  • Country Parks.
	  • Geoparks (UK Authorities).
	  • Heritage Coasts (Local government authorities/English Nature/CCW).
	  • Landscape Character Areas.
		Minimise the impacts of transport on the natural environment, heritage and landscape and seek solutions which deliver long-term environmental benefits.
		
		Enhance well-being and sense of community by creating more opportunities for social contact and better access to leisure activities and the natural environment.

Key Issue 11: Noise	• The AoS should consider the effects of the National Networks (road and rail) noise on all environmental receptors, such as people and wildlife.	Reduce the number of people and dwellings exposed to high levels of noise from road and rail networks consistent with the implementation of Action Plans prepared under the Environmental Noise Directive.
Key Issue 12: Historic Character	The AoS should consider historic designations, such as World Heritage Sites, Scheduled Ancient Monuments, Historic Battlefields, Listed Buildings and Registered Parks and Gardens. • The AoS should also consider methods of delivering new capacity, where required, and their impact on the historic environment as well as opportunities for enhancement by managing traffic levels in historic areas.	Minimise the impacts of transport on the natural environment, heritage and landscape and seek solutions which deliver long-term environmental benefits.
Economic Issues		

Table 3: Key Sustainability Issues – National Networks-Related Development and Infrastructure		
Key Issues / Problems	**Considerations for AoS**	**DaSTS Challenge (National Networks)**
Key Issue 13: Employment, Regeneration and Local/ Regional Development	The AoS should consider the scope for increasing transport access to employment to regions that are disadvantaged as well as the use of sustainable transport modes for journey-to-work[34]. The AoS should also consider the impact on any local regeneration efforts. The potential for negative impacts on local economies should also be considered.	Contribute to the reduction in the gap between economic growth rates for different regions.
Key Issue 14: Productivity Growth across the Economy	The AoS should consider congestion, delays and reliability in the National Networks and the impact on the national economy, particularly on the key corridors, agglomerations and international gateways.	Reduce lost productive time on national transport networks, including maintaining or improving the reliability and predictability of journey times for business and freight.
Key Issue 15: Rural Economic Growth	The AoS should consider the impacts of National Networks on rural economies.	Contribute to the reduction in the gap between economic growth rates for different regions.
Social Issues		
Key Issue 16: Accessibility	The AoS should consider: • The access needs of all users. • The identification of severance and steps required to mitigate its effects. The AoS should consider: • Access to the national networks by sustainable modes (such as walking, cycling and bus transport). • The role of public transport travel on the national road network.	Enhance social inclusion by ensuring national transport networks are accessible and acceptable for disadvantaged people.
Key Issue 17: Population	The AoS should consider: • The impact of population change on supply and demand. • How National Networks reduce inequalities in population trends between regions.	

[34] This may primarily be an issue for city and regional networks, however there may be implications for the strategic road network near urban areas, or where enhancements may encourage long distance commuting.

Table 3: Key Sustainability Issues – National Networks-Related Development and Infrastructure

Key Issues / Problems	Considerations for AoS	DaSTS Challenge (National Networks)
Key Issue 18: Equality	The AoS should consider: • Ensure consistency with the DfT's duties under the Equality Act (2006), Disability Discrimination Act (1995,2005), Sex Discrimination Act (1975), Race Relations Act (1976, 2000) and Human Rights Act (1998). • Reduce regional inequality. The AoS should consider whether: • National Networks lead to different levels of service, levels of accessibility or costs that disadvantage vulnerable groups. • There are externalities that affect vulnerable groups more.	Enhance social inclusion by ensuring national transport networks are accessible and acceptable for disadvantaged people.
Key Issue 19: Health and Well-being	The AoS should consider: • The impact of National Networks on health inequalities. • How National Networks can impact on opportunities for active transport. The AoS should consider: • People's opportunities and living environments.	Reduce the risk of death or injury due to transport accidents. Reduce the social and economic costs of transport to public health, including air quality impacts.
Key Issue 20: Security and Safety	The AoS should consider: • How National Networks will contribute to meeting national policy targets for road casualty reduction. • Compatibility with likely EU targets for rail safety. The AoS should seek to consider: • Causes of fear among vulnerable groups and road user types. The AoS should consider: • The threat of terrorist attacks on national networks and the networks that serve them.	Reduce the risk of death or injury due to transport accidents. Reduce the social and economic costs of transport to public health including air quality impacts. Reduce vulnerability of transport networks to terrorist attacks.

5 Appraisal of sustainability framework for assessing the NPS

5.1 AoS Framework

The AoS Framework sets out the structure for the assessment, and includes a set of sustainability objectives that will be used within the appraisal process to assess the National Networks NPS. These sustainability objectives have been developed from the sustainability key issues identified in Chapter 4 and are organised around the NATA objectives and sub-objectives. The AoS Framework is set out in Table 4. It is important to note that although it is anticipated that a mixture of quantitative assessment (based on available data) and qualitative assessment will be undertaken, it is likely that qualitative assessment will play a large role in the appraisal of sustainability due to the nature of the NPS. Professional judgement based on experience will therefore be essential in undertaking the assessment.

The AoS Framework consists of the following elements:

- **NATA Objectives/Sub-Objectives:** NATA objectives and sub-objectives relevant to the NPS have been identified.

- **AoS Objectives/Sub-Objectives:** AoS objectives and sub-objectives will be the main mechanism by which the National Networks NPS will be appraised. The NPS elements will be appraised through determining the extent to which they meet the AoS objectives and sub-objectives. They have been developed through the identification of key sustainability issues and relevant NATA objectives/sub-objectives. In some-cases key sustainability issues are not addressed directly by the NATA framework – AoS objectives have been formulated and these are also included within the framework (highlighted in yellow). It is recognised that the NATA framework does not represent all relevant sustainability issues. Most importantly, issues related to equality are not well represented within NATA. It is recommended that for a number of the NATA sub-objectives, including air quality, noise and safety, the AoS should consider whether the National Networks NPS has the required safeguards to ensure that such externalities are not disproportionately experienced by Equality Target Groups (ETGs).

  For a policy option to be sustainable, it must recognise all sustainability issues, though some options, while underpinned by all issues will place more emphasis on some issues than others. Recommendations made following appraisal are therefore likely to involve the identification of trade-offs, and these trade-offs should be identified in an explicit and transparent manner for the benefit of decision-makers. Trade-offs may be between environmental/social/economic objectives or, for example, between two economic objectives.

  [*Please note: The AoS objectives should not be interpreted as being policy objectives. There will inevitably need to be trade-offs between the AoS objectives set out here. They cannot all be achieved simultaneously. Therefore these AoS objectives set a framework for assessing the sustainability of NPS policies*].

- **Relevant Key Sustainability Issue:** Highlighting the links between the AoS objectives and key sustainability issues (see Section 4).

- **Relevant to NPS:** Assessing whether the AoS objective is relevant to the scope of the NPS.

- **Covered by NATA appropriate at this level:** NATA provides detailed appraisal recommendations/techniques for strategies, plans and schemes. It is therefore likely that it will not be fully appropriate for use in the assessment of the NPS. However, relevant NATA objectives and guidance may be referred to for further information regarding the potential impacts of the NPS in the AoS.

