

Sector Analysis: Inland Transport

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1. Summary

- 1.1 This analysis describes the characteristics and scale of the inland transport sector and its impacts on the delivery of nature conservation objectives in England. It gives English Nature's objectives for the sector and sets out our three priority actions for 2001-2003. We also identify the key organisations and actions needed to influence policy and its delivery.
- 1.2 We outline the roles of the key players and shapers within the sector. The dominant influences in this sector are the European Union (EU), central, regional and local government, the Highways Agency and local highway authorities, the Strategic Rail Authority, Railtrack and other transport promoters and lobby groups.
- 1.3 We examine the key socio-economic and political factors that shape the sector; these include transport's contribution to the national and local economies, its role as a major employer, people's reliance on cars and road infrastructure, and the growing consensus over the need for more sustainable use.
- 1.4 We analyse the positive and negative impacts of the sector on nature conservation. Whilst the analysis identifies the range of direct and indirect adverse effects on biodiversity such as the loss and fragmentation of habitat, it also recognises that there can be environmental gains through opportunities for biodiversity management and enhancement. The transport sector is a key component of all regional economies. In environmental terms, the south of England, and in particular the south east and parts of the Midlands are the main pressure points, although there is increasing demand for new transport infrastructure across all Regions.

1.1 Characteristics and scope of the sector

- 2.1 Access to goods, services and facilities is an essential requirement of all our lives. Our quality of life depends upon an effective transport system to provide such access; we rely on transport to go to work, to shop and to visit friends and places. In 1998/2000, the average British resident travelled nearly 6843 miles a year, an increase of 6% since 1989/91 (DTLR, 2001: Focus on Personal Travel 2001 edition). Car travel accounted for four fifths of the total distance traveled in 1998/2000 and the distance travelled by car increased by 9% during the 1990s. As a nation we are now walking and cycling less and bus travel is declining (except in London). Rail travel has remained largely constant since the mid-1970's and in 1998-2000 reached its previously largest peak of 366 miles per person per year. Nearly all freight is transported via the road network. These ongoing changes are the result of public and private sector influences including Government policy, tax and public expenditure decisions, lifestyle changes due to rising living standards and consumer expectations, demand from industry, commercial investment, environmental regulations and land-use planning.
- 2.2 However, providing and using the transport infrastructure has an environmental cost. This sector is responsible for a variety of air pollutants, which affect biodiversity, and currently account for more than 25% of the UK's carbon dioxide emissions. Increasing car usage since the 1970s has led to growing levels of congestion on our

roads and motorways, in our towns and cities and increasingly in the countryside. This has fuelled the demand for new roads, especially bypasses, and the need for ongoing maintenance of existing roads. Both transport infrastructure construction and operation have a range of impacts on the natural environment at global, national, regional and local levels. Most of these effects are well documented, but some need further research (eg the indirect effects of traffic noise and lighting on birds, the effects of emissions on vegetation and the importance of rail corridors as habitats for wildlife), to determine the level of significance.

- 2.3 For the purpose of this analysis, inland transport includes roads and road transport, public transport (buses, trams, railways), airports, canals, inland waterways and water transport, cycling and walking. It excludes shipping, ports, pipelines or forms of (tele)communication which are found either in other English Nature sector analyses or not thought to leave a major environmental footprint. Roads and railways are our main causes of interest and concern, although airports and cycle networks are of increasing importance.
- 2.4 The Government's Transport White Paper, *A New Deal for Transport*, is the first full statement of transport policy for 20 years. It was designed to address the problems of pollution and congestion, which will be exacerbated by the increase in traffic levels over the next 20/30 years if radical measures are not taken. Its vision is for a transport system that supports sustainable development based on an integrated approach which incorporates the environment. Key components included proposals for congestion charging and/or taxes on workplace parking, improved bus services, five year local transport plans, a Strategic Rail Authority, a new Commission for Integrated Transport to monitor progress, a new national public information service, and the reshaping of the Highways Agency from road builder to road network operator.
- 2.5 Subsequent to the White Paper, the Government issued a 10-Year Transport Plan, *Transport:2010*, which is an investment strategy designed to deliver the above policies and sets priorities for putting them into practice, especially Local Transport Plans, road and rail improvements, and transport in London.
- 2.6 Other current policy 'drivers' include the carbon dioxide emission reduction targets agreed at Kyoto, the European agenda through the White Paper on transport and the development of Trans-European Networks (TEN-T), the whole issue of energy taxes particularly fuel prices, and the pressure for new house building. In October 1998, European Environment Ministers agreed to cut carbon dioxide emissions from new cars by 25% by 2008. This will help deliver the EU's Kyoto commitment to reduce carbon dioxide emissions by 8% by 2008-2012. The European Commission's White Paper: *European Transport Policy for 2010: Time to Decide* sets out a comprehensive strategy aimed at delivering a sustainable transport system, from an economic, social and environmental viewpoint. A key objective of the paper is to shift the balance of transport in Europe from road and aviation towards rail, shipping and intermodal operations by 2010. Major TEN-T schemes in England that have been awarded funding include the Channel Tunnel Rail Link, and the West Coast Route Modernisation. A number of studies such as the Trans Pennine Strategic Environmental Assessment Study have received smaller-scale funding. New housing development has significant potential to exacerbate the problems of traffic congestion,

