



Llywodraeth Cynulliad Cymru
Welsh Assembly Government

*One Wales:
Connecting the Nation*

The Wales Transport Strategy





G/MH/2589/04-08
ISBN 978 0 7504 4447 7

April
A-CMK-22-03-090

Typeset in 12pt
© Crown copyright 2008



Contents

Foreword

Executive Summary i

E.1	How this document is set out	i
E.2	Setting the scene	ii
E.3	Starting point	ii
E.4	Long-term outcomes	ii
E.5	Strategic priorities to focus work	iii
E.6	Delivering and monitoring	iv

Chapter 1 – Introduction: setting the scene 1

1.1	Transport: at the heart of our lives	1
1.2	Sustainable development: the context for transport	2
1.3	Making the Connections	7
1.4	Mainstreaming the commitment to equality	8
1.5	The Wales Spatial Plan	8
1.6	Sustainable transport themes	9

Chapter 2 – The starting point 11

2.1	Transport in Wales today	11
2.2	Summary	31

Chapter 3 – What we want to achieve: outcomes and indicators 33

3.1	Overview of the outcomes	33
3.2	Social outcomes	34
3.3	Economic outcomes	37
3.4	Environmental outcomes	39

Chapter 4 – Focusing our work: strategic priorities 43

4.1	The challenge: balancing our outcomes and sustainable transport themes	43
4.2	A strategic approach: priorities	44
4.3	Reducing greenhouse gas emissions and other environmental impacts	44
4.4	Integrating local transport	46
4.5	Improving access between key settlements and sites	48
4.6	Enhancing international connectivity	50
4.7	Increasing safety and security	51

Chapter 5 – Delivering and monitoring	53
5.1 Delivery	53
5.2 National delivery	53
5.3 Regional delivery	55
5.4 National and regional delivery and the Wales Spatial Plan	55
5.5 Appraisal	56
5.6 Resources	56
5.7 Monitoring	57
5.8 Summary	57
Glossary	59



Foreword



For the first time we have the powers to produce our own vision of what we want transport to be. Our vision is of a strong and confident nation, with efficient, reliable and sustainable links between the north, south, east and west.

We face similar problems to many other countries – how to ensure a proper balance between protecting our environment and improving our economic performance. We can introduce innovative solutions to ensure that there should be no conflict between the two.

We also have to accept that a more mobile lifestyle increases the demand on our transport system, and this demand is currently being met largely by the increased use of cars. Transport needs to play its part in reducing CO₂ emissions and reducing car dependency is a key part of meeting our targets. This will call for better quality and more reliable public transport and better integration between the modes.

We also have our own unique challenges and opportunities. For example, the mountains, valleys and long coast, which are some of our main attractions, can also provide challenges to providing swift road and rail links.

We will use our new powers to develop Welsh solutions, including the development of models for sustainable travel in towns across the nation that can be replicated in our larger cities, swifter rail services between north and south Wales, and by developing the TrawsCambria long distance bus service to ensure all areas of Wales not well served by rail have access to high quality public transport.

One Wales: Connecting the nation is our strategy for transport. It sets out how we intend to achieve our social, economic and environmental outcomes, and reflects a wide range of responses to the earlier consultation. We also set out the five key areas where we need to make substantial progress. These are:

- Reducing greenhouse gas emissions and other environmental impacts;
- Improving public transport and better integration between modes;
- Improving links and access between key settlements and sites across Wales and strategically important all-Wales links;



- Enhancing international connectivity; and
- Increasing safety and security.

Moving from vision to delivery will need continued co-operation between the Welsh Assembly Government and its partners in local government, business and industry and the operators of transport services. We will also need to work with the people of Wales if we are to improve the overall quality of life and opportunities without damaging the environment that we all value.

I look forward to working with you to make our transport system one we can all be proud of.



Ieuan Wyn Jones AM

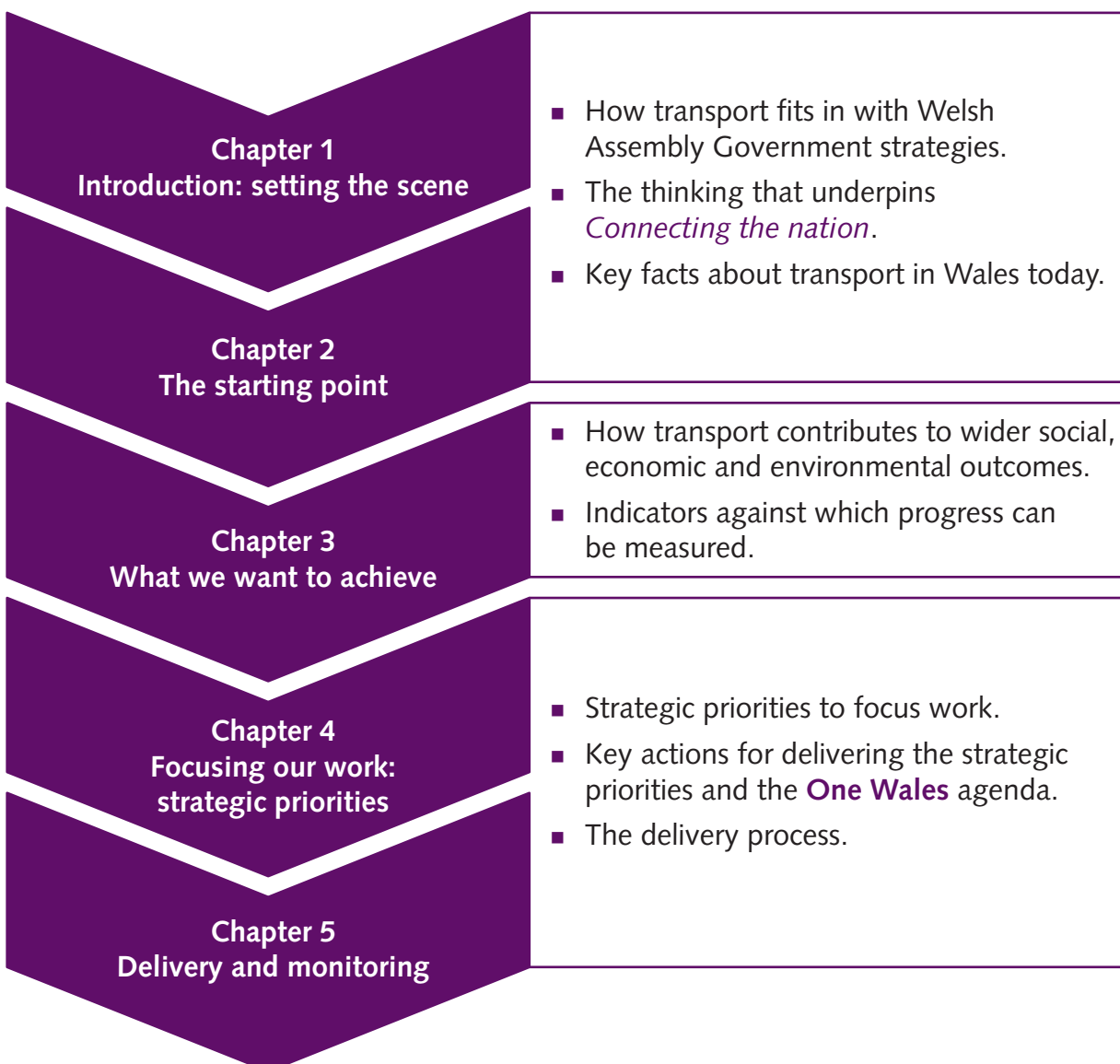
Deputy First Minister and Minister for the Economy and Transport



Executive Summary

Transport plays a key role in shaping our daily lives. The goal of *One Wales: Connecting the nation* is to promote sustainable transport networks that safeguard the environment while strengthening our country's economic and social life. Our transport strategy identifies a series of high-level outcomes and sets out the steps to their delivery.

E.1 How this document is set out



The Welsh Assembly Government is committed to improving the lives of people in Wales and making our nation a better place in which to live and work.

The ambitious and progressive **One Wales** programme is working to achieve a nation with access for all, where travelling between communities and accessing services, jobs and facilities in different parts of Wales is both easy and sustainable, and which will support the growth of our economy. A good transport system is central to achieving a vibrant economy and social justice through equality of access and greater mobility. Moreover, transport must play its part to safeguard the environment and improve the quality of life for everyone, whether or not they are travelling.

E.2 Setting the scene

With new powers comes the opportunity to develop new transport solutions. Chapter 1 sets out how *Connecting the nation* takes its lead from our wider agenda, the Wales Spatial Plan and remit for sustainability. It describes how transport interacts with other high level strategies, such as those for the economy, education, environment, culture, health, social justice and planning.

Connecting the nation ensures that transport features strongly in the Welsh Assembly Government's policy spectrum:

- Getting the most out of our existing transport system;
- Making greater use of more sustainable modes of travel; and
- Reducing demands on the transport system.

Its aim is to enable the Welsh Assembly Government, working in partnership with local government and other stakeholders, to maximise the positive role of transport in shaping 21st century Wales. *Connecting the nation* therefore has a wider ambit than provision of new transport infrastructure. It links decisions on the location of housing, education, health and social care services, employment, retailing and planning with the impacts they will have on the way people travel.

E.3 Starting point

Development of sound actions requires thorough analysis of the challenges we face and evidence of the effectiveness of solutions proposed. Awareness of existing travel patterns, from the 'why' and the 'how' people are travelling to the relative cost of different modes of travel assist development of these solutions.

Chapter 2 highlights the factual background to *Connecting the nation*. It covers the main modes and patterns of travel, provides an overview of environmental impact in terms of greenhouse gas emissions and summarises progress in meeting safety targets.

E.4 Long-term outcomes

Chapter 3 establishes the wider outcomes to which our transport system contributes, setting out ambitions for our social, economic and environmental agendas.

Chapter 3 also specifies indicators for tracking progress on outcomes. We use indicators rather than targets in most cases because of the complex relationships between actions and effects. However, in two cases we will develop new targets. The first is road safety,



One Wales: Connecting the nation long-term outcomes		
Social	Economic	Environmental
<ul style="list-style-type: none"> ■ improve access to healthcare ■ improve access to education, training and lifelong learning ■ improve access to shopping and leisure facilities ■ encourage healthy lifestyles ■ improve the actual and perceived safety of travel 	<ul style="list-style-type: none"> ■ improve access to employment opportunities ■ improve connectivity within Wales and internationally ■ improve the efficient, reliable and sustainable movement of people ■ improve the efficient, reliable and sustainable movement of freight ■ improve access to visitor attractions 	<ul style="list-style-type: none"> ■ increase the use of more sustainable materials ■ reduce the contribution of transport to greenhouse gas emissions ■ adapt to the impacts of climate change ■ reduce the contribution of transport to air pollution and other harmful emissions ■ improve the impact of transport on the local environment ■ improve the impact of transport on our heritage ■ improve the impact of transport on biodiversity

where we have experienced success but can still make improvements. The second is for greenhouse gas emissions, where we are committed to developing a target for those parts of the transport sector within our remit, as part of a wider commitment to reduce emissions.

E.5 Strategic priorities to focus work

Chapter 4 sets out how long-term outcomes are grouped in order to focus our work and ensure that it secures a net improvement. These will determine priorities for the next four to five years so that our **One Wales** commitments form a focus for the long-term outcomes. The groupings are based on the responses from the consultation on *Connecting the nation* and recommendations from the environmental report.

The priorities provide additional strategic direction for work towards the long-term outcomes, and maximise the scope for local solutions to transport challenges within a consistent national framework. They will form the focus for a subsequent National Transport Plan and four Regional Transport Plans, which will set out in detail how the outcomes are to be achieved.

The priorities will cover:

- reducing greenhouse gas emissions and other environmental impacts;
- integrating local transport;
- improving access between key settlements and sites;

- enhancing international connectivity; and
- increasing safety and security.

A series of key actions is set out for each of the strategic priorities.

E.5 Delivering and monitoring

Chapter 5 describes how the outcomes, through the strategic priorities, will be achieved by the Welsh Assembly Government at national level, the Regional Consortia at regional level and the local authorities at local level. Detailed plans will be set out in the National and Regional Transport Plans. Specific solutions to transport challenges may well involve working in partnership with service providers and operators.

Co-ordinated working across traditional boundaries will help to ensure success, with strategic priorities shaping local authority planning and the Welsh Assembly Government's wider policy agenda. Progress will be monitored using the indicators set out in Chapter 3. We will also take advantage of links to data collected for other purposes.



Chapter 1 – Introduction: setting the scene

One Wales: Connecting the nation has a key role to play in delivering the Welsh Assembly Government's strategic agenda. Transport is vital for a wide range of economic, social and environmental outcomes. It is important, therefore, that these proposals support our existing and emerging strategies in an integrated way.