- **Alternative Guide Questions/approach, other/indicators:** A set of alternative guide questions have been developed that should be considered when undertaking the appraisal. Judgement should be taken as to whether all questions are relevant to each NPS element being assessed.

- **Potential Data Sources:** A range of potential sources have been identified that may help answer the alternative guide questions and assist in the prediction and evaluation of the effects of the NPS. Whilst potential data sources have been identified within the AoS framework, the specific nature of the NPS may mean that further data sources may be required/identified once the NPS elements to be assessed are known, or that data sources currently identified become irrelevant.

- **Recommendations for Appraisal:** Recommendations are made as to the potential approaches that could be taken to the appraisal, including quantitative and qualitative assessment. An overview of the potential impacts is given, alongside potential assessment techniques, related to the alternative guide questions and potential data sources. Further appraisal techniques not listed here may be required/identified once the NPS elements to be assessed are known. It is anticipated that a mixture of quantitative assessment (based on available data) and qualitative assessment will be undertaken. However, due to the nature of the NPS, it is likely that qualitative assessment will play a large role in the appraisal of sustainability. Professional judgement based on experience will therefore be essential in undertaking the assessment.

Further information on the subsequent stages of the AoS process, including the appraisal, are provided in Section 7.

Table 4: AoS Framework – National Networks NPS							
NATA Objectives/ Sub-Objectives*	**AoS Objectives / Sub-Objectives**	**Relevant AoS Key Sustainability Issue (See Chapter 4)**	**Relevant to NPS Y/N**	**Covered by NATA appropriate at this level?**	**Alternative Guide Questions / approach, other / indicators** [Questions are not numbered according to priority/importance]	**Potential data sources** [Related alternative guide question/s in brackets]	**Recommendation for Appraisal** [Related alternative guide question/s in brackets]
ENVIRONMENT- To protect the built and natural environment							

Table 4: AoS Framework – National Networks NPS

NATA Objectives/ Sub-Objectives*	AoS Objectives / Sub-Objectives	Relevant AoS Key Sustainability Issue (See Chapter 4)	Relevant to NPS Y/N	Covered by NATA appropriate at this level?	Alternative Guide Questions / approach, other / indicators [Questions are not numbered according to priority/importance]	Potential data sources [Related alternative guide question/s in brackets]	Recommendation for Appraisal [Related alternative guide question/s in brackets]
To reduce **noise**	**AoS1: To contribute towards the reduction of noise levels from road and rail national networks** • *To prevent noise generation at source* • *To reduce exposure of people and dwellings to transport noise* • *To reduce exposure of wildlife to transport noise*	Noise	Yes	No	**1. Will it reduce the exposure of people and dwellings to transport noise?** **2. Will it reduce the exposure of wildlife to transport noise?** **3. Does the corridor run through zones/agglomerations?** (e.g. 250,000/ 100,000 pop)	Road transport: National Transport Model (NTM) (changes in traffic speeds/flows/composition of traffic) Rail transport: Network Modelling Framework (NMF) environmental module (changes in noise levels along relevant Strategic Routes) DEFRA Noise Mapping (http://noisemapping.defra.gov.uk) CPRE – Intrusion, tranquillity and night blight maps (www.cpre.org.uk) [1-3] Expert knowledge/judgement on the nature of the effect [1-3]	Consideration of whether the NPS policies and proposals will result in an increase in noise that will affect the amenity of areas near the strategic corridors. NPS policies and proposals may seek to reduce these impacts through the sensitive location of new roads/ railways or through the implementation of traffic demand management, or through implementation of appropriate mitigation (e/g/ noise barriers). Noise **constraint mapping** at high level could be utilised in the appraisal [1-2]. The appraisal could be done through a mixture of **qualitative assessment,** using potential data sources listed, and **quantitative assessment** [1-3].

Table 4: AoS Framework – National Networks NPS

NATA Objectives/ Sub-Objectives*	AoS Objectives / Sub-Objectives	Relevant AoS Key Sustainability Issue (See Chapter 4)	Relevant to NPS Y/N	Covered by NATA appropriate at this level?	Alternative Guide Questions / approach, other / indicators [Questions are not numbered according to priority/importance]	Potential data sources [Related alternative guide question/s in brackets]	Recommendation for Appraisal [Related alternative guide question/s in brackets]
To improve **local air quality**	**AoS2: To contribute towards improving local air quality** • *To ensure air quality limit values are not exceeded*	Air Quality	Yes	Yes, partially	**1. Will it encourage mode shift?** (i.e. to more sustainable modes and taking into consideration capacity/efficiency considerations) **2. Will it increase occupancy of vehicles?** **3. Will it reduce congestion?** **4. Will it lead to the achievement of air quality limit values?** **5. Will it reduce total vehicle kilometres?** **6. What will be the likely impacts on traffic speeds?**	Road transport: NTM (changes in traffic speeds/flows/composition) [3, 5, 6] Road transport: Highways Agency Traffic Information System (HATRIS) [3, 5, 6] Rail: NMF environmental module (changes in air pollutant emissions and damage costs along relevant Strategic Routes)[35] [Potentially 4] Location/nature of AQMAs [http://www.airquality.co.uk/archive/laqm/laqm.php] [Potentially 4] Population density [Potentially 4] Expert knowledge/judgement on the nature of the effect [1-6]	Consideration of whether the NPS policies and proposals will result in an increase in air pollutant emissions (and concentrations) that will affect the amenity of areas near to the strategic corridors. NPS policies and proposals may seek to reduce these impacts through the sensitive location of new roads/ railways or through the implementation of traffic demand management/behaviour change (e.g. mode shift, reduction vkm travelled, vehicle occupancy) [1-6] **Quantitative assessment** may be undertaken to explore the change in traffic speed/flow/composition, which could provide an indication of changes in air pollutant emissions [3, 5, 6]. **AQMA and agglomeration constraint mapping** could be utilised in the appraisal [4,5]. The appraisal could be done through a mixture of **qualitative** assessment (expert judgement) and **quantitative** assessment (using identified potential data sources) [1-6].

[35] The NMF provides very broad estimates of changes in local air quality from rail in urban areas. Without knowledge of the background level of emissions this information can be of limited value (dependent on proximity to quality thresholds).