and in transport terms, the implications of new housing locations must be taken into account by central and local government.

2.7 The Highways Acts, the Town and Country Planning Acts, the Environmental Assessment regulations, and the Transport and Works Act 1992 provide the legal framework for the sector. The Wildlife and Countryside Act and the Habitats Regulations are also pertinent. Relevant Planning Policy Guidance notes are 11 (on Regional Planning Guidance), 12 (on Development and Local Transport Plans), and 13 (on Development Plans). The EU Directive on the assessment of the effects of certain plans and programmes on the environment (the Strategic Environmental Assessment Directive) is due to be implemented in the UK by July 2004 and in the transport sector is likely to apply to Local Transport Plans, Regional Transport Studies and Multi-Modal studies

2.8 Green Paper *Planning: Delivering a Fundamental Change* was published in December 2001 with the intention of speeding up the planning system whilst increasing the opportunities for public involvement in decision-making. One of the Paper's 'daughter' documents on Major Infrastructure Projects proposed changes which would give the Secretary of State the right to call in major infrastructure projects, such as new airports, trunk roads and rail schemes, to be debated before Parliament. Proposals for particular major projects will be made in the context of a national policy statement, normally made after public consultation.

2.9 This sector has important nature conservation links to other sectors, namely:

- Ports and marine navigation;
- Minerals and aggregates;
- Domestic, commercial and industrial development of land;
- Tourism, recreation and access.

2. Key shapers and players

2.1 Key shapers - defining the rules of the game

3.1.1 At a strategic level, the key shaper is the EU which plays an important role in setting the framework for policy and law at a European level, and in promoting partnership between Member States, industry and the community. It does this for example, through initiatives such as the European Community strategy for reducing carbon dioxide emissions from passenger cars, and proposals for revitalising EU railways and charging for the use of roads and railways. In the EU, Directorate DG TREN is responsible for transport policy. The Commission of the European Communities has aimed to develop a consensus on a Community Transport Policy to achieve sustainable mobility.

3.1.2 At a national level Department of Transport Local Government and the Regions (DTLR) and the Department for the Environment, Food and Rural Affairs (DEFRA) are continuing the process of securing improved integration between transport, the environment and land use planning policy. The Commission for Integrated Transport

and the Strategic Rail Authority are starting to have increasingly important roles to play.

- 3.1.3 At a regional level, the Government Offices have a key role and the Regional Chambers (known in some regions as Assemblies) are increasingly evolving from Regional Planning Bodies and have responsibility for the development of Regional Transport Strategies. Local authorities will still be important players as they continue to prepare Local Transport Plans. In London, responsibility for transport rests with the Greater London Authority and Transport for London.
- 3.1.4 The various transport promoters and providers, many of whom now reside in the private sector are important. The major shapers include the Highways Agency and local highways authorities, the Strategic Rail Authority, Railtrack, Sustrans (the organisation building the National Cycle Network), British Waterways, and the numerous car, freight, rail, bus and commercial, and local authority airport companies and operators.
- 3.1.5 Regional Development Agencies (RDAs) and business representatives such as Regional Chambers of Commerce are of growing importance and relevance.
- 3.1.6 Professional or overview bodies such as the Local Government Association, the Institution of Highways and Transportation, the Institute of Civil Engineers, the Transport Planning Society and the CSS (formerly the County Surveyors' Society) play a significant role.