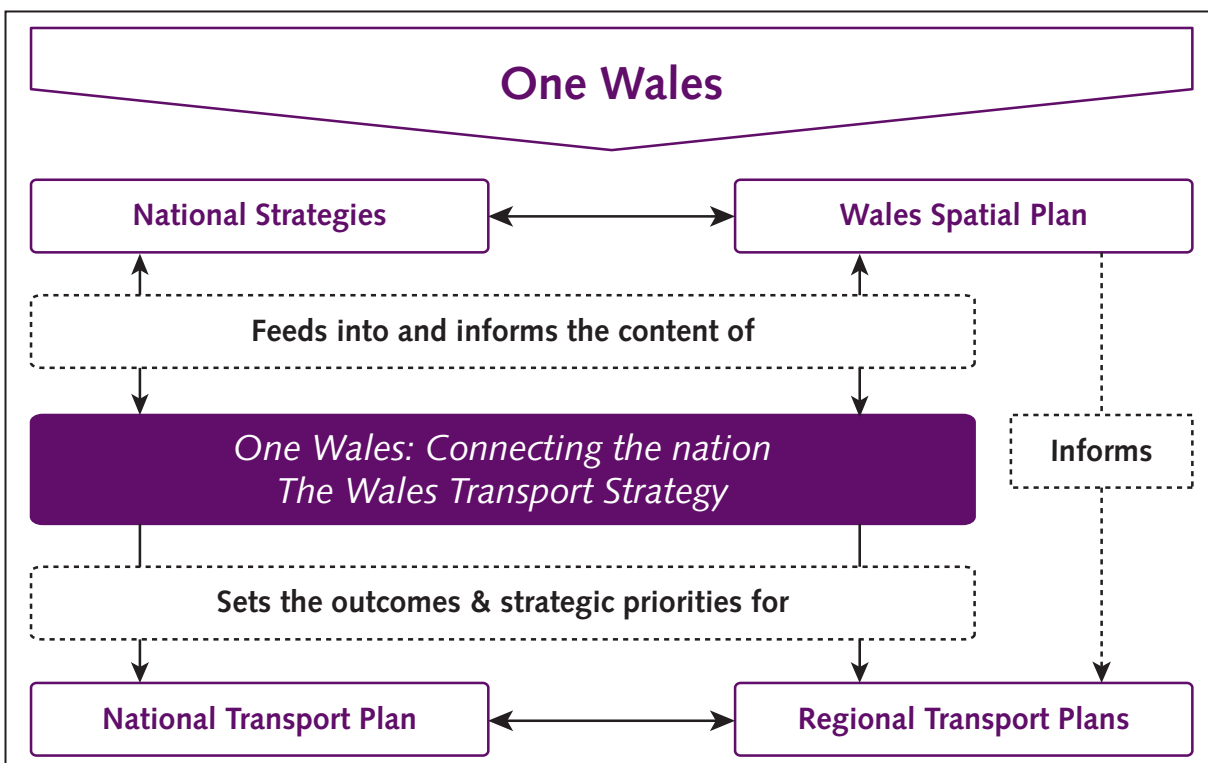
This chapter summarises the wider policy context of *One Wales: Connecting the nation*.

1.1 Transport: at the heart of our lives

Transport is essential for many aspects of daily life. It provides opportunities for people to gain access to jobs, leisure and social activities as well as vital services, including education and health. Crucially for economic prosperity, it connects businesses with their customers and suppliers. However, transport activities can also have profound effects on our environment, communities, and even our health.

Connecting the nation seeks to provide a stable, long-term framework. It deals with the development of all modes of transport – the road network, railways, coaches and buses, air and water – as well as implications for other policy areas. It specifies the outcomes and strategic priorities that link the Wales Spatial Plan, the Welsh Assembly Government's wider strategies and the development of plans at the local level (Figure 1).

Figure 1 *Connecting the nation* sets out how transport can contribute to Welsh Assembly Government strategies and the Wales Spatial Plan



Its objectives will be delivered by integrating key proposals with broader national policy areas, and through the National Transport Plan and Regional Transport Plans.

The National Transport Plan will set out in more detail how the Welsh Assembly Government will deliver those areas of transport for which it is responsible. The Regional Transport Plans will set out how the Regional Consortia will contribute to delivery at the local level.

As shown in Figure 1, *Connecting the nation* has a key role to play in ensuring the success of strategies developed for other policy areas. Because of its impact on every area of life, there is a need for a long-term, sustainable vision for a fully integrated system of transport. Figure 2, below, illustrates how *Connecting the nation* links with other areas.

Figure 2 *Connecting the nation* links to high level strategies

Policy area	<i>Connecting the nation</i> seeks to:
Culture and tourism	Ensure transport links contribute to Welsh culture and identity, help to build strong communities and maximise accessibility to sports, cultural and recreational facilities.
Economy	Create high-quality networks across Wales, improve business productivity and tackle the problem of poor access as a barrier to economic activity. Improve access to employment and the movement of goods and services.
Education, training and skills	Improve access to education and training with good transport opportunities.
Environment	Maximise the positive contribution transport makes to the environment and minimise the negative impact. In particular, ensure that transport plays its part in tackling climate change.
Health	Help promote healthy lifestyles such as more walking and cycling for short journeys. Reduce air pollution from traffic. Improve access for all to health services and facilities.
Planning	Maximise the consideration of access during the planning of new services and facilities. Influence and alter travel patterns, promote sustainable travel and contribute to environmental improvements.
Social justice	Maximise the contribution transport can make to promoting social inclusion, including access to services and helping to develop stronger and safer communities.

1.2 Sustainable development: the context for transport

The Welsh Assembly Government is committed to developing a sustainable future for Wales. We are determined to secure positive change, ensuring cohesive interaction of social, economic and environmental improvements. Our approach accords with the Welsh Assembly Government Sustainable Development Scheme and the UK's 'Shared



Framework for Sustainable Development to 2020, One Future – Different Paths' (2005). This means working to five shared principles:

- promote good governance;
- use sound science responsibly;
- ensure a strong, healthy and just society;
- work to achieve a sustainable economy; and
- live within environmental limits.

Transport policy can contribute to a sustainable future by helping to promote healthy living and supporting a strong and prosperous economy. It can also support efforts to tackle inequality arising from issues of race, age, gender and disability, as well as helping tackle poverty, lack of opportunity and social injustice. This is reflected in our commitment to the principle of equal opportunity for all. We recognise that there is still much more work to be done before all transport modes can demonstrate that they genuinely meet the needs of all sections of the community.

We fully recognise the impact of transport on the social, economic and environmental fabric of our nation. We will use sound analysis, evidence and science to develop solutions to local and national issues. Good governance will be promoted through partnership between the Welsh Assembly Government, Regional Transport Consortia and transport operators¹.

1.2.1 Social

Transport plays a central role in our daily lives. Its availability and accessibility influence where people live and work, their leisure options, and their opportunities to interact with friends, family and the wider community.

The success of the Welsh Assembly Government's equality and social justice agenda depends to a significant degree on the effectiveness of the system of transport. Good access to public transport is essential to increase the life chances of the most disadvantaged and people living in deprived communities.

Ensuring sustainable access – especially by public transport, walking and cycling – is an integral element of planning new services and facilities. Where services and facilities cannot be provided in the immediate locality, transport services can contribute to our social justice agenda by:

- Helping more people into jobs and creating better jobs and skills
 - ◆ Improving the transport system to increase access to jobs or education.
- Improving health
 - ◆ Improving access to health services and to healthy leisure opportunities.
 - ◆ Increasing use of healthier and more sustainable modes of travel, such as walking and cycling.

¹ The development of *Connecting the nation* made use of the data collected by and recommendations of the Environmental Report, and Habitats Regulations screening.

- ◆ Reducing air and noise pollution from transport.
- Developing strong and safe communities
 - ◆ Improving access to arts, music, theatre and cultural activities.
 - ◆ Ensuring that transport schemes help strengthen communities and make a positive impact on local environments.
 - ◆ Considering transport implications when locating services and facilities required by vibrant communities.

Improved transport accessibility goes beyond enhancing current provision. It includes consideration of the needs of all groups in society, regardless of gender, age, disability, race, sexual orientation, religion or belief.

This requires that people are not disadvantaged by the design, accessibility and availability of facilities and services – or by poor physical access to different types of transport or by the way information is provided and communicated. It also means paying attention to the issue of actual and perceived safety and security on the transport system because some people are deterred from using the network by such concerns.

Our approach is consistent with the Welsh Assembly Government's recognition of the social model of disability, where disadvantage and social exclusion are caused by artificial barriers to inclusion. We will seek to monitor the effects of the policies and outcomes set out in Chapter 3 on all groups within society.

1.2.2 Economic

Transport supports the economy by connecting businesses with suppliers and customers, and enabling people to travel to work. It is critical for both manufacturing and service based businesses, although their needs vary. Congestion costs businesses many millions of pounds a year – and improved transport, especially its reliability, is cited consistently by Welsh businesses as one of their top priorities.

An efficient and effective transport system helps increase the number of people wanting to live, work and spend leisure time in Wales, which in turn builds strong and vibrant local economies.

Effective movement of freight also makes Wales an attractive place to do business. Freight logistics accounts for some six per cent of employment in Wales and the industry contributes approximately £2.5 billion to the Welsh economy, making it a vital part of wealth creation.

Improved access to education and employment also contributes to our country's long-term prosperity. Poor access is one of the major barriers facing the jobless – particularly in the Valleys and rural parts of Wales.

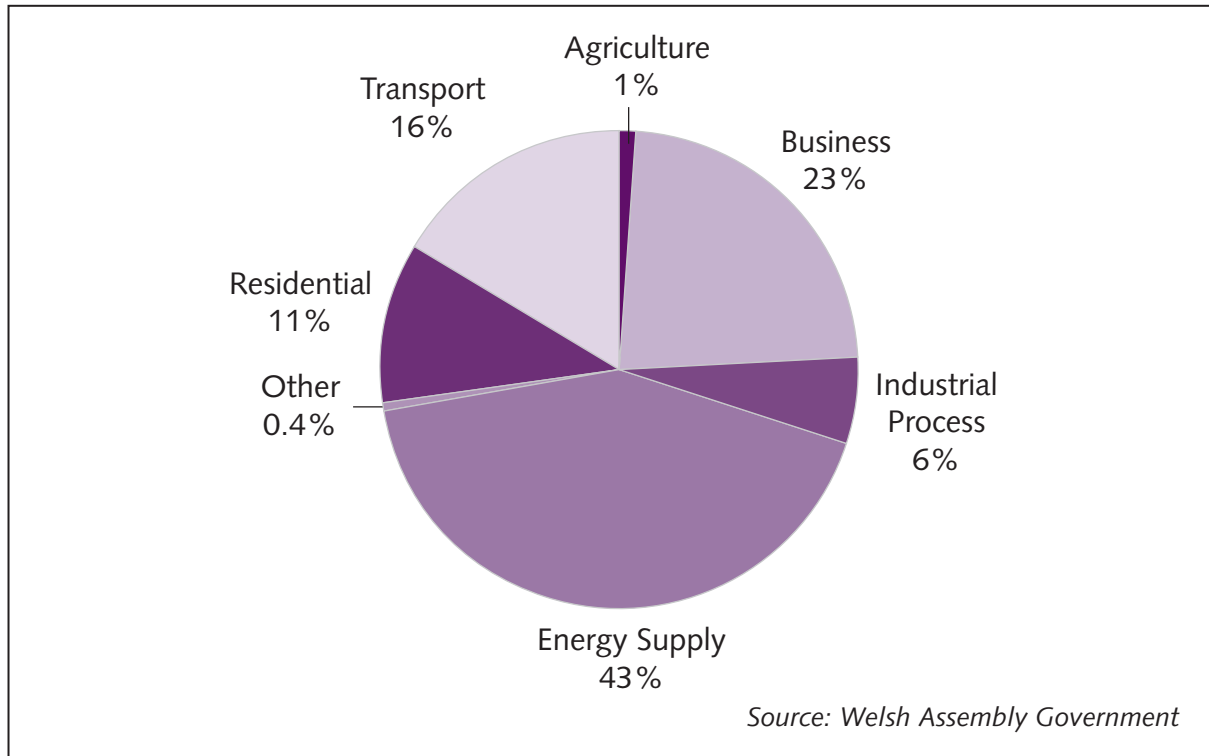
1.2.3 Environmental

We are committed to working for a sustainable future and tackling the threat of climate change. *Connecting the nation* recognises that climate change has profound implications for the economy and for the well-being of people in Wales and across the world.



Rising concentrations of greenhouse gases are recognised to be causing global climate change. Transport, through the use of fossil fuels, is one of several key activities that produce greenhouse gases, and accounts for around 16 per cent of CO₂ emissions (around 14 per cent of greenhouse gas emissions) in Wales (Figure 3).

Figure 3 CO₂ emissions, Wales (corrected for global warming potential) by sector, 2005²



Greenhouse gas emissions from transport

Greenhouse gas emissions from transport consist primarily of carbon dioxide (CO₂), nitrous oxide and methane, which are emitted directly from the use of fossil fuels. Of these, CO₂ is the main constituent. CO₂ emissions from road transport have steadily increased since 1990, and depending on the forecasting method used, look set to continue to grow. Emissions of other pollutants such as Nitrogen Oxides (NO_x) and particulates (PM₁₀) are 58 per cent and 44 per cent lower.

One Wales commits the Welsh Assembly Government to achieving annual three per cent carbon-equivalent reductions in areas of devolved competence by 2011 and to setting a specific reduction target for transport.

The Welsh Assembly Government has also committed itself to contributing to the UK's achievement of the Kyoto target and wider UK Government goals on CO₂ emissions:

- Through the Kyoto Protocol, the UK is committed to achieving a 12.5 per cent reduction in its emissions of greenhouse gases by 2008-2012.

² 'Business' includes emissions from industrial and commercial energy sources, as well as from industrial processes. 'Other' includes waste management, public and land use change.

- A 20 per cent reduction in CO₂ emissions below 1990 levels by 2010 and a 60 per cent reduction by 2050, with real progress by 2020.

The Climate Change Bill, which proposes to put the UK Government target of a 60 per cent reduction in CO₂ emissions by 2050 on a statutory basis and establish five-year 'carbon budgets', will also inform how greenhouse gas emissions are tackled in Wales.