Table 4: AoS Framework – National Networks NPS

NATA Objectives/ Sub-Objectives*	AoS Objectives / Sub-Objectives	Relevant AoS Key Sustainability Issue (See Chapter 4)	Relevant to NPS Y/N	Covered by NATA appropriate at this level?	Alternative Guide Questions / approach, other / indicators [Questions are not numbered according to priority/importance]	Potential data sources [Related alternative guide question/s in brackets]	Recommendation for Appraisal [Related alternative guide question/s in brackets]
To reduce **greenhouse gases**	**AoS3: To contribute towards the reduction of greenhouse gas emissions**	Greenhouse Gases; Climatic Change and Adaptation	Yes	Yes, Partially	**1. Is it consistent with meeting carbon budget requirements overall?** **2. Will it encourage mode shift?** (i.e. to more sustainable modes and taking into consideration capacity/efficiency considerations) **3. Will it increase occupancy of vehicles?** **4. Will it reduce congestion?** **5. Will it reduce total vehicles kilometres?** **6. What will be the likely impacts on traffic speeds?**	Road transport: NTM (changes in traffic speeds/flows/composition and estimates of CO_2 emissions) [4-6] Road transport: HATRIS [4-6] Rail: NMF environmental module (changes in CO_2 emissions along relevant Strategic Routes) [4-6 Expert knowledge/ judgement on the nature of the effect [1-6]	Consideration of whether the NPS policies and proposals will result in an increase in GHG emissions that will contribute to impacts of climate change. NPS policies and proposals may seek to reduce these impacts through the implementation of traffic demand management/behaviour change (e.g. mode shift, reduction vkm travelled, vehicle occupancy). **Quantitative assessment** may be undertaken to explore the change in traffic speed/flow/composition, which could provide an indication of changes in GHG emissions [4-6]. The appraisal could be done through a mixture of **qualitative** assessment (expert judgement) and **quantitative** assessment (using identified potential data sources) [1-6].

Table 4: AoS Framework – National Networks NPS

NATA Objectives/ Sub-Objectives*	AoS Objectives / Sub-Objectives	Relevant AoS Key Sustainability Issue (See Chapter 4)	Relevant to NPS Y/N	Covered by NATA appropriate at this level?	Alternative Guide Questions / approach, other / indicators [Questions are not numbered according to priority/importance]	Potential data sources [Related alternative guide question/s in brackets]	Recommendation for Appraisal [Related alternative guide question/s in brackets]
To protect and enhance the **landscape** To protect and enhance the **townscape**	**AoS4: Where possible, minimise the impact on landscape** • *To preserve, protect and, where possible, improve areas nationally and locally designated landscape, including AONBs, NPs, CPs, and Heritage Coasts* • *To consider landscape characteristics at a national, regional and local level*	Landscape	Yes	Yes, partially.	**1. Will it affect nationally and locally designated areas?** (Constraint mapping - AONB, Countryside Rights of Way Act 2000 – Access Layer, Designated or defined landscapes, Forestry Commission Woodland, Ancient Woodland, Greenbelt, Heritage Coast, Tranquillity) **2. Will it lead to new infrastructure that will impact on views?** **3. Will it lead to damage to landscapes?** **4. Is it likely to require good design to ensure the character of the landscape is maintained?** **5. Will it lead to infrastructure that will fit in with the landform/scale of the landscape?** **6. Will it reduce traffic flows?** **7. Will it reduce congestion?**	Magic database (www.magic.gov.uk) [location of AONB, Countryside Rights of Way Act 2000 – Access Layer, Designated or defined landscapes, Forestry Commission Woodland, Ancient Woodland, Greenbelt, Heritage Coast, Tranquillity] [1] Natural England [1] CPRE – Intrusion, tranquillity and night blight maps (www.cpre.org.uk) [Potentially 1, 2, 3] Road transport: NTM (changes in traffic speeds/flows/composition) [6, 7] HATRIS [6, 7] Expert knowledge/judgement on the nature of the effect [1-7]	Consideration should be given to the extent to which NPS policies and proposals will seek to minimise the impacts on the landscape. It is possible that where traffic levels are increased, or new/extended infrastructure proposed, there may be direct (damage to landscape, views, loss of tranquillity, enjoyment of the countryside) impacts on landscape that should be considered within the assessment. Beneficial impacts may include increased access to the countryside [3, 6, 7]. **Constraint mapping** showing the location of nationally and locally designated biodiversity sites could be utilised in the assessment [1]. The appraisal could be done through a mixture of **qualitative** assessment (expert judgement) and **quantitative** assessment (using identified potential data sources) [1-7].

Table 4: AoS Framework – National Networks NPS

NATA Objectives/ Sub-Objectives*	AoS Objectives / Sub-Objectives	Relevant AoS Key Sustainability Issue (See Chapter 4)	Relevant to NPS Y/N	Covered by NATA appropriate at this level?	Alternative Guide Questions / approach, other / indicators [Questions are not numbered according to priority/importance]	Potential data sources [Related alternative guide question/s in brackets]	Recommendation for Appraisal [Related alternative guide question/s in brackets]
To protect the **heritage of historic resources**	**AoS5: To contribute towards the protection and enhancement of sites, features and areas of historical and cultural value** • *To protect internationally and nationally designated areas (e.g. World Heritage Sites, Scheduled Ancient Monuments (SAM's), Historic Battlefields, Registered Parks and Gardens, Listed Buildings).* • *To protect locally designated areas (e.g. Conservation Areas, Landscapes of Outstanding Historic Interest)* • *To lead to the improved management and or restoration of a historic asset*	Historic Environment	Yes	Yes, Partially	**1. Will it affect Internationally and nationally designated areas?** (Constraint Mapping - World Heritage Sites, SAM's, Historic Battlefields, Registered Parks and Gardens, Listed Buildings) **2. Will it affect locally designated areas?** (Constraint mapping - Conservation Areas, Landscapes of Outstanding Historic Interest) **3. Will it protect or enhance areas and/ or assets of historical or cultural value?** **4. Will it reduce traffic flows?**	Magic Database (www.magic.gov.uk) [Location of Scheduled Monuments] [1, 2] DCMS/English Heritage [Location of Historic Battlefields, Registered Parks and Gardens, Listed Building] [1, 2] Buildings at Risk (BAR) Register (http://www.english-heritage.org.uk/server/show/nav.19186) [1, 2] Road transport: NTM (changes in traffic speeds/flows/composition) [4] Road transport: HATRIS [4] Rail: NMF (changes in service frequencies) Expert knowledge/judgement on the nature of the effect [1-3]	Consideration should be given to the extent to which NPS policies and proposals will have a direct effect on internationally, nationally and/or locally designated areas, whether through physical change or increased disturbance [3]. Beneficial effects will be associated with NPS policies and proposals that will reduce traffic levels in historic areas through traffic demand management or with NPS policies and proposals that will deal with climate change adaptation as it will reduce the impact on heritage sites from the weather events [3]. Heritage **constraint mapping** at high level could be utilised in the appraisal [1, 2]. The appraisal could be done through a mixture of **qualitative** assessment (expert judgement) and **quantitative** assessment (using identified potential data sources) [1-4].