2.2 Key players - seeking to influence the rules of the game

- 3.2.1 Organisations concerned about pollution and congestion such as Transport 2000, the national lobby group on transport and environmental issues, fall within this category. Transport 2000 is supported by a number of affiliated organisations such as the CTC (formerly the Cyclists Touring Club), the Pedestrians Association and other special interest campaigning groups.
- 3.2.2 The pro-car and roads lobby groups including the Automobile Association, the Royal Automobile Club, the British Roads Federation, the Freight Association, the Road Haulage Association, the Retail Motor Industry Federation and the Society for Motor Manufacturers and Traders. The Confederation of British Industry and the major oil companies also sit within this category and have been joined by groups such as hauliers and farmers.
- 3.2.3 Most of the well-established voluntary conservation organisations are active in this sector, particularly the Royal Society for the Protection of Birds (RSPB), Friends of the Earth (FoE), World Wide Fund for Nature (WWF), the Wildlife Trusts (WTs), the Campaign for the Protection of Rural England (CPRE) and Greenpeace.
- 3.2.4 Numerous small, local 'grassroots' campaigning groups either in support of or against individual transport projects.
- 3.2.5 Other influential groups include the Commission for Integrated Transport, the Standing Advisory Committee on Trunk Road Assessment (SACTRA), the Royal

Commission on Environmental Pollution (RCEP) and the UK Sustainable Development Commission. SACTRA and RCEP have produced a number of important watershed reports in the last few years.

- 3.2.6 High profile academic groups and individuals include the University of Leeds Institute for Transport Studies, and Phil Goodwin at University College London who acted as a special adviser to Government during the preparation of the 1998 White Paper, Stephen Joseph of Transport 2000 and David Begg, Chair of the Commission for Integrated Transport.
- 3.2.7 The media in all its forms and the travelling public.

3. Socio-economic and political factors

- 4.1 Transport is an important sector of the economy. In the UK, over two million people are employed in road transport, vehicle manufacturing and retailing. Major transport companies include Railtrack and Stagecoach. The major oil companies such as Shell and BP also have a strong influence on the sector.
- 4.2 In 1960, only 30% of British households owned a car whereas today, 72% have at least one. By comparison with the USA and some European countries, notably Germany, France and Italy, car ownership in the UK is still fairly low although car use is high and is forecast to rise even further. By the year 2010, road traffic is forecast to increase by 22% (DETR, 2000).
- 4.3 The interaction between transport and the environment has gained high profile in recent years and this has impacted on public attitudes. Much of this is due to the direct action protest groups, which emerged during the construction of the M3 extension at Twyford Down, the Newbury Bypass, and other local bypasses and road improvement schemes around the country. Conversely, many motorists are car-dependent, especially in rural areas, and are open to influence by the media through advertising by car manufacturers, television programmes such as Top Gear, and numerous motoring magazines. The Autumn 2000 fuel crisis demonstrated that there is not necessarily a good understanding of the relationship between transport, especially use of the car, and the environment.
- 4.4 Nevertheless, it is generally agreed that traffic growth cannot simply be addressed by building more roads. Instead, there is an urgent need to manage the demand for road space and provide a greater choice of alternatives by improving public transport. The 1998 White Paper established a helpful framework, but ultimately, it will require a change in people's lifestyles. Growing public concerns over transport problems including fuel prices and rail network safety have led to transport becoming a major political issue within Government and between the political parties. This is likely to continue to be the case through to the next General Election and beyond
- 4.5 The rapid increase in air travel has led to a demand for new airports and an expansion to the infrastructure of existing ones. Regional Airport Studies are looking into the future of air travel in the different regions and possible location of new airports within them. There is ongoing debate over the need for a tax on aviation fuel and how it might be implemented.