Reducing emissions from the transport sector is a key element of *Connecting the nation*. However, mobility is a significant driver of economic growth and social well-being. So, given the growing demand for transport, the reduction of emissions poses a particular challenge.

There is no single solution for achieving reductions from transport. As the King Review³ highlights, emissions can be reduced through the use of technologies that are already available, and by making some smart choices, as individuals, about what, when and how to drive. We have identified four key variables through which we can influence CO₂ levels:

- the number of trips and distance travelled;
- the mode of travel chosen;
- the fossil fuel content of fuel consumed; and
- the fuel efficiency of vehicles.

The Welsh Assembly Government recognises that it is imperative to act now to tackle greenhouse gas emissions. We will immediately prioritise actions that reduce the

Figure 4 Key environmental challenges

Key challenge identified in Environment Strategy	<i>Connecting the nation</i> aims to:
Climate change	Reduce the contribution of transport to greenhouse gas emissions. Adapt to the impacts of climate change.
Environmental hazards	Reduce the contribution of transport to air pollution and other harmful pollutant emissions.
Degraded ecosystems	Reduce the negative impacts of transport on biodiversity and increase the positive impacts.
Loss of biodiversity	
Loss of landscape and heritage quality and distinctiveness	Reduce the negative impacts of transport on our heritage – landscape, townscape, historical environment and Wales' distinctiveness.
Poor quality local environments	Reduce the negative impact of transport on the local environment, including noise pollution.
Unsustainable resource use	Increase the use of more sustainable materials in the maintenance of Wales' transport assets and in the design and construction of new transport infrastructure.

³ *The King Review of low-carbon cars, Part I: the potential for CO₂ reduction, October 2007*



number of trips taken or distance travelled – such as ensuring that new developments take transport implications into account. We will also prioritise actions that influence the mode of travel chosen to make greater use of the more sustainable modes of transport; a focus on travel behaviour could enable a significant number of car trips to be replaced by walking, cycling or public transport. Further work will be undertaken to establish how different sectors can contribute to reduction targets.

We will also continue to take an active role in influencing the fossil fuel content of fuel and the fuel efficiency of vehicles, working alongside those involved in the UK, European and international arenas. This is discussed further in Chapter 4.

The key environmental challenges we face are set out in Figure 4 (left), along with the outcomes in *Connecting the nation* that will contribute to meeting them. These challenges are discussed fully in the Environment Strategy.

Living within environmental limits is not only about tackling the growing problem of climate change. Concerns about impacts from transport and other interventions on environmental resources have led to increased legislation, policy and guidance requirements designed to protect, conserve and enhance these resources.

The Welsh Assembly Government is committed to meeting the relevant legislative, policy and guidance requirements and encourages other transport providers to follow suit.

Assessment of Natura 2000 sites⁴

An example is Article 6 of the Habitats Directive (as transposed into UK law through the Conservation (Natural Habitats etc.) Regulations 1994 as amended), that requires any new plan or project, including development proposals, likely to have a significant impact on a Natura 2000 site is assessed for its implications on that site in view of the site's conservation objectives. If that assessment concludes that the project would have an adverse effect on the integrity of the site it can only proceed, in the absence of alternative solutions, if there are imperative reasons of overriding public interest. In addition, compensatory measures must be taken to maintain the coherence of the Natura 2000 network.

Connecting the nation establishes the policy framework to ensure that environmental considerations are integrated into national transport policy. Transport also has a leading role to play in adapting to the impacts of climate change. Increased flood risk, higher temperatures and more extreme weather events will present new challenges for our infrastructure and we will need to ensure that it is able to cope.

1.3 Making the Connections

Making the Connections: Delivering Better Services in Wales focuses on improving public services, making them more responsive, efficient and accessible to people. The aim is for organisations to work more closely together to provide the best services

⁴ As a matter of policy the Welsh Assembly Government requires public authorities to treat all Ramsar sites and potential Special Protection Areas (pSACs) as “European sites” for the purposes of the Habitats Regulations.

and for communities to be more actively involved in making decisions that shape their future. *Connecting the nation* has been developed with this aim at its heart.

1.4 Mainstreaming the commitment to equality

The Welsh Assembly Government is committed to mainstreaming equality, which is about respecting and integrating diversity and equality of opportunity into everything that it does. *Connecting the nation* will contribute to achieving the Welsh Assembly Government equality goal, through improving equality of access to transport and how people can access sites, services and facilities. *Connecting the nation* also emphasises the importance of planning, particularly during the development of new sites, facilities and services, where accessibility should be a core consideration.

The way in which transport is developed should take into account the different needs of a diverse range of users and enable greater social inclusion through improved accessibility. Many individuals, communities and groups are disadvantaged by the current system. *Connecting the nation* sets out the high-level, long-term outcomes that will address access and accessibility issues.

The barriers to access experienced by different individuals are due to a complex interaction of different factors, emphasising the importance of engaging users during the development/planning process. Engagement with different groups during the development of *Connecting the nation* has highlighted a series of common, high-level issues:

- ◆ the importance of continued engagement with the wider community;
- ◆ the issues around the comparative costs of different modes of travel;
- ◆ the need for joined-up service provision that reflects the needs of users;
- ◆ the need to improve actual and perceived safety and security of the transport system; and
- ◆ the importance of getting street design right.

1.5 The Wales Spatial Plan

The Wales Spatial Plan is the Welsh Assembly Government's high level framework. It sets out what can and should happen where. It goes beyond traditional land use planning and sets out a strategic approach to guide future development. The Plan forms the basis for working between local, regional and national government to meet the Welsh Assembly Government objectives and the Assembly's commitment to sustainable development. The principles of the Wales Spatial Plan⁵ are central to *Connecting the nation* (Figure 5):

Hence the role of the Wales Spatial Plan is to:

- Ensure the Welsh Assembly Government and its partners and agents develop policy in ways that take account of the different challenges and opportunities in the different parts of Wales.

⁵ The Wales Spatial Plan will be updated from time to time to reflect the situation in the regions. However, it is anticipated that the principles underlying the plan will stay the same.



- Provide a basis and momentum for working together on a shared agenda locally, so that the different parts of Wales can establish their own distinctive approaches to meet the objectives set in the strategic plan and the Welsh Assembly Government's Sustainable Development Scheme.

Figure 5 Key principles in the Wales Spatial Plan

Wales Spatial Plan principle	<i>Connecting the nation can:</i>
Building sustainable communities	<ul style="list-style-type: none"> ■ Contribute to the viability and vibrancy of communities. ■ Contribute to the sustainable solution to the challenges around deprivation that contribute to the inequalities between communities.
Promoting sustainable economies	<ul style="list-style-type: none"> ■ Support economic growth while being sustainable. ■ Improve the reliability and efficiency of the transport network in order to strengthen the links between businesses, customers and suppliers. ■ Link centres for innovation across Wales to wider markets.
Valuing our environment	<ul style="list-style-type: none"> ■ Reduce its contribution to greenhouse gas emissions. ■ Preserve and enhance both the natural and built environment.
Achieving sustainable accessibility	<ul style="list-style-type: none"> ■ Balance the social, economic and environmental impacts of travel while enhancing accessibility. ■ Tackle the challenge of benefiting from larger networked regions while reducing the negative impacts of travel.
Respecting distinctiveness	<ul style="list-style-type: none"> ■ Preserve and enhance those features that make Wales and its regions distinctive when seeking to enhance future economic competitiveness and social and environmental well-being. ■ Help to sustain a cohesive identity for the country at the same time as recognising and valuing local and regional distinctiveness, including the Welsh language and different historical characteristics.

1.6 Sustainable transport themes

Connecting the nation can make its greatest contribution to the Welsh Assembly Government's commitments by dealing with the impacts of transport on society, the economy and the environment. The relationship between these factors is complex and there are sometimes conflicts between the underlying objectives.

To support integrated policy development across the strategic agenda, it is possible to identify sustainable transport themes that can act as a prism through which transport policy is considered. These themes underpin *Connecting the nation*:

- **Achieving a more effective and efficient transport system**

Present methods of travel in Wales place significant demands on the transport system and in some cases demand exceeds capacity. Improved effectiveness and efficiency will mean a reliable transport system – one that helps provide the best service, equal access and best value for money for people and businesses.

- **Achieving greater use of the more sustainable and healthy forms of travel**

At present the dominant mode of travel across Wales is the private car. For some people, in rural areas in particular, the car is often the only realistic mode of travel. However, promoting greater use of the more sustainable and healthy modes of travel (walking, cycling and public transport), which include making them a more attractive option, will help reduce environmental impacts, improve health and well being, and enhance opportunities for all.

- **Minimising demands on the transport system**

To avoid future access problems, it is vital to consider sustainable accessibility early in the planning process. New developments should, wherever possible, be located at sites already well served by walking, cycling and public transport links, or where such services are provided up front as part of the development.

Existing demands on the transport system reflect the locations of homes, employment, shops and leisure facilities. We aim to reduce those demands, for example by encouraging home-working, flexible working hours, and tele-conferencing as well-as full integration of sustainable modes of transport into developments.



Chapter 2 – The starting point

Wales has a transport system that reflects our country's distinctive geography and history, with people travelling for a wide range of purposes. Today, the car is the dominant mode of travel, accounting for most journeys, traffic and fuel consumption.

At the end of the twentieth century, public transport was in decline but now shows signs of recovery. Use of the railway network continues to increase, with demand outstripping supply in some areas. Walking and cycling account for only a small proportion of distance travelled, but have significant potential for increasing sustainable travel and improving people's health.

This chapter examines the overall transport environment in Wales, covering: emissions from transport; travel patterns and modal choice; safety; traffic and potential traffic growth; freight; air travel; and public and community transport.

2.1 Transport in Wales today

The transport system has evolved over time, originally to take agricultural products to market, and later to move the products of industry to customers. Today we need a transport system that can move freight as well as connect people with services, employment and recreation facilities. Map 1 shows the key national road and rail networks, together with significant ports and airports.

The geography and history of Wales have shaped the transport system of today. The range of mountains and hills that extend from Snowdonia to the Brecon Beacons, and the location of the coal fields, have exerted a dominant influence on the growth of Wales, with principal settlements tending to lie near the coast, primarily in the north and south. The greatest population growth has taken place around settlements in south Wales.

In contrast, mid Wales is lightly populated, with agriculture, tourism and public sector employment featuring strongly in the local economy. North-east Wales has an industrial base with strong cross border links into Cheshire and the Liverpool area. North-west Wales has a mixture of primarily small to medium enterprises (SMEs), businesses in agriculture and tourism, with good east-west road and rail links along the coast but poorer north-south communications. Overall, even including the urban areas, the population density of Wales is just over half of that for the UK.

The decline of mining and heavy industry created a greater need for people to travel away from their communities to find work. For those living outside major employment centres, this often means access to the main inter-urban roads. The largest inward commuting flows are to Cardiff, Newport, Caernarfon and Bangor, while the largest outward flows are from the Vale of Glamorgan, Caerphilly, the Isle of Anglesey and Rhondda Cynon Taf. There is also significant traffic flowing between Wales and England on the main road corridors in the north (mainly the A55) and the south (mainly the

M4). In the south, the Valley lines carry a significant number of commuters from outlying settlements to the main employment centres.

The railway network is experiencing significant levels of commuter patronage all over Wales, especially around larger towns and cities, and in some cases demand exceeds supply. Train operators facilitate predominantly east-west services in the north and south of Wales, with the Heart of Wales line and the Cambrian line serving mid-Wales. North-south rail travel is routed along the Marches line, which lies partly in Wales and partly in England.

The dominant mode of travel in Wales is currently provided by the private car. Local public transport is provided by buses and coaches – for the most part by private sector companies, although three municipally owned bus companies continue to operate. Despite a historic decline in bus and coach travel, there are signs that patronage is starting to increase. Despite the potential benefits, walking and cycling remain a considerably underused option for many people. Over longer distances, the Welsh Assembly Government supports the TrawsCambria service, and there are a number of long distance coach services providing relatively low cost connections to major cities in England.

In recent decades there has been an increasing trend towards centralisation of service provision and a reduction in locally-provided facilities, such as post offices, which can particularly affect rural communities. This creates a dual need to improve access to services in urban areas whilst safeguarding access in rural areas, especially in

Map 1 Key road, rail, port and airport infrastructure





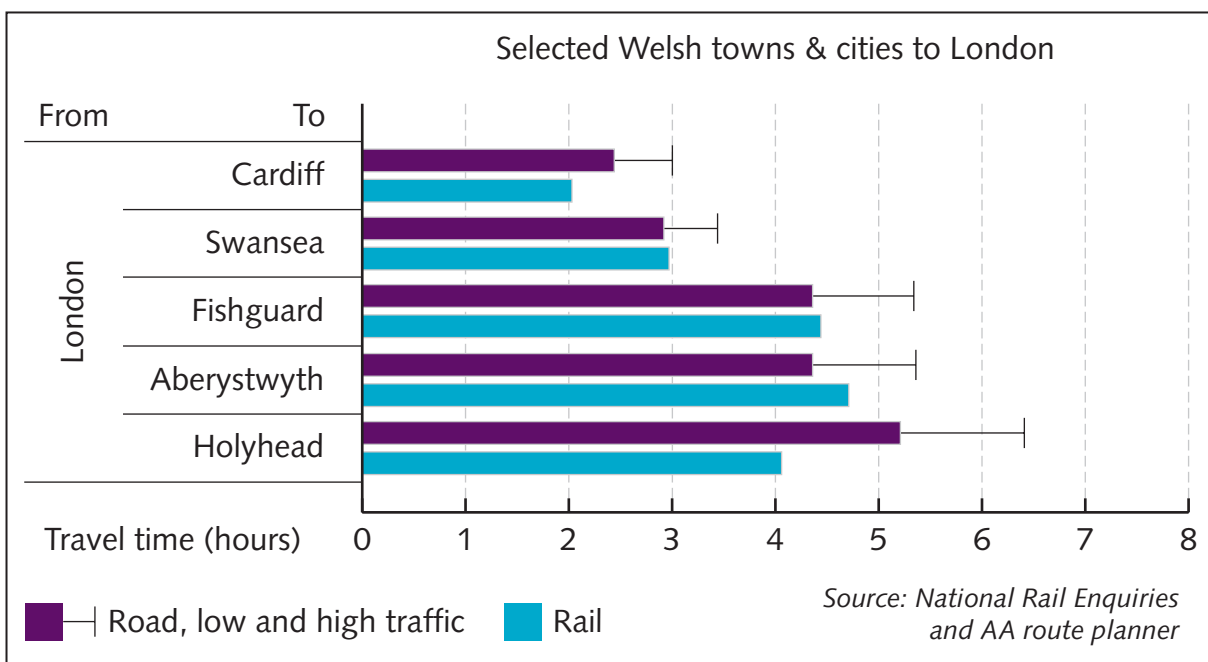
areas distant from larger towns and cities. People living in rural areas spend a higher percentage of their income on transport than those in urban areas.