Table 4: AoS Framework – National Networks NPS

NATA Objectives/ Sub-Objectives*	AoS Objectives / Sub-Objectives	Relevant AoS Key Sustainability Issue (See Chapter 4)	Relevant to NPS Y/N	Covered by NATA appropriate at this level?	Alternative Guide Questions / approach, other / indicators [Questions are not numbered according to priority/importance]	Potential data sources [Related alternative guide question/s in brackets]	Recommendation for Appraisal [Related alternative guide question/s in brackets]
To support **biodiversity**	**AoS6: To preserve, protect and improve biodiversity** • *To preserve, protect and improve biodiversity as per the Habitats Directive (SACs[36] and SPAs[2])* • *To preserve and protect the range of species, whilst ensuring the individual species within the range remain viable* • *To preserve, protect and improve other internationally, nationally and locally designated biodiversity sites, including Ramsar sites, NNRs[3], SSSIs[4], LNRs[5], Local wildlife and geological sites, Ancient woodland sites and Biosphere reserves*	Biodiversity	Yes	Yes, partially	**1. Will it affect biodiversity as per the Habitats Directive?** (Constraint mapping – locations of SACs/SPAs) **2. Will it affect internationally, nationally and locally designated biodiversity sites?** (Constraint mapping – locations of Ramsar sites, NNRs, SSSIs, LNRs, Ancient woodland, Biosphere reserves, Local wildlife and geological sites national forests, national inventory of woodlands and trees, woodland trust sites, RSPB reserves) **3. Will it preserve, protect and improve biodiversity?** **4. Will it reduce the range of species (or individual species within ranges)?** **5. Will it reduce traffic flows?** **6. Will it reduce congestion?**	Magic database (www.magic.gov.uk) [SACs, SPAs, Ramsar sites, NNRs, SSSIs, LNRs, Ancient woodland sites, Biosphere reserves, Local wildlife and geological sites national forests, national inventory of woodlands and trees, woodland trust sites, RSPB reserves] [1-4] Natural England [Potentially 1-4] CPRE – Intrusion, tranquillity and night blight maps (www.cpre.org.uk) [Potentially 1, 2, 4] Road transport: NTM (changes in traffic speeds/flows/composition) [5, 6] Road transport: HATRIS [5, 6,] Rail: NMF (changes in rail traffic levels / service frequencies) Expert knowledge/judgement on the nature of the effect [1-6]	Consideration should be given to the extent to which NPS policies and proposals will seek to preserve, protect and improve biodiversity (species and habitats) [1-4]. It is possible that where traffic levels are increased, or new/extended infrastructure proposed, there may be direct (land take/habitat loss and disruption) and indirect (air quality, noise, water quality) impacts on biodiversity that should be considered within the assessment [1-6]. **Constraint mapping** showing the location of internationally, nationally and locally designated biodiversity sites could be utilised in the assessment [1-2]. The appraisal could be done through a mixture of **qualitative** assessment (expert judgement) and **quantitative** assessment (using identified potential data sources) [1-6].

[36] Special Areas of Conservation; [2] Special Protection Areas; [3] National Nature Reserves; [4] Sites of Special Scientific Interest; [5] Local Nature Reserves

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To protect the **water environment**	**AoS7: To encourage the protection of water resources** • *To ensure water quality is not adversely affected by national network-related development* **AoS8: To encourage the protection water quantity**	Contamination of Water Resources / Water Resources	Yes	Yes, partially	**1. Will water quality be adversely affected?** (Discharges/releases into watercourses) **2. Will it result in the construction of new roads/rail infrastructure close to watercourses?** (Constraint mapping) **3. Will it reduce traffic flows?** **4. Will it lead to a decrease in the economic value of water features?** (e.g. recreation etc) **5. Will it result in the loss in productivity of fisheries?**	Road transport: NTM (changes in traffic speeds/flows/composition) [3] Road transport: HATRIS [3] Rail: NMF (changes in rail traffic levels / service frequencies) Magic database (www.magic.gov.uk) [Location of Bathing Waters Directive (England), Eutrophic Water Nitrogen Vulnerable Zones (NVZ), Groundwater NVZ, Nitrate sensitive areas, nitrate vulnerable zones, sensitive fish areas, surface water NVZ] [1, 4, 5] Environment Agency (water quality issues, areas of surplus/deficit water resources (stress)) [1, 4, 5] Expert knowledge/judgement on the nature of the effect [1-5]	Consideration should be given to the extent to which NPS policies and proposals will seek to protect water resources (including discharges/releases into watercourses). It is possible that where traffic levels are increased, or new/extended infrastructure proposed, there may be impacts on water resources, including direct (water quality) and indirect (subsequent economic value of water feature, productivity of fisheries etc) impacts on water resources that should be considered within the assessment. **Constraint mapping** showing potentially vulnerable water features, water stress. The appraisal could be done through a mixture of **qualitative** assessment (expert judgement) and **quantitative** assessment (using identified potential data sources) [1-5].

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[No equivalent NATA Objective – Climatic Factors and Adaptation]	**AoS9: To mitigate and adapt to climate change** • To increase resilience of national networks against the risk of climate change and other impacts	Climatic Factors and Adaptation	Yes	No	**1. Will it mitigate against the potential impacts of climate change?** **2. Will it increase the resilience of national infrastructure against the risk of climate change and other impacts?** (e.g. extreme weather events affecting infrastructure)	Expert knowledge/judgement on the nature of the effect [1-2]	Consideration should be given to the extent to which NPS policies and proposals will seek to mitigate and adapt to climate change, including the consideration of ways in which to reduce climate change and the potential climate change related impacts on infrastructure (e.g. extreme weather events). The appraisal could be done through **qualitative** assessment (expert judgement) [1-2]
[No equivalent NATA Objective – Soil]	**AoS10: To minimise the impact on soil and land resources including contamination and loss** **AoS11: To minimise the use of previously undeveloped land**	Soil	Yes	No	**1. Will it involve construction on previously undeveloped land?** (greenfeld, greenbelt)? **2. Will it lead to the contamination or loss of soil/land resources?**	Magic database (www.magic.gov.uk) [Location of greenbelt, soilscape, registered common land] [1, 2] CPRE – Intrusion maps (www.cpre.org.uk) [Potentially 1, 2] Defra (soil and contaminated land issues) [Potentially 2] Expert knowledge/judgement on the nature of the effect [1-2]	Consideration should be given to the extent to which NPS policies and proposals will seek to minimise the impact on soils and land resources (including contamination /loss) and minimising the use of undeveloped land. **Constraint mapping** showing the location of undeveloped land, and soil types [1-2] The appraisal could be done through a mixture of **qualitative** assessment (expert judgement) and **quantitative** assessment (using identified potential data sources) [1-2].

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[No equivalent NATA Objective – Waste]	**Ao12: To encourage the use of recycled materials in the construction of infrastructure, whilst reducing, re-using or recycling the waste generated from construction** **AoS13: To consider the design of National Network-infrastructure such that the potential for waste products draining to water and soil resources is reduced**	Waste	Yes	No	**1. Will recycled materials be used in the construction of infrastructure?** **2. Will waste generated from construction be reduced, re-used or recycled?** **3. Will the design of infrastructure consider the reduction of waste products draining to water and soil resources**	Expert knowledge/judgement on the nature of the effect [1-3]	Consideration should be given to the extent to which NPS policies and proposals will seek to encourage the use of recycled materials in the construction of infrastructure, whilst reducing, re-using or recycling the waste generated from construction. The assessment should also consider the design of proposed National Network-infrastructure such that the potential for waste products draining to water and soil resources is reduced. The appraisal could be done through **qualitative** assessment (expert judgement) [1-3].