- 4.6 The collapse of Railtrack and the problems with infrastructure that the rail industry is experiencing, has caused uncertainty over the future of the rail system in the U.K. This has impacted on the levels of public confidence in travelling by train and the future levels of investment which the rail system might attract.
- 4.7 Research issues currently of interest include the examination of people's attitudes and behaviour in relation to transport, for example in relation to motivating individuals to change their modes of travel.
- 4.8 Issues which might change the sector in the next five years include:
- the increasing importance of regional institutions in strategic transport planning;
 - restructuring the rail industry in the wake of the collapse of Railtrack;
 - Government's 2002 review of the 10 Year Plan progress;
 - regional aviation studies leading to an Aviation White Paper in 2002;
 - speeding up delivery of major infrastructure projects and changes to the new planning system under the 2001 Green Paper;
 - increased integration of appraisal and the emergence of social and health impact assessment;
 - modernisation of EIA guidance (Volume 11 of the Design Manual for Roads and Bridges);
 - measures to address congestion and pollution such as road tolls, congestion charging and fuels prices;
 - emphasis on a modal shift for freight transport.

4. Impacts on nature conservation

- 5.1 Transport has a wide variety of environmental effects at local, national and global scales. The main adverse effects on biodiversity include:
- direct loss of wildlife habitats and associated species through landtake by transport infrastructure, particularly roads, railways and airports;
 - severance and fragmentation of habitat where a transport scheme creates a barrier, divides existing habitats and disrupts management regimes;
 - disposal of soil from construction of tunnels and cuttings plus contaminated products from maintenance of balancing ponds.
- 5.2 Other indirect or secondary environmental effects include:
- emissions of a wide range of air pollutants such as carbon monoxide, volatile organic compounds, nitrogen oxides and particulates;
 - emissions of the primary greenhouse gas, carbon dioxide;
 - disruption to local hydrology and adverse effects on wetlands and other hydrologically-sensitive habitats;
 - pollution of local watercourses through run-off from roads including oil, de-icing salt, particulates and accidental spillage;

- wildlife mortalities (e.g an estimated 5000 barn owls and 47000 badgers are killed on British roads every year);
 - noise disturbance, which has adverse effects on breeding bird populations;
 - artificial lighting, which can disturb birds, bats and invertebrates;
 - use of non-renewable resources, such as primary aggregates and land and fossil fuels.
- 5.3 Construction work impacts on the environment in many ways, each one compounding the effect further, and this applies whether there are several schemes or just one in an area. Roads built either in their own right (especially in a transport corridor), or as part of another development (particularly bypasses) can also be significant.
- 5.4 There is potential for conflict of interest between the various proposals for integrated transport and the development of new initiatives. For example, rail projects designed to take traffic off roads may include the use of once-redundant rail courses. These will invariably have acquired nature conservation interest by virtue of not having been subjected to agricultural improvement unlike the surrounding intensively farmed land, or in urban areas where they may have value as green corridors. Similarly, disused canals opened up for freight or recreational use are also likely to have nature conservation interest.
- 5.5 It may be possible to minimise or alleviate potential damage to wildlife and natural features through mitigation. This can include realigning proposed routes or relocating proposed infrastructure to minimise impacts. The use of bridges, viaducts, underpasses and tunnels can be valuable as wildlife crossings, and the translocation of habitats and species are measures which may help to safeguard wildlife, but the success rate of such measures is variable. Increasingly, transport promoters are offering compensatory habitats to offset losses.
- 5.6 Transport has the potential to deliver environmental gains in a number of ways, an issue which is taken account of in the GOMMMS (Guidance on the Methodology for Multi Modal Studies) appraisal process. For example, infrastructure developments can create positive opportunities for biodiversity enhancement. Roadside verges often contain wild flowers, native grasses, ferns and mosses, and may be important refuges for some wildlife. There is considerable potential in managing railway tracksides, cycle networks and airports for biodiversity. Road drainage can create important wetland features such as holding ponds and marshes. New road and rail projects can offer significant scope for geological enhancement through the creation of temporary or permanent geological exposures and opportunities to learn more about geological conservation.

5. Sectoral objectives

- 6.1 Transport is vital to sustainable development and is central to the sustainability debate. English Nature's vision is for the development of transport systems, which take full account of sustainable development principles in their design and operation. The key is using the 1998 White Paper and 10 year Plan to deliver a more sustainable transport system and encourage sustainable transport patterns. Broad transport policy objectives need to be set from which more precise targets can be drawn including

those relating to the environment. In biodiversity terms this means avoiding damage to important and irreplaceable wildlife assets, minimizing and compensating fully for other unavoidable effects, and making a significant contribution to the delivery of national nature conservation objectives.