Combined with distinctive geography, these factors have meant difficulty for travel between north and south Wales, and between rural communities and the larger urban areas. Our country's terrain and sparsity of population have posed a particular challenge for the provision of cost effective public transport services. This is reflected in higher levels of car ownership in rural areas.

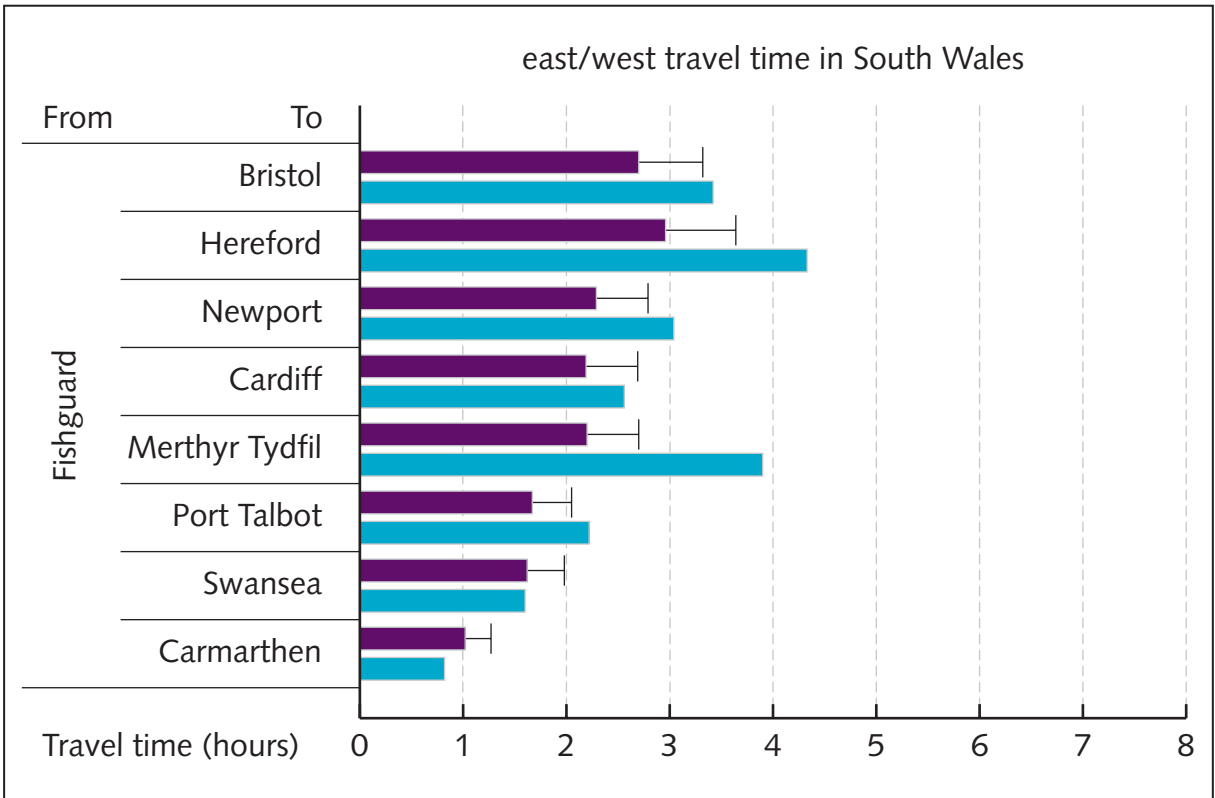
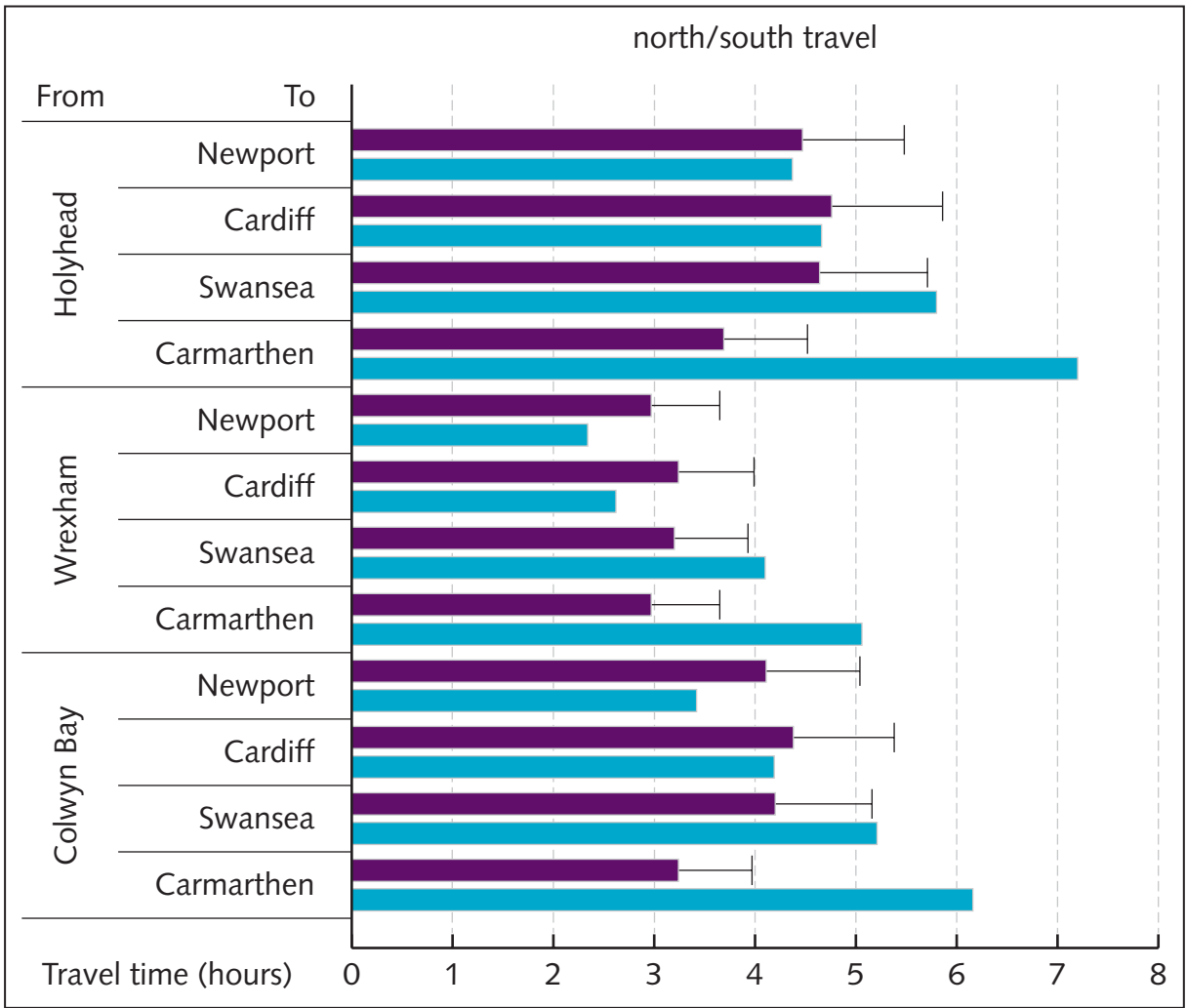
There are relatively few airports in Wales. Cardiff International Airport serves much of south Wales, although passengers travelling to and from Wales make extensive use of airports across the border. The intra-Wales air service, connecting north-west and south Wales, has drastically reduced travel times for some people compared with other modes.

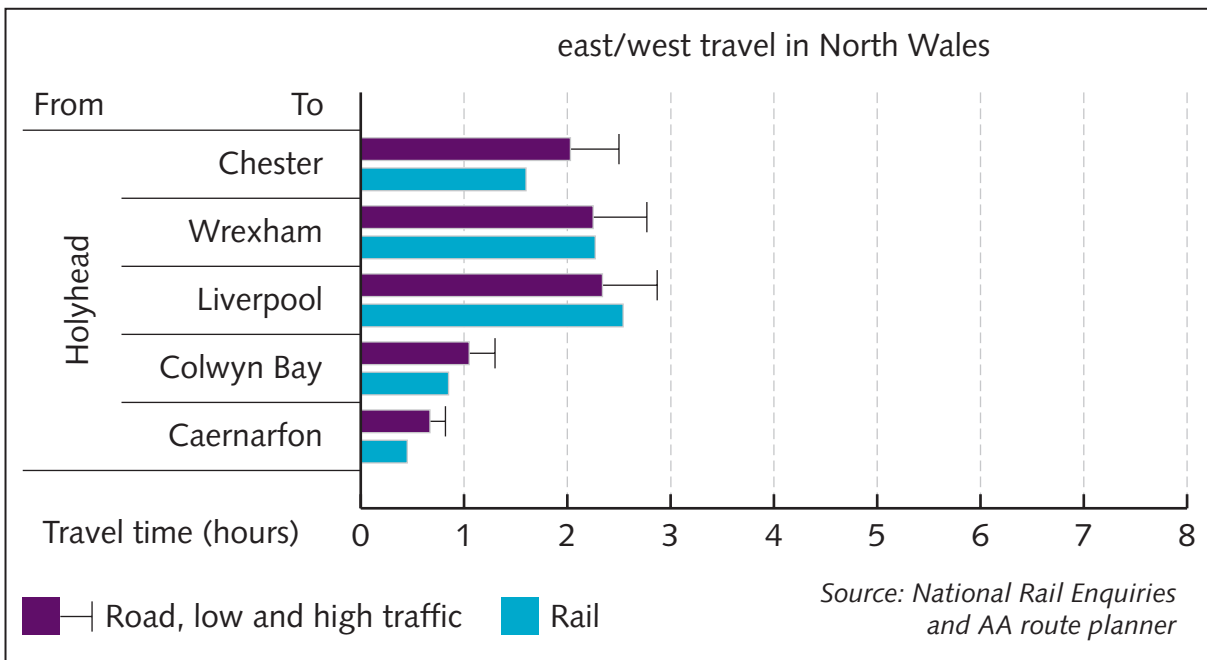
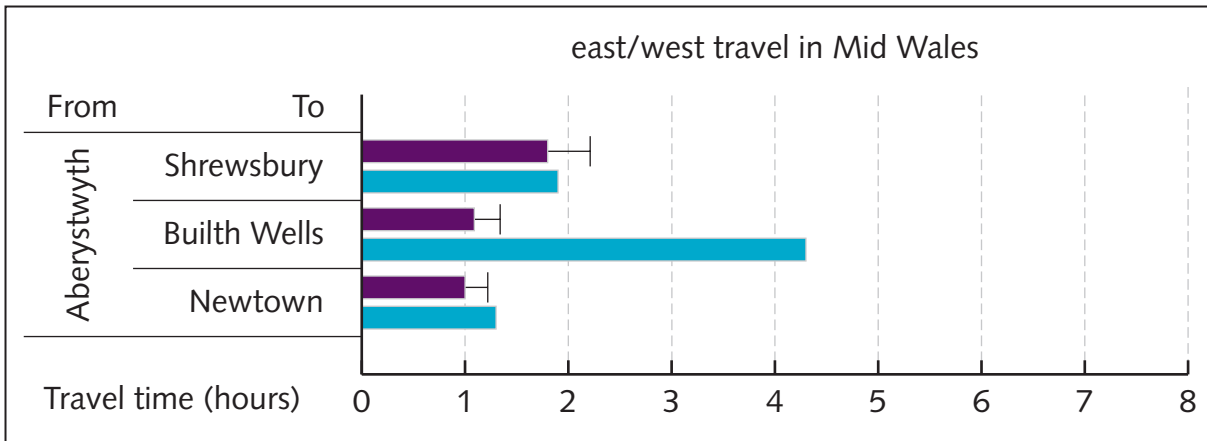
Despite many improvements over the years, the existing network of roads and railways do not always best suit the travel needs of individuals, communities and businesses.

Figure 6 Estimated travel times by rail and road between selected regional towns and cities using trunk road network⁶



⁶ Travel times are indicative and were estimated using: National Rail Enquiries based on 5th July 2007, for the shortest journey after 7.30 (for rail), and by using the AA route planner (road). The AA route planner can calculate travel times for low and high levels of traffic.