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NATA Objectives/ Sub-Objectives*	AoS Objectives / Sub-Objectives	Relevant AoS Key Sustainability Issue (See Chapter 4)	Relevant to NPS Y/N	Covered by NATA appropriate at this level?	Alternative Guide Questions / approach, other / indicators [Questions are not numbered according to priority/importance]	Potential data sources [Related alternative guide question/s in brackets]	Recommendation for Appraisal [Related alternative guide question/s in brackets]
[No equivalent NATA Objective – Flood Risk]	**AoS14: To increase the resilience of National Network-related infrastructure against the risk of flooding** **AoS15: To contribute towards reducing the risk of flooding in the hinterland**	Flood Risk	Yes	Yes, partially (Water sub-objective)	**1. Will the area of hardstanding be increased?** **2. Will it exacerbate or reduce flood risk?**	Environment Agency [2] Strategic Flood Risk Assessments (local authorities) [Potentially 2] Expert knowledge/judgement on the nature of the effect [1-2]	Consideration should be given to the extent to which NPS policies and proposals will seek to consider the construction of new/extended infrastructure in locations that may aggravate flood risk. Where the area of hardstanding is increased, this may lead to increased risk of flooding. National networks have the potential to increase flood risk, for example, through using cuttings, but also to reduce flood risk, for example, with embankments. **Strategic flood risk constraint mapping** at high level could be utilised in the assessment. The appraisal could be done through a mixture of **qualitative** assessment (expert judgement) and **quantitative** assessment (using identified potential data sources) [1-2].

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NATA Objectives/ Sub-Objectives*	AoS Objectives / Sub-Objectives	Relevant AoS Key Sustainability Issue (See Chapter 4)	Relevant to NPS Y/N	Covered by NATA appropriate at this level?	Alternative Guide Questions / approach, other / indicators [Questions are not numbered according to priority/importance]	Potential data sources [Related alternative guide question/s in brackets]	Recommendation for Appraisal [Related alternative guide question/s in brackets]
SAFETY - To reduce the loss of life, injuries and damage to property resulting from transport accidents and crime							
To reduce **accidents**	**AoS16: To reduce accidents and incidents on national networks and reduce risk to the users of road and rail network**	Safety and Security	Yes	Yes	**1. Will it reduce the likelihood of incidents on the National Networks?** **2. Will it improve the speed with which networks are re-opened following incidents?** **3. Will it reduce risk to vulnerable road/rail users?**	National Stats 19 database [Potentially 1, 3] Highways Agency road casualty and incident data [Potentially 1, 2, 3] DfT Road Casualties Great Britain [Potentially 1, 3] Office of Rail Regulation Railways Safety Statistical Report [Potentially 1] Rail Safety Standards Board (RSSB) Safety Risk Model [Potentially 1] Population Density [1,3] Consideration of DfT's Social and Distributional Impacts (SDI) research programme (security impacts on different groups; spatial/equality analysis of road accident data) [1, 2] Expert knowledge/judgement on the nature of the effect [1-3]	Consideration should be given to the extent to which NPS policies and proposals will affect the likelihood of accidents occurring on the National Networks, and the response to such accidents. Modelled changes in traffic flow and mix to accident risk models could be compared in the assessment. This could also be tested with the RSSB Safety Risk Model [1-3]. Map changes in traffic flow relative to areas of high population density. **Constraint mapping** showing existing casualty hotspots on the National Networks may be utilised in the assessment [1,3]. The appraisal could be done through a mixture of **qualitative** assessment (expert judgement) and **quantitative** assessment (using identified potential data sources) [1-3].

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To improve **security**	**AoS17: To contribute towards increased security and resilience to all major incidents on national networks.**	Security and Safety	Yes	No	**1. Will it provide for security planning to deal with major incidents?** **2. Will it raise awareness and understanding of security issues amongst staff, travellers/commuters?** **3. Will it address the differing needs of all communities especially Deaf, disabled and older people when major incidents occur?**	Expert knowledge/judgement on the nature of the effect [1-3]	Consideration should be given to the extent to which NPS policies and proposals will contribute to the increased security and resilience to major incidents on National Networks. Appraisal will be undertaken through **qualitative** assessment [1-3].
	AoS18: To contribute to the reduction of crime and fear of crime among vulnerable groups and transport user types	Security and Safety	Yes, partially (some scheme specific)	No	**1. Will it contribute to measures to combat crime, fear of crime and anti-social behaviour on or near national networks?** **2. Will it contribute to improving perceptions of personal security?** **3. Will it help to design out crime by providing for integrated urban design and landscaping/engineering e.g. lighting requirements, line of vision, open spacing[37] in stations and access to stations, presence of staff and clear signage? (scheme appraisal specific)**	Defra – Sustainable Development Indicators Home Office Crime Mapping [1-3]. Consideration of DfT's SDI research programme (Perception of crime/actual crime for different groups) [1, 2] Expert knowledge/judgement on the nature of the effect [1-3]	Consideration should be given to the extent to which NPS policies and proposals will reduce levels of crime and fear of crime. **Mapping** of reported crime on national networks could facilitate this assessment [1-3]. Further appraisal could be done through **qualitative** assessment [1-3].

[37] Ensuring the design and layout of stations is open in nature to mitigate against the potential for crime and enhance accessibility and safe use for all.

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ECONOMY - To support sustainable economic activity and get good value for money							
To improve transport economic efficiency for **business users and transport providers** To improve **transport economic efficiency for consumer users**	**AoS19: To contribute towards the maximisation of user benefits on the National Networks, including business users, transport providers and consumer users**	Productivity Growth Across the Economy	Yes	No	**1. Will it provide for more efficient distribution or service provision or more rational and effective location decisions?** (For example, providing for larger, more efficient distribution centres) **2. Will it provide greater accessibility for regional economies and support inward investment and tourism?** (See also AoS24 and AoS 25: Accessibility) **3. Will it reduce the overall cost of travel?**	Road transport: NTM (changes in traffic speeds/flows/ composition) [1] Rail: NMF [1] Transport costs as a share of added value for specific industries (e.g. Distribution and Logistics, Manufacturing, etc) Work on the location of rail freight interchanges. Feedback from regional transport strategy work on key bottlenecks for regional economies. Feedback from coach/rail operators. Government/Industry/ Household spend on transport (mode/main category of spend, including taxes and subsidies) (ONS/DfT) [1-2] Expert knowledge/judgement on the nature of the effect [1, 2]	Consideration should be given to the extent to which NPS policies and proposals will improve national strategic links (and remove existing bottlenecks) and support the growth of international gateways. **Network stress or congestion mapping** at high level could be utilised in the appraisal. The appraisal could be done through a mixture of **qualitative** assessment (expert judgement) and **quantitative** assessment (using identified potential data sources) [1-2].