- 6.2 As the Government's statutory adviser on nature conservation, English Nature's role is to clarify the potential scale of environmental impacts to help decision-makers seek the best environmental solutions to meet people's travel needs. Our input to Government thinking needs to cover the policy framework, drawn from our knowledge of sustainability and environmental economics, and ally this with our knowledge about nature conservation.
- 6.3 Our overall aim is to influence the development and implementation of DTLR's integrated transport strategy to ensure that it delivers gains in biodiversity and Earth heritage conservation, through for example, the use of carefully designed economic instruments. We will achieve this through:
 - 6.3.1 proactive liaison, participation in DTLR and Highways Agency project groups, responses to central government and other consultations, and scheme-level casework;
 - 6.3.2 continuing to help DTLR develop and refine its New Approach to Appraisal (NATA) and Guidance on the Methodology for the Multi-Modal Studies when applied to rail, airports, inland waterways as well as roads, to ensure that full and proper weighting is given to biodiversity and geological conservation issues in decisions over individual schemes;
 - 6.3.3 contributing to regional and local transport planning through involvement in the preparation of Regional Transport Strategies (part of Regional Planning Guidance) and Local Transport Plans;
 - 6.3.4 working with the Highways Agency, nationally and locally, and highway authorities at a local level to develop and implement good practice within scheme design implementation and maintenance. and in particular to raise awareness of the opportunities for geological conservation;
 - 6.3.5 working with transport promoters such as Railtrack and Central Railway, to encourage high environmental standards and greater consideration of biodiversity and geological conservation in their planning processes and individual projects;
 - 6.3.6 engaging with authorities, such as the Civil Aviation Authority, to seek better outcomes for nature conservation through, for example, the establishment of more Bird Sanctuary areas;
 - 6.3.7 generating support for our agenda through working with other allies and partners;
 - 6.3.8 developing our own green travel plans as part of our environmental management programme.

- 6.4 At present, there are no Statements of Intent between English Nature and organisations from the transport sector, although Memorandums of Understanding with the Highways Agency, Railtrack and Central Railway (the company proposing a new freight and passenger railway line from Liverpool to Lille via the Channel Tunnel) are under consideration. Options for English Nature to influence the sector lie mainly with DTLR, regional government, the Highways Agency (through its National and four Regional Environmental Committees), local authorities, the Local Government Association, Transport 2000 and potentially, the rail regulator.
- 6.5 Since the 1997 change of Government, the statutory environmental bodies have been given a useful 'inside track' in developing policy and practice. This occurred with the development of the New Approach to Appraisal guidelines which were first used for the Roads Review during 1997/8, and has continued with the work to make this methodology applicable to all forms of transport and at a range of levels from the scheme-specific to the strategic (Guidance on the Methodology for Multi-Modal Studies). English Nature has unofficial observer status on Transport 2000's Action Roundtable and regularly attend their meetings. Furthermore, English Nature has established a group comprising the Statutory Bodies (English Nature, Countryside Agency, English Heritage, Environment Agency) and a number of the Non-Governmental Organisations (CPRE, National Trust, Transport 2000 and others) to exchange information and best practice. Working with the voluntary sector, particularly RSPB and the WTs is important in local casework.
- 6.6 External information sources include the 1998 Transport White Paper, *A New Deal for Transport*, the 10 Year Plan *Transport:2010*, the RCEP 1994 report *Transport and the Environment* and *Transport Statistics Great Britain 1998*. Internal sources include English Nature's 2000 *Position Statement on Environmentally Sustainable Transport, Biodiversity and Environmental Impact Assessment: A Good Practice Guide for Road Schemes*, published by RSPB, English Nature, WWF and the WTs in 2000, *Roads and nature conservation: guidance on impacts, mitigation and enhancement*, published by English Nature in 1994, and English Nature's Research Report no.178 entitled *The significance of secondary effects from roads and road transport on nature conservation*.
- 6.7 Other English Nature research topics include:
- Review of Possible Future Inland Transport Policy and Structural Changes
 - The Relationship Between Economic Growth and Transport Growth
 - Rail Construction and Operational Effects on Biodiversity and Geological Interests