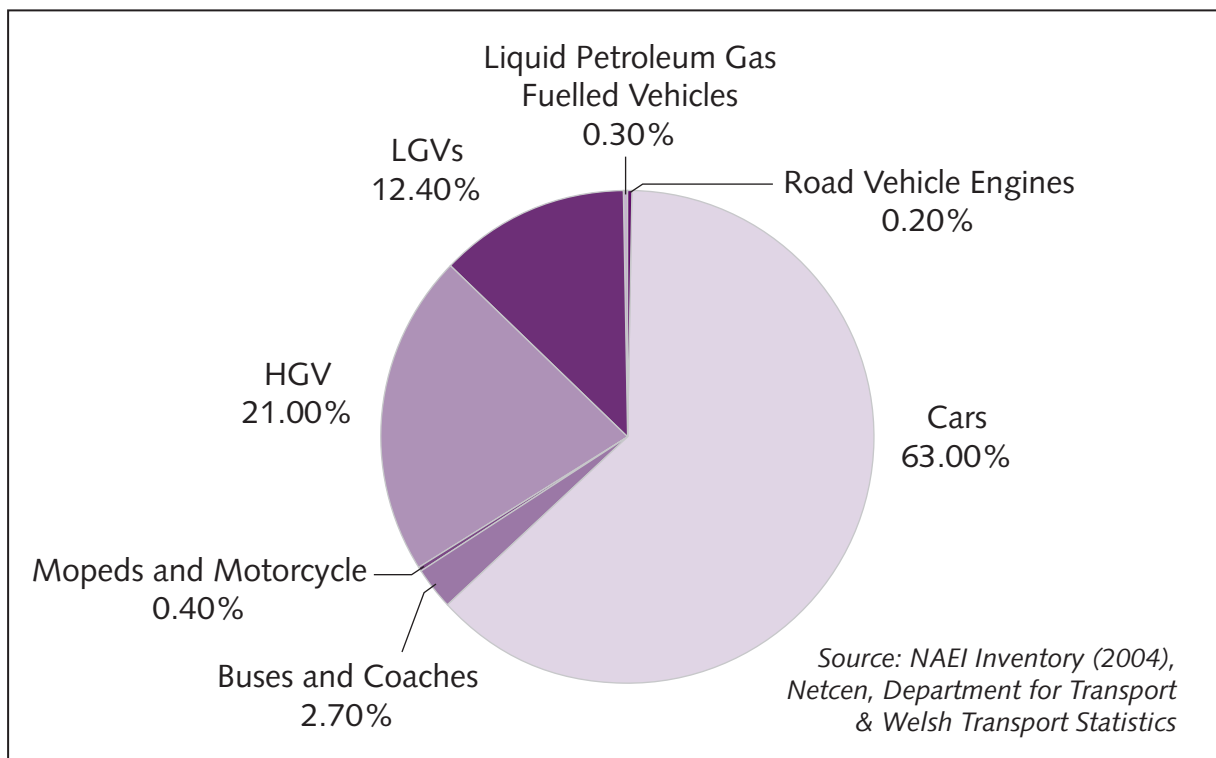
For example, the differences between the north-south road and rail network means that for some journeys travel by road is substantially quicker than by rail (Figure 6). The time advantage of road over rail, and the long journey times that exist between parts of Wales, adds to the challenge of attracting potential passengers to use train services.

2.1.1 Greenhouse gas emissions

Transport accounts for around 14 per cent of greenhouse gas emissions in Wales. Of this, road transport is the greatest contributor, with more than 90 per cent of emissions. Welsh road transport contributes some five per cent of UK road transport's CO₂ output, which is consistent with the population of Wales (4.9 per cent of the UK population). Within road transport, cars contribute nearly two thirds of emissions, with much of the remaining share made up of emissions from goods vehicles (HGVs) and light goods vehicles (LGVs) (Figure 7). When compared by kilometres travelled, goods vehicles produce emissions at a significantly higher rate than cars

2.1.2 Fuel Consumption

Most road vehicles in Wales run on petrol, although the number of vehicles using other fuels (including diesel, gas/petrol and alternatives) has increased since 1998 (Figure 8).

Figure 7 Road transport emissions by vehicle type in Wales, 2004

Actual consumption of the main forms of fuel (petrol and diesel) totalled 1.96 million tonnes in 2004, with goods vehicles and light vans using more fuel per volume of traffic than buses, cars and motorcycles.

Figure 8 Road vehicles licensed, by method of propulsion (thousands)

Method of propulsion	1998	2004
Petrol	1,031.9	1,132.5
Diesel	301.9	481.5
Electric	0.4	0.3
Gas/Petrol	0.3	1.5
Other (inc gas, natural gas and steam)	0.1	1.1

Source: Welsh Transport Statistics, 2006

The Renewable Transport Fuel Obligation will require five per cent of fuel sold on UK forecourts to come from a renewable source by 2010, implying a significantly enhanced role for biofuels. While this switch may produce significant carbon saving – up to 50 per cent compared to fossil fuels – there are important factors to be considered, such as the energy required for cultivation, harvesting, processing and transportation.

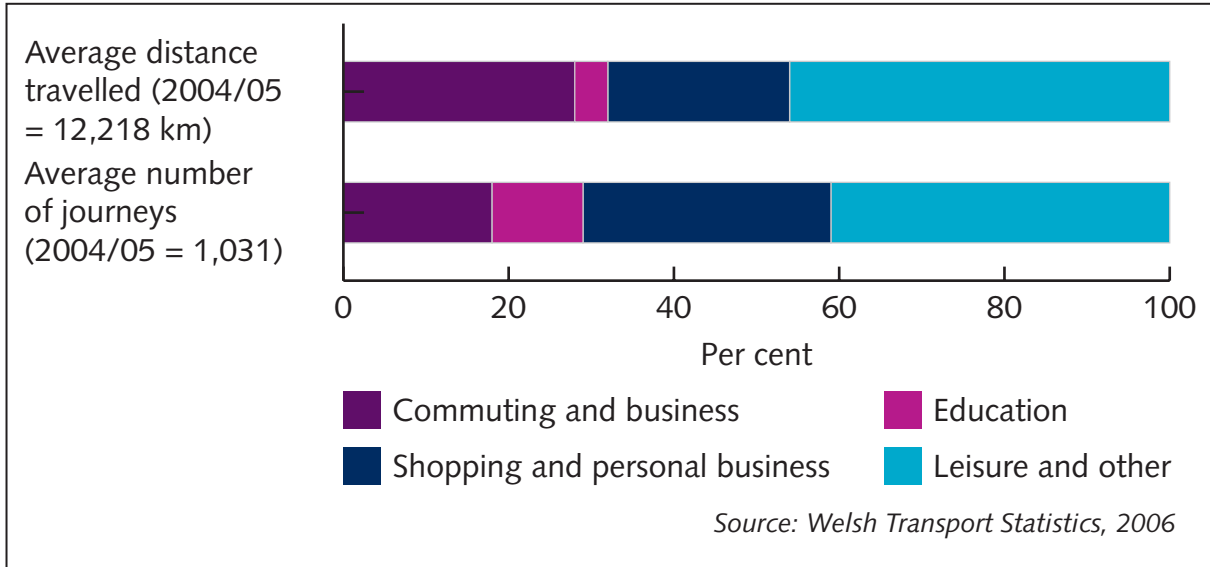
2.1.3 Personal travel

On average, people make about 1,000 journeys a year for a variety of reasons. The average distance travelled per person in 2004/05 was close to 12,231 km (Figure 9), compared to just over 11,265 km in 1995/97. Although the distance travelled per



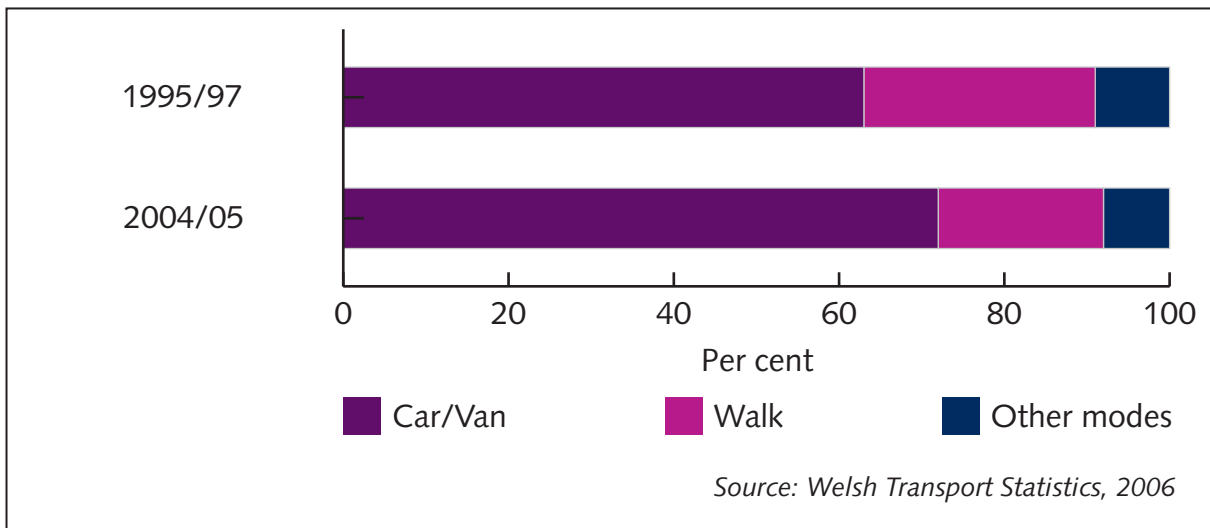
person has increased, the number of journeys has changed very little, suggesting that people are tending to make longer journeys.

Figure 9 Percentage of journeys and distance travelled by purpose, per person 2004/05⁷



The way in which people are making journeys reflects the increasing dominance of the car. Although people make roughly the same use of public transport, fewer journeys are made on foot or by bike, with greater use made of the car (Figure 10). However, the number of households owning at least one bicycle has increased from 36 per cent in 1995/97 to 47 per cent in 2004/05.

Figure 10 Modal choice for journeys



Journeys to and from work and for the school run have a significant daily impact on the transport network since they coincide and create morning and evening peak flows.

⁷ Education includes escort to education.

For both of these, the dominant mode of travel is the private car, particularly for travel to work (Figure 11, Figure 12). About 20 per cent of the average number of journeys made per person per year are made commuting to and from work, although these tend to cover longer distances. The number of people using a car for the school run has been increasing. On average, about 10 per cent of the journeys made per person per year are made on these trips.

Figure 11 Mode share – main mode of travel to work

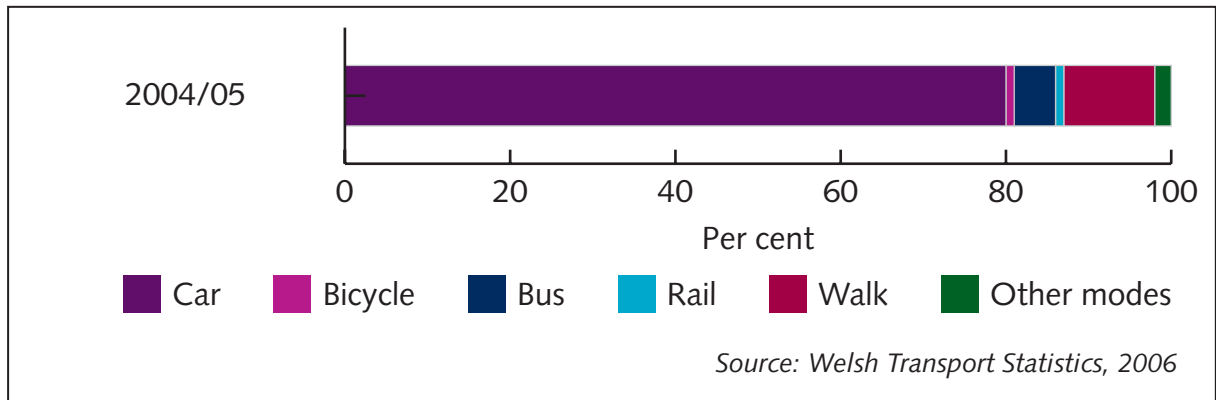
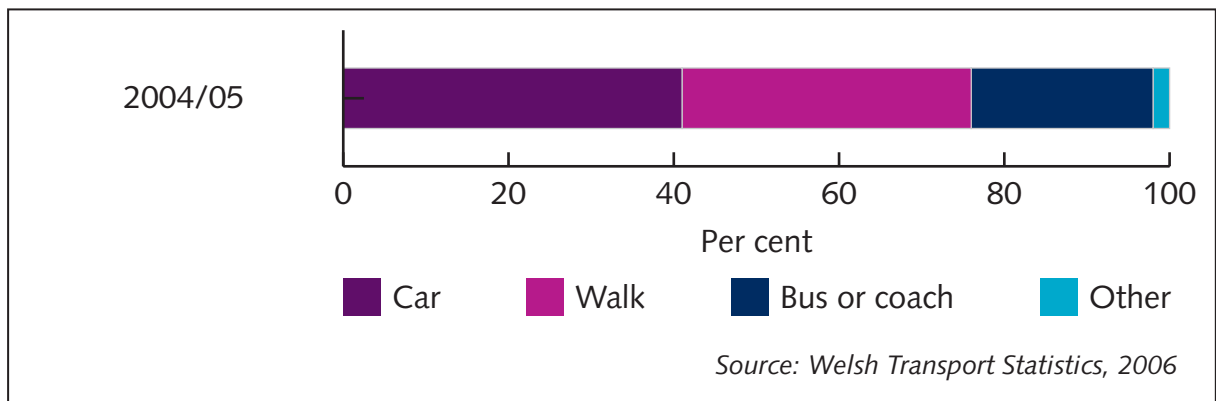


Figure 12 Mode share – main mode of travel to school



Around 75 per cent of children aged between 11 and 16 own, or have access to, a bicycle. However bicycles are rarely used for travel to school. Less than one per cent of trips to school in Wales are by bicycle, compared with around 40 per cent by car, 35 per cent walking and 22 per cent by bus.