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To improve **reliability**	**AoS20: To contribute towards the improvement of levels of congestion and reliability on the National Networks** • *Target network improvements either through traffic demand/ management or new infrastructure in sections of the National Networks that serve key agglomerations and international gateways where congestion or reliability problems exist.*	Productivity Growth Across the Economy	Yes	No	**1. Will it reduce congestion/overcrowding?** **2. Will it improve rail reliability?** **3. Will it improve resilience within the corridor?** **4. Will it increase productivity?**	Road transport: NTM (changes in traffic speeds/flows/ composition) [1] Rail: Network Modelling Framework (NMF) overcrowding [1, 2] Expert knowledge/judgement on the nature of the effect [1-3] Gross Value Added (GVA) by district (ONS/DfT) [4] Sectoral Mix of Employment (ONS) [4]	Consideration should be given to the extent to which NPS policies and proposals will seek to control and achieve acceptable levels of congestion and delays and provide reliability on the strategic corridors. **Network stress or congestion mapping** at high level could be utilised in the appraisal [1, 2]. The appraisal could be done through a mixture of **qualitative** assessment (expert judgement) and **quantitative** assessment (using identified potential data sources) [1-4].

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To provide beneficial **wider economic impacts**	**AoS21: To consider strategic transport access to regeneration areas, employment centres and areas of high unemployment**	Employment, Regeneration and Local/ Regional Development	Yes	No	**1. Will it provide/enhance adequate access to key employment centres, regeneration sites and areas with high unemployment?** **2. Where new routes are developed, will they be located closer to areas of unemployment and provide local access?** **3. Will it enhance agglomeration opportunities?**	Road transport: NTM (changes in traffic speeds/flows/ composition) [potentially 1, 2] Road transport: HATRIS [potentially 1, 2] Rail: NMF (changes in service levels on relevant Strategic Routes) Comparison of journey times by car and sustainable transport modes [1-2] Government/Industry/House hold spend on transport (mode/main category of spend, including taxes and subsidies) (ONS) [1-2] Gross Value Added (GVA) by district / Sectoral Mix of Employment (ONS/DfT) Consideration of DfT's SDI research programme (Identification of PT demand in PT corridors, and social groups that would use services) [1, 2] Trends in use of sustainable transport modes [1-2] Expert knowledge/judgement on the nature of the effect [1, 2]	NPS policies and proposals should ensure a clear linkage between transport, employment and regeneration. Consideration should be given to the extent to which strategic transport access to regeneration areas, employment centres and areas of high unemployment will be improved. Beneficial effects will be associated with NPS policies that take into account regeneration/development sites and the quality of connection to the strategic corridors. **Regeneration/ growth areas mapping** at high level could be utilised in the appraisal. **Network stress or congestion mapping** at high level could be utilised in the appraisal. The appraisal could be done through a mixture of **qualitative** assessment (expert judgement) and **quantitative** assessment (using identified potential data sources) [1-2].

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	AoS22: To contribute towards the improvement of accessibility to rural areas	Rural Economic Growth	Yes	No	**1. Will it reduce journey time from rural areas to regional/nationally strategic destinations** (e.g. distance/ journey time to rail stations or motorway/ trunk road junctions?)	Road transport: NTM (changes in traffic speeds/flows/ composition) [1] Road transport: HATRIS [1] Rail: NMF (changes in service levels on relevant Strategic Routes) [1] Comparison of journey times by car and sustainable transport modes [1] Trends in use of sustainable transport modes [1] Expert knowledge/judgement on the nature of the effect [1]	Consideration should be given to the extent to which NPS policies and proposal can/will provide reasonable access, where practical, to strategic corridors for rural communities. Beneficial effects will be associated with NPS policies and proposals that take into account rural areas and the quality of connection to the strategic corridors. Rural areas **mapping** at high level could be utilised in the appraisal. The appraisal could be done through a mixture of **qualitative** assessment (expert judgement) and **quantitative** assessment (using identified potential data sources) [1].

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ACCESSIBILITY - To improve access to facilities for those without a car and to reduce severance							
To reduce **severance**	**AoS23: To contribute to reduced severance of transport routes and recreational areas as a result of national network development and operations**	Accessibility	Yes	Yes, Partially	**1. Will it lead to hindrance of pedestrian/cyclist/equestrian movement along or across national networks?** **2. Will it increase traffic levels in urban areas?**	Road transport: NTM (traffic volume/speed) [2] Defra – Sustainable Development Indicators [1] Consideration of DfT's SDI research programme (Identification areas of changes in severance, and potentially affected social groups) [1, 2] Expert knowledge/judgement on the nature of the effect [1-3]	Consideration should be given to the extent to which NPS policies and proposals will reduce severance of transport routes and recreational areas. This appraisal will be done through **qualitative** assessment [1-3].
To improve **access to the transport system**	**AoS24: To provide reasonable access (where practicable) to national networks for rural communities** • *Increase the coverage of rural economies by national networks (e.g. distance/journey time to rail stations or motorway/trunk road junctions.*	Accessibility	Yes	Yes, Partially	**1. Will it lead to hindrance of pedestrian/cyclist/equestrian movement along or across national networks?** **2. Will it increase traffic levels in urban areas?**	Road transport: NTM (traffic volume/speed) [2] Defra – Sustainable Development Indicators [1] Public transport timetables. Expert knowledge/judgement on the nature of the effect [1-3]	Consideration should be given to the extent to which NPS policies and proposals will reduce severance of transport routes and recreational areas. This appraisal will be done through **qualitative** assessment [1-3].

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	AoS25: To enhance access to national networks and the jobs, services and social networks they create, including for the most disadvantaged • *To enhance access for all types of users, including access to national rail networks for pedestrians and cyclists (rail or interchange facilities with local roads)*	Accessibility	Yes	Yes, partially.	**1. Are public transport service levels/frequencies expected to increase?** **2. Will it facilitate a decrease in crowding on public transport?** **3. Will it improve transport interchange?** **4. Will it improve the general quality of the public transport service, including factors such as the availability of information, ease of access to the vehicles themselves, and standards of comfort?** **5. Will it increase accessibility to employment, training and up-skilling opportunities?** **6. Will it help enable disadvantaged sections of the community to access the services they require?** **7. Will it increase accessibility to key services and facilities for all?** **8. Will it provide affordable/discounted travel for disadvantaged sections of the community?**	DfT (2007) – Regional Transport Statistics 2007 Defra – Sustainable Development Indicators Rail: NMF (overcrowding) [2] Modelling of rail capacity and constraints Accession™ modelling [1, 3, 5, 6, 7] Public transport timetables [1, 4] Consideration of DfT's SDI research programme (appraisal of accessibility, including distributional impacts) [1, 2] Expert knowledge/judgement on the nature of the effect [1-8]	Consideration should be given to the extent to which NPS policies and proposals will enhance access to opportunities for all. **Mapping** of relevant Indices of Multiple Deprivation along the strategic National Network could facilitate this assessment [6, 7]. In addition, **modelling of capacity** on rail networks could be undertaken and Accession modelling to identify access levels to key services for communities along and near strategic national networks [1, 3, 5, 6, 7] Further appraisal would be done through **qualitative** assessment [1-8].