6. Summary of priority actions for 2001 to 2003 and key messages, key shapers, key players and English Nature lead teams' individuals for each priority action

Priority actions and key messages	Key shapers	Key players	English Nature lead team/individual
T1. Influencing the national management and delivery of the Government's 10 Year Transport Plan to ensure that it delivers gains for biodiversity and Earth heritage interests.	DTLR Highways Agency Commission for Integrated Transport	SACTRA RCEP Transport 2000	Environmental Impacts Team (David Markham, Toby Wilson, Jonathan Burney) Chairman, Chief Executive, Directors (Sue Collins, Andy Brown) General Manager (Shaun Thomas)
T2. Influencing the outcome of the Regional Transport Strategies, Multi-Modal Studies, Local Transport Plans and individual transport schemes to ensure that sufficient account is taken of biodiversity interests, through for example, the use of NATA (New Approach to Appraisal) and a creative approach to solutions that meet economic, social and environmental objectives.	DETR Highways Agency	Government Offices Regional Assemblies Transport 2000 NGOs, particularly RSPB and WTs Railtrack	Environmental Impacts Team (David Markham, Toby Wilson) Regional coordinators Regional transport leads Local transport leads
T3. Developing our relationships with the Highways Agency, Railtrack, Sustrans, other potential business partners and key transport promoters from the private sector such as Central Railway, to encourage them to achieve high environmental standards and good practice within scheme designs and in the management of their estate.	Government Offices LAs Highways Agency Railtrack Sustrans	RDAs NGOs Industry and transport lobby groups General public	Environmental Impacts Team (David Markham, Toby Wilson) General Managers (Shaun Thomas and James Marsden)

Annex 1. Services for delivery of priority actions

A table reviewing the services through which English Nature will delivery the priority actions for this sector.

Priority Action	Service			
	Regulator	Enabler	Advisor	Promoter
T1. Influencing the delivery and implementation of the Government's 10 Year Plan to ensure that it delivers gains for biodiversity and Earth heritage interests.			✓	✓
T2. Influencing the outcome of the Regional Transport Strategies, Multi- Modal Studies, Local Transport Plans and individual transport schemes to ensure that sufficient account is taken of biodiversity interests.			✓	✓
T3. Developing our relationships with the Highways Agency, Railtrack, Sustrans, other potential partners and key transport promoters from the private sector such as Central Railway to encourage them to achieve high environmental standards and good practice within scheme designs which reflect local character.			✓	✓

Annex 2

The following is an extract from English Nature's response to the Government's sustainable development strategy consultation in 1994.

Subject Area : Transport

Damaging practices/trends

- Road construction frequently damages important natural and semi-natural habitats.
- Road transport is the major contributor to air pollution (CO, CO₂, NO_x) and is the fastest growing sector.
- Road transport is the major consumer of energy; 38% of aggregate extraction is for road construction and maintenance.

Opportunities to enhance nature conservation

- Emphasis on public transport.
- Habitat (re)creation to compensate for loss.
- Native wildflower seeding on embankments and roadside verges to enhance use of roads as wildlife corridors.
- Creation of geological exposures for teaching purposes.

Vision for 2000

- No impact on SSSI and other important nature conservation sites.
- EA of transport policy and programmes, ensuring an environmentally-sensitive transport policy.
- Full EA of options at project level.
- A national strategy which has built-in sustainability constraints.
- Compensatory projects for replaceable losses.
- Demand management to control growth including full range of measures to restrict traffic in city centres and sensitive areas within the countryside.
- Use of secondary/recycled aggregates where maintenance or new infrastructure is required.
- Setting and meeting criteria to reduce private vehicle numbers.
- Developing alternatives to petrol-driven vehicles.
- Promoting rail, water, pedestrian and cyclists and other public transport forms- setting targets to be achieved.
- Completion of the road building programme.

Limits/targets/enhancements

5 years

- Reduce gaseous emissions (in particular CO₂) by x million tonnes.
- Reduce production/extraction of primary aggregates.
- No damage to statutory nature conservation sites.

10 years

- Stiffer targets for reduction of gaseous emissions and aggregate production.
- Development of vehicles with low environmental impact.
- Achieve new patterns of development which better integrate the provision of transport with land use, thereby reducing the need to travel.