Travel not limited to peak travel times, such as leisure (for example, sport or day-trips) or shopping and personal business, accounts for the rest of all travel. People tend to travel further afield for leisure purposes (Figure 9).

2.1.4 Cycling

Around half of all households in Wales own at least one bicycle, up from around a third of all households in 1995. However, the number of people using bicycles regularly is small compared with motorised modes of transport. The main reason for using bicycles is for exercise or pleasure, followed by travel to a leisure facility or travel to work.



Bicycle use in Wales is broadly in line with that of the UK as a whole. Between 1995/97 and 2005, the number of trips per person per year by bicycle fell from 18 to 14, with a corresponding reduction in distance travelled by bicycle. This decline appears to be explained by a combination of perceived road danger and air pollution, both associated with increased congestion.

In 2007-08, the Welsh Assembly Government made available £2 million (Transport Grant) to support a range of local authority projects that will secure much needed investment to improve the cycling infrastructure in Wales. Significant investments have been made in support of improvements at the trunk road interfaces with the National Cycle Network and, also, in providing sections of segregated cycleway next to the A55 in north Wales and the A40 in west Wales.

2.1.5 Walking

The number of times people walk and the distance walked have both declined in recent years, while remaining important for short distances. It is an especially important mode for women, with 15 per cent walking to work in 2006 compared with seven per cent of males.

2.1.6 Road transport

There were 1.7 million licensed vehicles in Wales in 2005, over three-quarters of which were cars (an increase of three per cent from 2004), together with 45,000 licensed motorcycles, scooters and mopeds. The average age of cars and goods vehicles is around seven years, while for public transport vehicles it is around nine and a half years.

2.1.7 Motorcycling

Since 1993, the volume of motorcycles using Welsh roads has grown at a higher rate than cars, taxis and minibuses. The motorcycle has a part to play in meeting Wales' transport needs, however, it is often used for leisure purposes with the majority of motorcycle traffic on our rural roads, particularly over weekends or holiday periods.

There are some serious road safety concerns, with a higher percentage of motorcycle casualties in Wales than for the UK as a whole. In 2006, nearly a third of all motorcyclist casualties were aged between 40 and 59, accounting for 38 per cent of all motorcyclists killed or seriously injured. Furthermore, 91 per cent of motorcyclist casualties in 2006 were male, and more than one-half of all casualties were using a motorcycle with an engine size over 500cc.

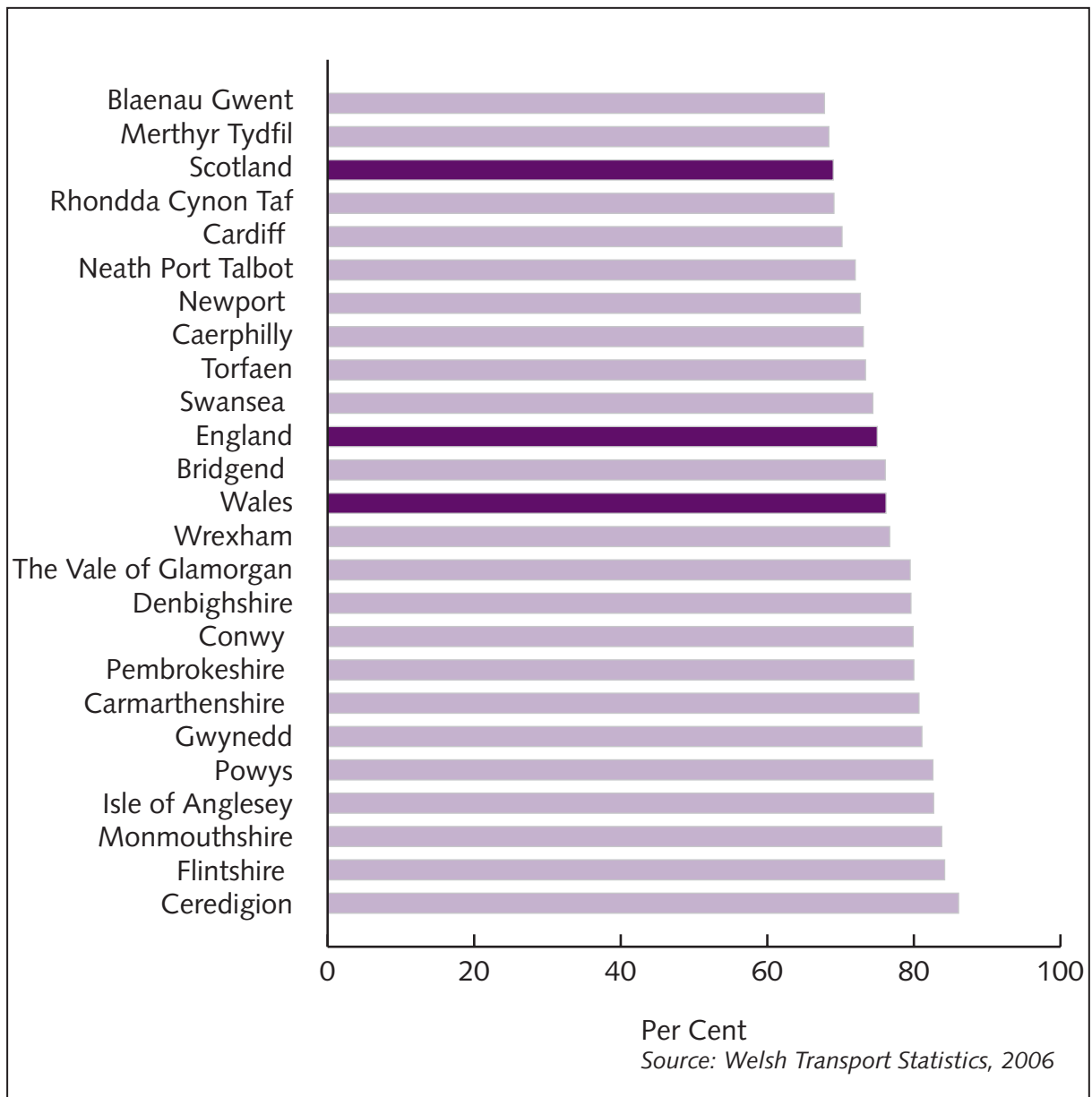
2.1.8 Access to motor vehicles

An estimated 83 per cent of adult males and 63 per cent of adult females hold a full car driving licence (compared to 80 per cent and 62 per cent for the UK), and 75 per cent of households have one or more cars/vans available for use. However, there are significant differences in the levels of car ownership between rural and urban areas (Figure 13). The number of disabled parking badges issued to individuals in Wales stands at almost 226,000.

The number of households without a car is falling (from 32 per cent in 1996 to 25 per cent in 2007), whilst households with more than one vehicle are increasing (from 23 per cent in 1996 to 32 per cent in 2003). Increasing car ownership has afforded benefits

to many people, giving them greater flexibility in the way that they live their lives. Many people are able to choose where and when they travel, whether as an individual or with friends and family. However, people living in the most deprived communities, members of minority ethnic groups, disabled people and those on low incomes can face increasing isolation without access to a car, particularly where public transport provision is not fully aligned with the needs of the community.

Figure 13 Percentage of households with access to a motor vehicle, by country and local authority

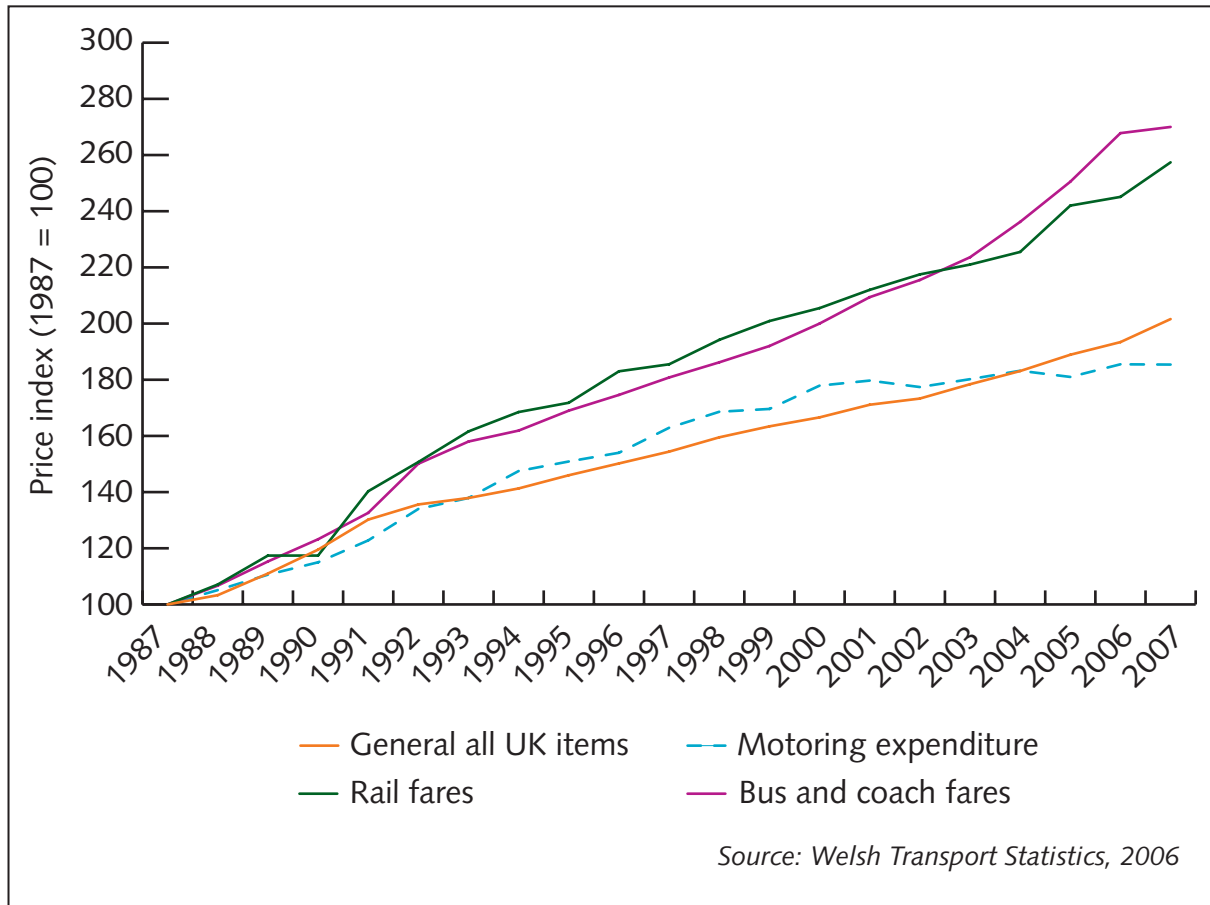


Compared with 1988, it is now relatively cheaper to own, use and maintain a motor vehicle (Figure 14). Over the last 10 years, bus and rail fares have increased relative to overall motoring costs. Concessionary fares reimbursement has increased by over £35 million since 2001 and this has helped to offset the overall cost of public transport for some users. Although it is not straightforward to estimate the effect of various



actions (such as improvements to facilities, bus lane enhancements or street design), overall use of public transport has stabilised and shows signs of increasing.

Figure 14 Index of UK retail prices, showing general UK items alongside the cost of transport in Wales



2.1.9 Road safety

Safety on the road is a key priority for the Welsh Assembly Government. Joint working with local authorities and road safety organisations has been critical to delivering initiatives to promote safe road use.

There has been a downward trend in most types of accidents over recent years. The target for reducing the number of children killed or seriously injured has been surpassed and the same is true for the slight casualty rate. Wales is also well on the way to meeting the target for reducing the number of people killed or seriously injured (Figure 15). Over half of those killed or seriously injured are car users (Figure 16, Figure 17).

Three per cent of all child deaths in the UK take place on the roads. Around half of all children killed on Welsh roads are pedestrians, and the incidence of child pedestrian casualties is strongly linked with social deprivation. Research shows that both non-fatal and fatal child pedestrian rates are higher in less affluent areas.

Figure 15 Progress towards casualty reduction targets for 2010

	1994-1995 average	2010 target per cent reduction	2006	Percentage change 2006
Killed or seriously injured	2008	40	1273	-31.6
Killed or seriously injured children	289	50	144	-50.2
Slight casualty rate per 100 million vehicle km *(current figures are estimates for 2006)	54	10	41*	-23.8*

Source: Statistics for Wales bulletin, June 2007

Young drivers (aged 17 to 25) were involved in 41 per cent of all personal injury road accidents in Wales in 2005, with 12 per cent of these resulting in death or serious injury. Overall, in Wales in 2005 (data from National Statistics bulletin, August 2006):

- Young male drivers were over six times more likely to be involved in an accident than older drivers.
- Young female drivers were around three times more likely to be involved in an accident than older drivers.
- All young drivers were between four and five times more likely to be involved in an accident than older drivers.