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Social Issues (not addressed in NATA)							
[No equivalent NATA Objective – Equality]	**AoS27: To ensure the needs of different social groups are taken into account in national network planning and service delivery** • *To take opportunities to benefit equality target groups by actively considering how national networks could benefit each group* • *To reduce any disproportionate negative effects national networks could have on particular regions, users or vulnerable social groups* • *To promote inclusive design of national networks, including interchanges*	Equality	Yes	No	**1. Will it benefit equality target groups?** **2. Will it reduce disproportionate negative effects on particular regions, users or vulnerable social groups?** **3. Will it promote inclusive design?**	Index of Multiple Deprivation [1] DfT (2007) – Regional Transport Statistics 2007 Defra – Sustainable Development Indicators Accession™ modelling Consideration of DfT's SDI research programme (including groups wider than ETGs, i.e. low-income, those with mobility problems, no-car households etc) [1-3] Expert knowledge/judgement on the nature of the effect [1-3]	Consideration should be given to the extent to which NPS policies and proposals will take account the needs of different user groups, including equality target groups. **Mapping** of relevant Indices of Multiple Deprivation along the strategic National Network could facilitate this assessment [1-2]. In addition, **Accession modelling** to identify access levels to key services for communities along and near strategic national networks could be undertaken [1-2]. Further appraisal would be done through **qualitative** assessment [1-3]. Consultation with Equality Target Group representatives in line with guidance on Equality Impact Assessment [1-2].

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[No equivalent NATA Objective – Health and Wellbeing]	**AoS28: To encourage the consideration of opportunities to improve health and well-being and minimise negative changes in living environments and public health that may result from national networks development and operations or national network economic effects** See also Access to jobs under Accessibility.	Health and Wellbeing	Yes	No	**1. Will it help to reduce health inequalities and key contributory factors to this?** **2. Will it support the physical and mental health and wellbeing of communities, particularly those disproportionately affected by inequality?** **3. Will it address factors which can negatively impact upon health and wellbeing, including:** • Noise generation at source? • Exposure of people and dwellings to transport noise (rail and road traffic)? • Air pollution levels? • Improve the quality of the travelling experience for all users and potential users of the London transport system? **4. Will it address factors which can positively impact upon health and wellbeing, including:** • Encourage mode shift? • Increase occupancy of vehicles? (indirect) • Reduce congestion? (indirect) • Increase access to transport?	NTM (changes in traffic speeds/flows/composition) [1-4] DEFRA Noise Mapping [1, 3-4] IMD [1-4] National Centre for Health Outcomes Development http://www.nchod.nhs.uk/ Census Data 2001[3-4] Consideration of DfT's SDI research programme (including mapping of distributional impacts of noise and air quality) [1-4] Expert knowledge/judgement on the nature of the effect [1-4]	Consideration should be given to the extent to which NPS policies and proposals will take account the health and well-being impacts. Much of this assessment will be undertaken in conjunction with the assessment of environmental impacts (including noise and air quality). **Mapping** of relevant Indices of Multiple Deprivation along the strategic National Network could facilitate this assessment [1-4]. In addition, noise and air-quality **mapping** based on modelled changes in flows along strategic national corridors and compared to vulnerable receptor social groups and IMD [1-4]. Further appraisal would be done through **qualitative** assessment [1-4].

* NATA sub-objectives not covered in this table include physical fitness, journey ambience (Environment), public accounts, option values (Economy), transport interchange (Accessibility) land use policy, and other government policies (Integration).

5.2 Testing the compatibility of AoS Objectives

Compatibility analysis was undertaken between the AoS objectives to identify the existence of any tensions between objectives that cannot be resolved. Where tensions are identified, these can be clarified so that subsequent decisions can be well based and mitigation or alternatives considered. A table displaying the results of the compatibility analysis is presented in Appendix C. The compatibility analysis revealed that in the majority of cases, AoS objectives were largely compatible, or had no direct relation. However, uncertainty exists around the compatibility of a number of pairs of objectives, particularly where one relates to the economy and the other to the environment or social objectives.

For example, in some cases the promotion of economically-driven objectives may be incompatible with environmental or social well-being objectives, but this will depend on the way in which such objectives are promoted. The appraisal will determine in more detail whether these economic AoS objectives are likely to have an adverse impact on environmental or social factors, and vice versa.

6 Consultation

Various authorities, due to their environmental, economic or social responsibilities, are likely to be concerned about the effects of implementing plans, policies or programmes. Therefore they should be consulted on the scope and level of detail of the information to be included within the Appraisal of Sustainability. In England, there are three Statutory Bodies that should be consulted in similar processes (Strategic Environmental Assessment, Sustainability Appraisal), which include the Environment Agency (EA), English Heritage (EH) and Natural England (NE).

A Scoping Workshop was held at DfT on the afternoon of the 3rd December 2008 (joint workshop for the National Networks and Ports NPSs). Representatives from the environmental Statutory Environmental Bodies and other key stakeholders (Sustainable Development Commission, SDC) were invited to attend. The purpose of the workshop was to consult with key stakeholders at an early stage in the scoping process to aid the identification of key sustainability issues relevant to the National Networks NPS.

Agenda

1. Introduction
- Agenda / Structure of afternoon
- Round table introductions

2. Introduction to National Policy Statements and the Planning Bill

3. National Networks NPS

4. Ports NPS

5. Introduction to the AoS
- Introduction to the AoS including outline of the process
- Timings for Scoping / AoS Reports
- Involving key stakeholders (this workshop, email responses etc)

6. AoS Scoping to date
- Review of policies, plans and programmes (PPP)
- Compilation of baseline – environmental, social and economic issues

7. Identifying Sustainability Issues
- Sustainability issues specific to:
  - National Networks
  - Ports

Representatives from the Environment Agency, English Heritage, Natural England, and the Sustainable Development Commission attended the workshop. In addition, written comments were received from the Environment Agency, English Heritage and Natural England following the workshop.

Appendix D provides an overview of the workshop responses, and how comments have been addressed within this Scoping Report, or will be addressed in the AoS Report and associated processes.

The project team recognised that with the exception of the SDC, key stakeholders interests lay primarily with the environmental issues related to the NPS development. Therefore further consultation will be undertaken with other Government departments on economic and social issues where appropriate.

Following the publication of the National Networks NPS and AoS Report in 2009, DfT will undertake a full public consultation exercise.

7 Remaining Stages of the AoS

This chapter of the Scoping Report outlines the recommended approach that could be taken for the remaining stages of the AoS, including the format that could be used in producing the final AoS Report.

The SA process detailed in the ODPM guidance (ODPM, 2005[38]) which is being followed in the AoS process covers five stages, A to E. This Scoping Report has covered Stage A by:

- Identifying and reviewing other relevant policies, plans and programmes, and sustainable development objectives that will affect or influence the Planning Framework;
- Collecting relevant social, environmental and economic baseline information;
- Identifying key sustainability issues for the AoS to address;
- Developing the AoS framework; and
- Providing the basis for consultation on the scope of the AoS.

Table 5 shows the remaining steps involved in the AoS, based on the ODPM guidance.

Table 5: Remaining Stages of the AoS (DfT will be responsible for undertaking these remaining stages)
Stage B – Developing and refining options and assessing effects
• Assess NPS objectives against the AoS framework • Develop strategic options for the NPS • Predict effects of options taken forward against AoS framework • Evaluate effects of options taken forward against AoS framework • Considering ways of mitigating adverse effects and maximising beneficial effects • Propose measures to monitor the significant effects of implementing NPS
Stage C – Preparing the AoS Report
• Preparing AoS Report
Stage D – Consultation on the AoS Report and draft NPS
• Public consultation and parliamentary scrutiny on the AoS Report and draft NPS • Assessing responses and contributions • Making amendments in response to comments and providing information. • [Designation will occur here]
Stage E – Monitoring the significant effects of implementing the NPS (DfT will undertake this stage) (if required)
• Finalising aims and methods for monitoring • Responding to adverse effects

7.1 Assessment of Effects

A key element of the AoS Report will be the assessment of the effects of the NPS against the AoS Framework developed here. This is discussed in more detail below.