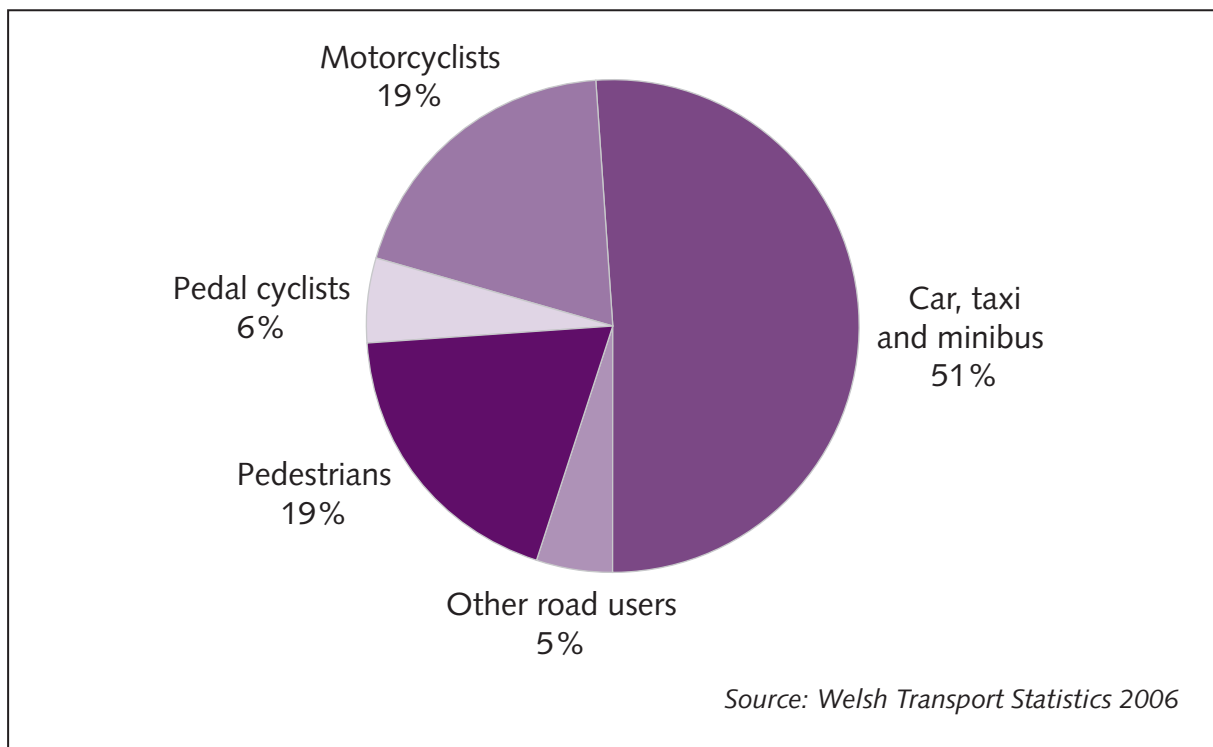
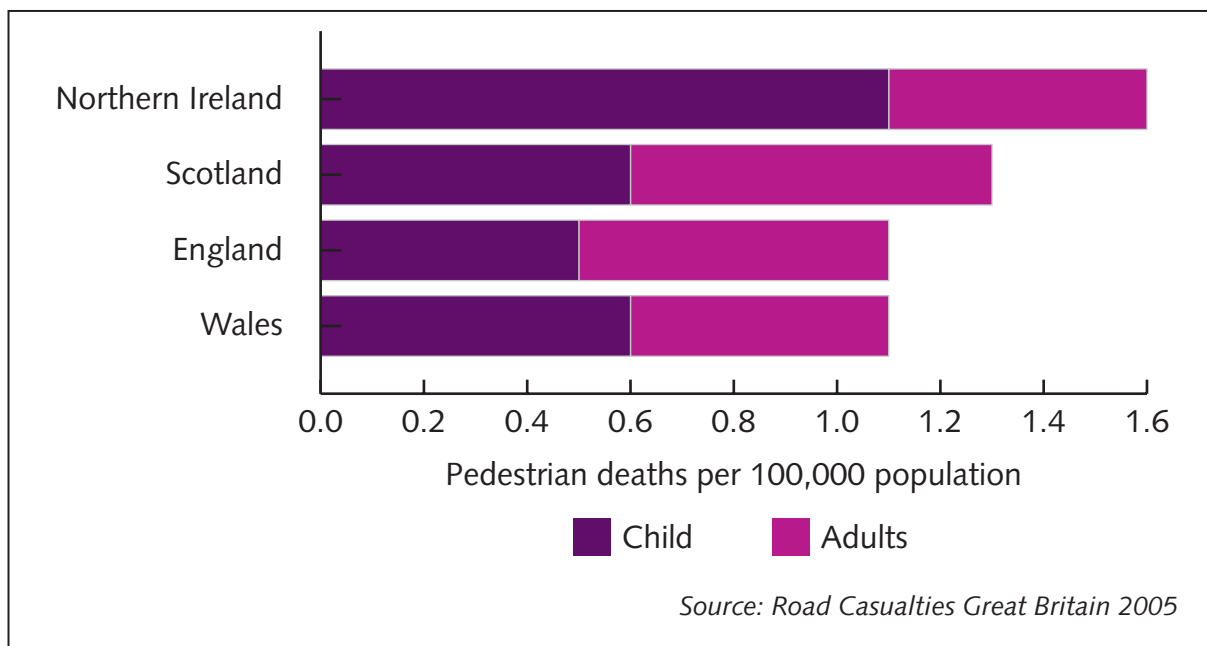
Figure 16 Casualties by type of road user, 2006



Figure 17 Pedestrian road deaths, 2004



Precise estimates of the number of cyclists injured are not available, but according to the Royal Society for the Prevention of Accidents in June 2005 it is believed to arise in over half the cases of road accidents. About 25 per cent of cyclists killed are children, and the number of accidents increases as young people get older, peaking at around 16 years old. To some extent this reflects increased cycling as children grow up, followed by a switch to driving cars in the late teens.

Most cycling accidents occur during daylight hours in urban areas, reflecting where and when most people cycle. Nearly 75 per cent of accidents happen at, or near, a road junction. Cycling accidents also reflect peak traffic flows, between 8.00 to 9.00am and 3.00 to 6.00pm.

2.1.10 Road traffic

Around 80 per cent of traffic on all roads in Wales is accounted for by cars, taxis and minibuses, mainly on east-west routes in north and south Wales.

While much of the road network is congestion-free for most of the day, significant problems exist on strategic routes such as the M4 and in urban centres. Moreover, while traffic on rural roads tends to be lighter, overflow from congested major roads and slow moving vehicles can affect journey reliability. Unreliable journey times are especially difficult for people who rely on transport for their livelihood.

In line with the rest of the UK, the distribution of road traffic is fairly even throughout the week. Use of cars and taxis in particular tends to be greater on week days during peak travel times, and concentrated around midday on weekends (Figure 18). Goods vehicle traffic tends to be evenly distributed throughout the day during weekdays, with reduced intensity over weekends (Figure 19).

Figure 18 Average distribution of car traffic flow for the UK, by time of day, 2005

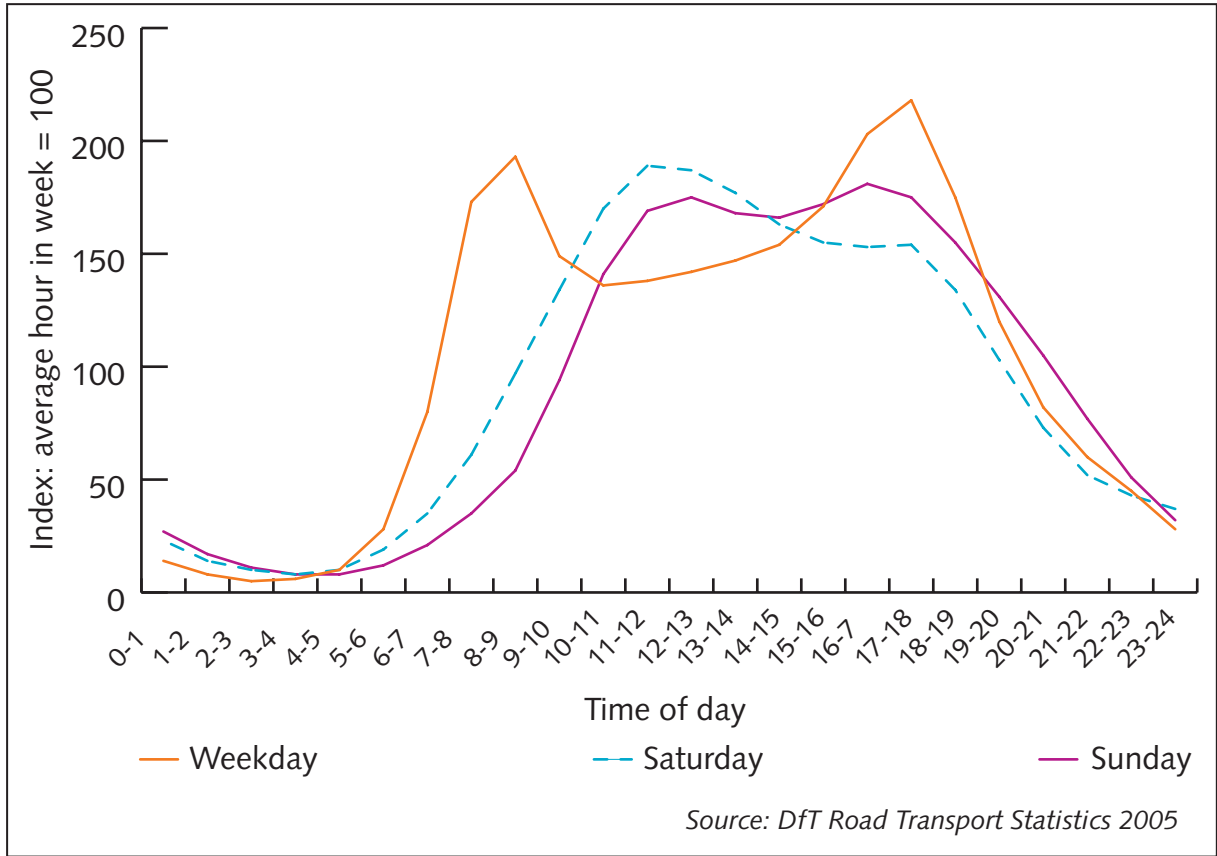
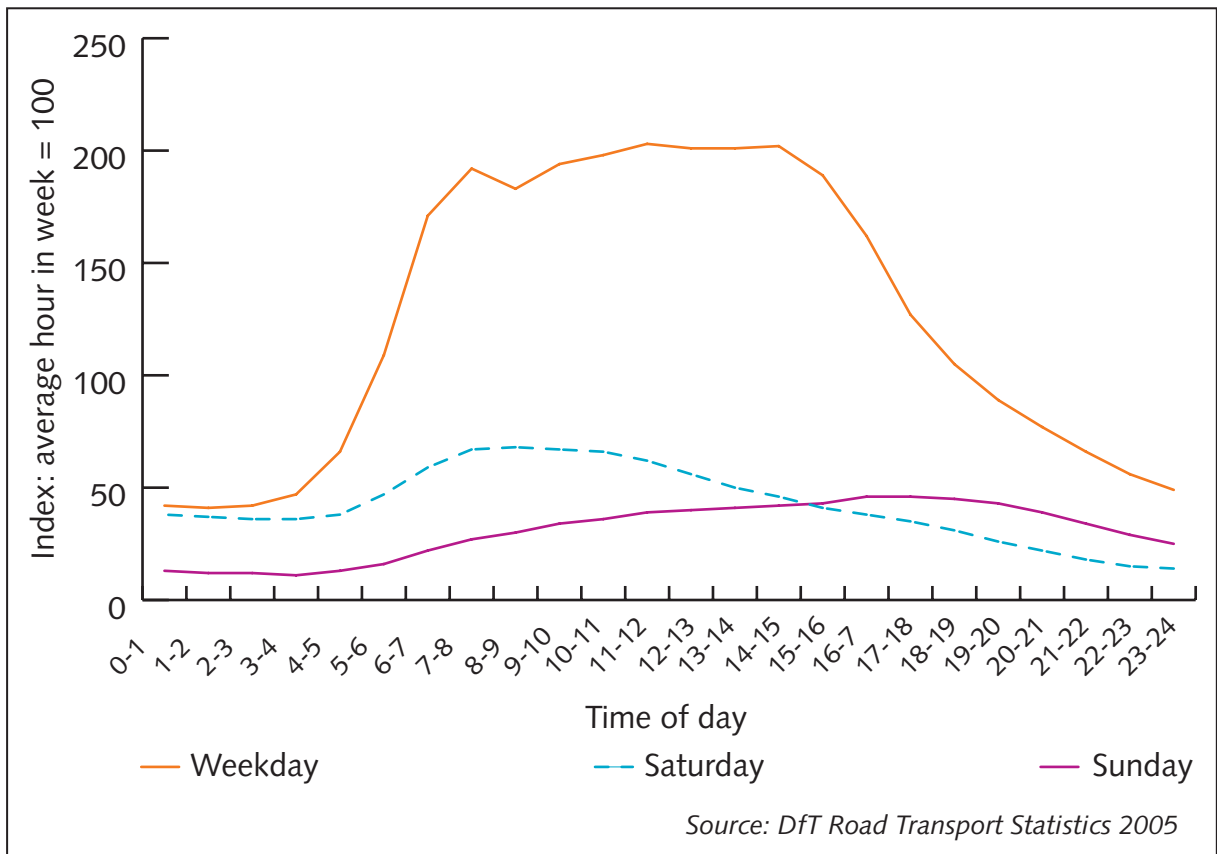