7.1.1 Predicting Effects

This task comprises the prediction of changes to the sustainability baseline arising from the NPS. These can be compared both with each other and with the 'do nothing' or 'business as usual' scenario. Ideally, the effects of the evolving NPS should be predicted and assessed during the plan-making process to ensure that the final NPS is as sustainable as possible.

[38] ODPM (2005) Sustainability Appraisal of Regional Spatial Strategies and Local Development Documents, TSO, UK. URL: http://www.communities.gov.uk/documents/planningandbuilding/pdf/142520.pdf

7.1.2 Evaluating Effects

Assessing the significance of predicted sustainability effects is essentially a matter of judgement at the NPS level. Judgements of significance should be systematically documented, in terms of the particular characteristics of the effect which are deemed to make it significant and whether and what uncertainty and assumptions are associated with the judgement. The assessment of significance should also include information on how the effect may be avoided or its severity reduced, in the case of adverse effects, or enhanced in the case of beneficial effects.

When carrying out this evaluation, the following will be considered for each NPS option:

- What criteria/advice is being provided to the IPC regarding their decisions on proposals?
- Will the option have a likely significant effect in relation to each of the sustainability objectives or target from Stage A?
- If so, can the effect be avoided or can the severity be reduced (or can the effect be enhanced if it is positive)?
- If the effect cannot be avoided, can the option be changed or eliminated?
- If the effect cannot be avoided, can the alternative be changed or eliminated?
- If its effect is uncertain, or depends on how the plan is implemented, how can the uncertainty be reduced?

7.1.3 Methodologies for Assessing Effects

Table 6 provides a useful summary of the range of techniques that can be used in the prediction and assessment of effects. In addition to expert judgement, causal chain/network analysis can prove especially useful in the prediction of cumulative, indirect and synergistic effects. GIS is useful in assessing the spatial/distributional characteristics of certain types of effect. Further information on assessment techniques can be found in a range of guidance documents (including ODPM, 2005a[39]; ODPM, 2005b[40]).

Table 6: Prediction and Assessment Techniques for AoS

Technique	Prediction	Assessment
Expert judgement	✓	✓
Public participation		✓
Quality of Life Capital		✓
Geographical information systems	✓	✓
Network analysis	✓	
Modelling	✓	
Scenario/sensitivity analysis	✓	
Multi-criteria analysis		✓
Carrying capacity, ecological footprints		✓
Compatibility assessment		✓

The AoS framework (see Section 5) has been developed to aid the prediction and evaluation of the effects of the NPS through the provision of guide questions related to each of the AoS Objectives, identification of potential data sources and recommendations for the assessment. It is likely that the assessment will rely on quantitative assessment (based on predictions from DfT transport modelling and other data sources), constraint mapping, and qualitative assessment (including expert judgement). As mentioned in Section 5, in addition to quantitative assessment based on available

[39] ODPM (2005) Sustainability Appraisal of Regional Spatial Strategies and Local Development Documents, ODPM, UK. URL: http://www.communities.gov.uk/documents/planningandbuilding/pdf/142520.pdf
[40] ODPM (2005) A Practical Guide to the Strategic Environmental Assessment Directive, ODPM, UK. URL: http://www.communities.gov.uk/documents/planningandbuilding/pdf/practicalguidesea.pdf

data, it is anticipated that qualitative assessment will play a large role in the AoS - therefore professional judgement based on experience will be essential. It will be important to provide some realistic indication of the accuracy of predictions, but particularly in cases where predictions are close to expected thresholds, or are the result of cumulative, synergistic or indirect effects.

Figure 5 provides an example of an AoS assessment table that could be used in the following stages of the AoS.

Figure 5: Example AoS Assessment Table

NPS element being assessed *[Add]*		**Description of NPS element *[Taken from NPS]***					
Scale of Effect (SE): ST – Short Term, MT – Medium Term, LT – Long Term 0 – no effect; +++ strongly positive; ++ moderately positive; + slightly positive; --- strongly negative; -- moderately negative; - slightly negative							
Example AoS Objectives		**Description of Effect**	**Duration of Effect**			**Description of Mitigation**	**Additional Comments / Explanation**
			ST	**MT**	**LT**		
AoS1	*[example text] To increase energy efficiency and the production of renewable energy*	*[example text] Policy DC1 promotes the use of energy efficient design, thereby increasing energy efficiency throughout the operational lifespan of the development.*	*+ +*	*+ +*	*+ +*	*Not required as positive*	

7.2 Mitigation

For significant sustainability effects predicted to arise from implementation of the NPS, recommendations should be proposed in the AoS Report for mitigation measures to prevent, reduce or offset adverse effects, and enhance positive effects.

7.3 Monitoring

Where significant effects (both positive and negative) are identified in the assessment, it is recommended that a framework for monitoring these on-going sustainability effects arising from the NPS, where possible, should be produced in the AoS Report. This monitoring framework should provide methods by which the sustainability performance of the NPS can be recorded. The monitoring framework should be clearly linked to the objectives developed for the AoS framework.

7.4 AoS Report

Table 7 below presents the proposed structure and level of detail for the AoS Report, based on Appendix 15 of the ODPM guidance on Sustainability Appraisal. DfT will be responsible for producing this AoS Report.

Table 7: AoS Report Structure		
Structure of report		**Information to include**
1.	**Summary and outcomes**	• Non-technical summary • A statement of significant effects of NPS • Statement on the difference the AoS process has made • How to comment on the report
2	**Background**	• Purpose of the AoS and the AoS Report • NPS objectives and outline of content
3.	**Appraisal Methodology**	• Approach adopted to the AoS • When the AoS was carried out • Who carried out the AoS • Who was consulted, when and how • Difficulties encountered in compiling information or carrying out the assessment.
4.	**Sustainability objectives, baseline and context**	• Links to other strategies, plans and programme and sustainability objectives • Description of the social, environmental and economic baseline characteristics and the predicted future baseline • Main social, environmental and economic issues and problems identified • Limitations of the information, assumptions made etc. • The AoS framework, including objectives, targets and indicators
5.	**NPS issues and options**	• Main strategic options consider and how they were identified • Comparison of the social, environmental and economic effects of the options • How social, environmental and economic issues were considered in choosing the preferred options • Other options considered, and why these were rejected • Any proposed mitigation measures
6.	**Plan objectives/policies**	• Significant social, environmental and economic effects of the preferred options • How social, environmental and economic problems were considered in developing the options • Proposed mitigation measures • Uncertainties and risks
7.	**Implementation**	• Links to other elements of the policy context and the project level (environmental impact assessment, design guidance, etc) • Proposals for monitoring

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