Figure 19 Average distribution of goods-vehicle traffic flow for the UK, by time of day, 2005



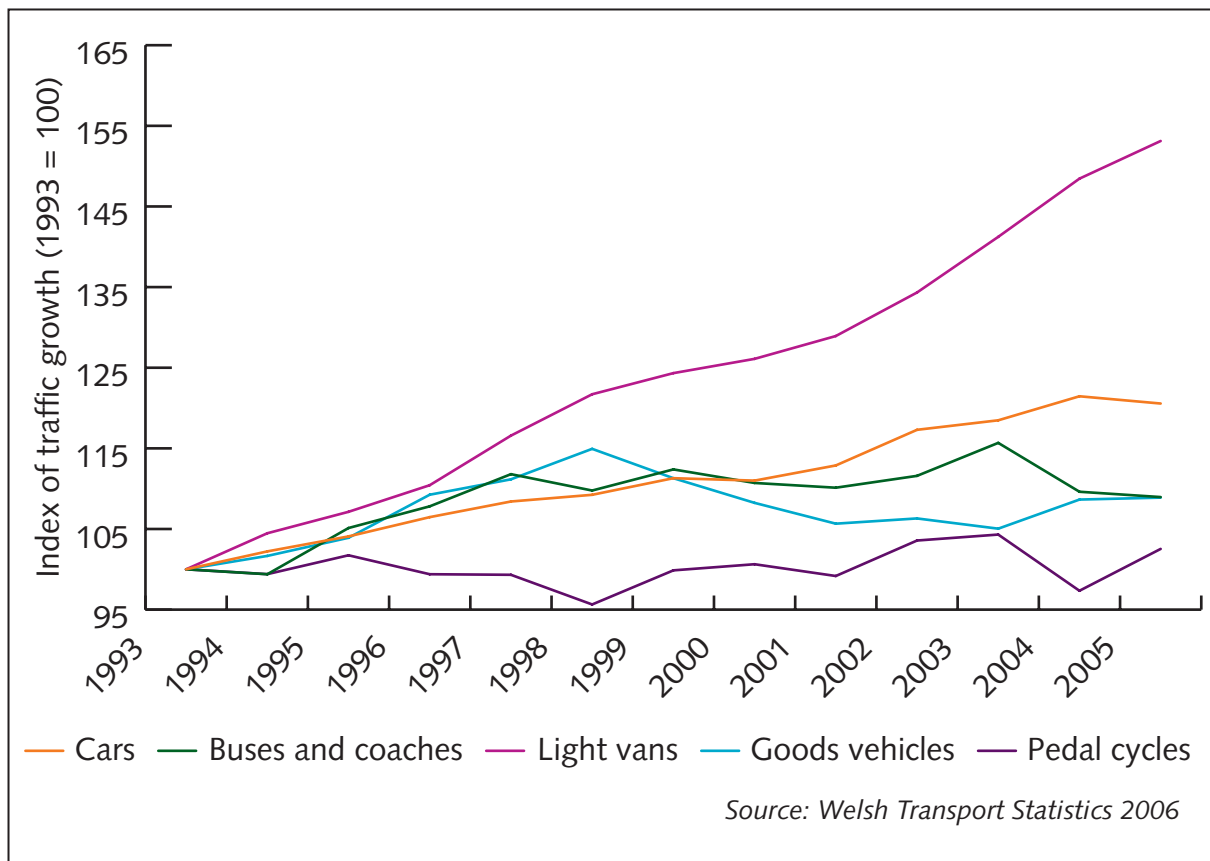


2.1.11 Road freight

Around 64 million tonnes of freight were transported by road between locations in Wales in 2005, with a further 60 million tonnes moving between Wales and other parts of the UK and beyond, though only a small proportion of this total was destined for places outside the UK. Road freight originating in Wales accounted for about 64 per cent by weight of goods moved. Other important movements include transit by truck of around 4 million tonnes of freight to and from Ireland through Welsh ports.

While road freight to and from Wales has remained broadly static since 1990, the decline in heavy industry has resulted in a fall of 15 per cent in movement of road freight within Wales. However, since 1993 there has been a sharp increase in light van traffic on Welsh roads (from some 2.3 billion vehicle kilometres in 1993 to 3.6 billion vehicle kilometres in 2005), far outstripping the growth in car traffic or heavy goods vehicles (Figure 20). This is likely to be related to increased economic activity, especially among small and medium sized enterprises.

Figure 20 Index of traffic growth, 1993-2005

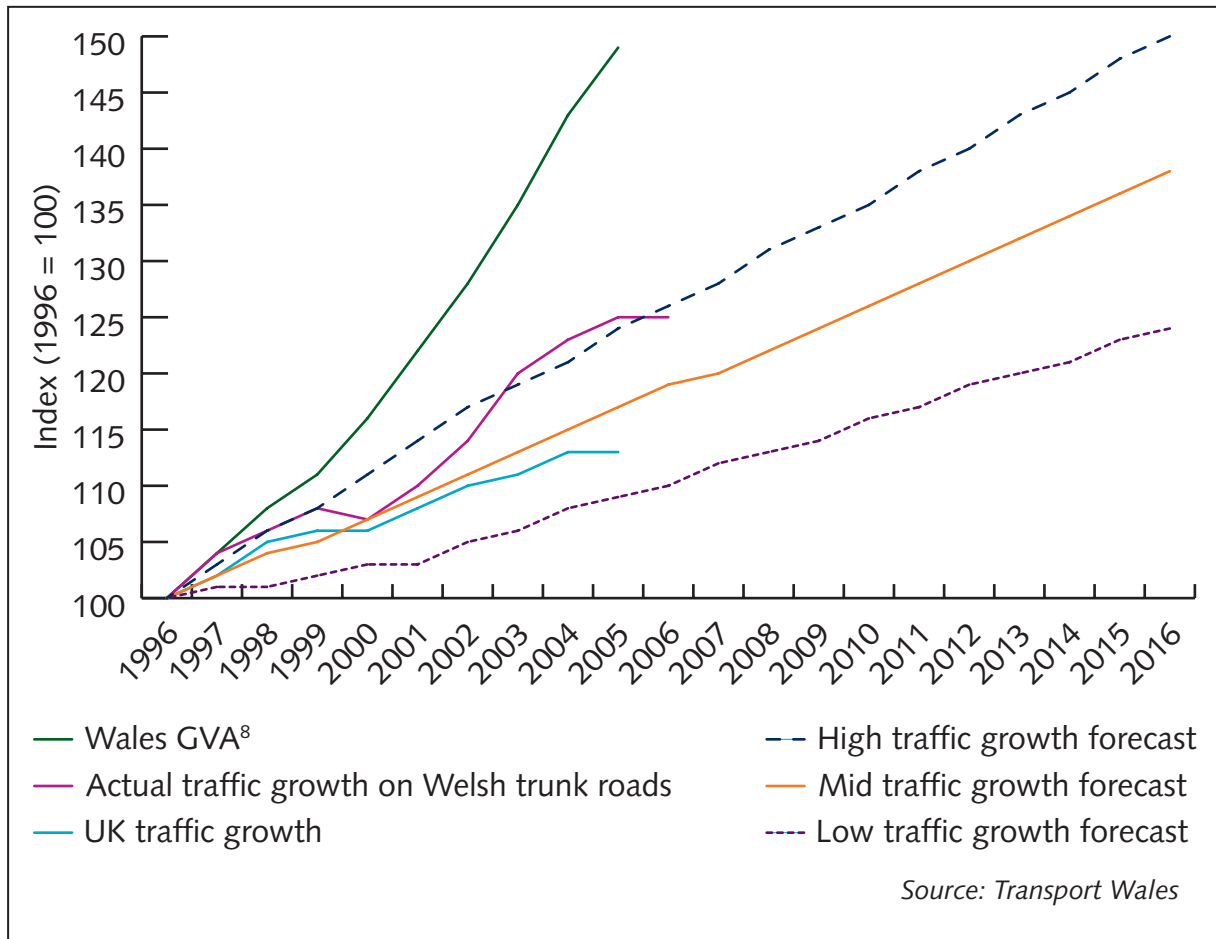


2.1.12 Traffic growth

The trunk road network carries around one third of all road traffic in Wales. In recent years the growth of traffic on trunk roads has started to slow down, while remaining on the upper side of the 1997 National Road Traffic Forecast over the last decade, broadly reflecting economic growth trends (Figure 21). The rest of the traffic (two thirds) is carried on non-trunk roads.

Historically, economic growth and traffic growth have been closely linked. This reflects both the increased need to move goods and services over longer distances as businesses and markets grow, and the increased mobility that follows a rise in prosperity. However, recent trends suggest that traffic growth is beginning to slow against economic growth (Figure 21).

Figure 21 Traffic growth index on Welsh Trunk roads, 1997 National Road Traffic Forecast (NRTF), Great Britain traffic growth and Gross Value Added (GVA) for Wales⁸



2.1.13 Bus and coach services

Bus and coach services within Wales, as in the rest of the UK, are predominantly provided by the private sector although three municipally owned companies operate in Cardiff, Newport and Islwyn. However, public funding still plays a significant role in the provision of services and related infrastructure. There are commercial inter-regional and long-distance coach links, mainly to and from England on east-west routes. The emerging TrawsCambria network aims to supplement rail and commercial coach services by providing long distance coach services across Wales.

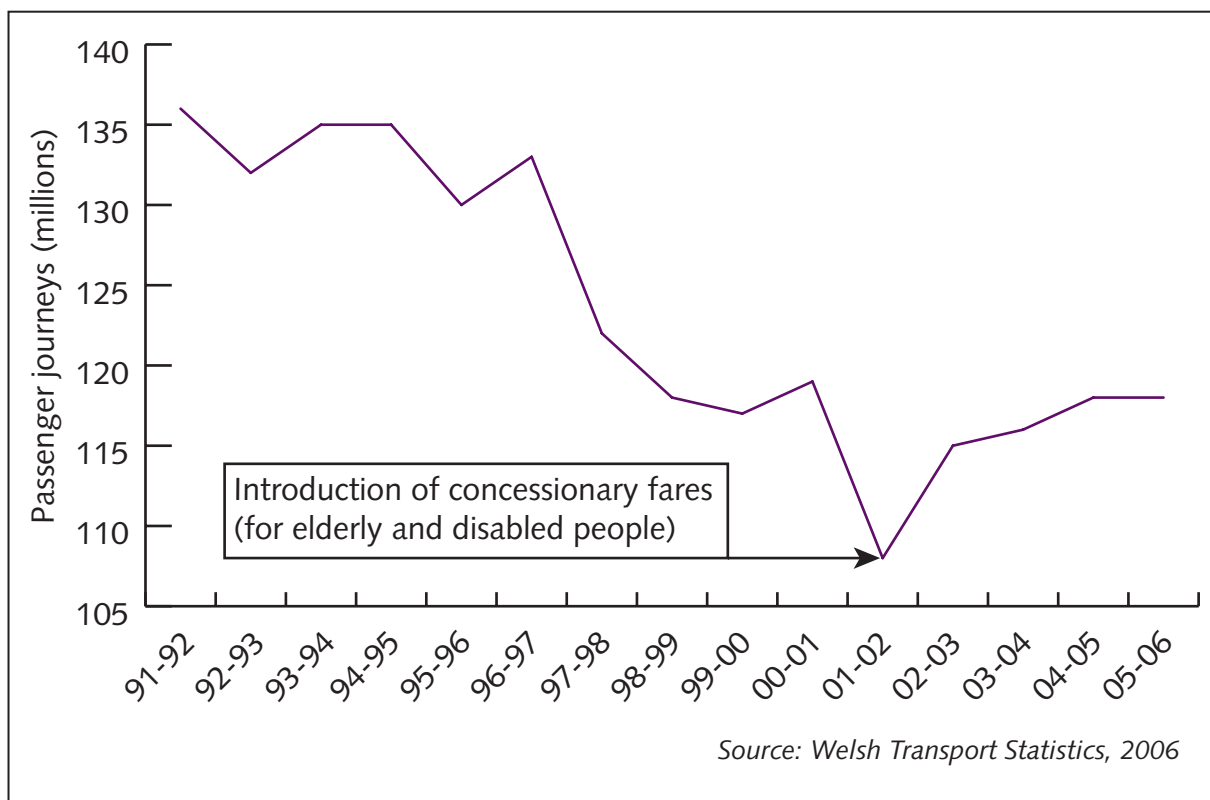
⁸ Gross Value Added (GVA) is used as an indicator of the economic wealth of an area based on the value of products and services and income generated by businesses. GVA data is workplace based (i.e. the wages and salaries of commuters are allocated to the area where they work, not where they live). GVA data per head of population is therefore significantly affected by commuting into and out of specific areas.



The long-standing decline in the number of people using buses has been halted in Wales (Figure 22), and the number of people who live close to a bus stop with a regular service has increased since 1995. However, operating cost per passenger journey has increased by around a third, making the provision of bus services more expensive despite an increase of nearly 50 per cent in Welsh Assembly Government grants for local bus services since 2001/02.

Since April 2002, the Welsh Assembly Government has supported concessionary fares that enable local authorities to provide free travel on local bus services for the elderly and disabled people. Since then, over 500,000 free bus passes have been issued, contributing to the turn-around of the long term decline in the bus industry. The scheme has enabled a number of bus operators to bring forward investment in newer and more accessible buses. It has also helped to safeguard or even extend the number of services on routes that, although socially desirable, might otherwise have been commercially unviable. A pilot scheme provides half fares for 16-18 year olds in north east Wales and Bridgend.

Figure 22 Local bus service trends, Wales 1991-2006



2.1.14 Community and voluntary transport

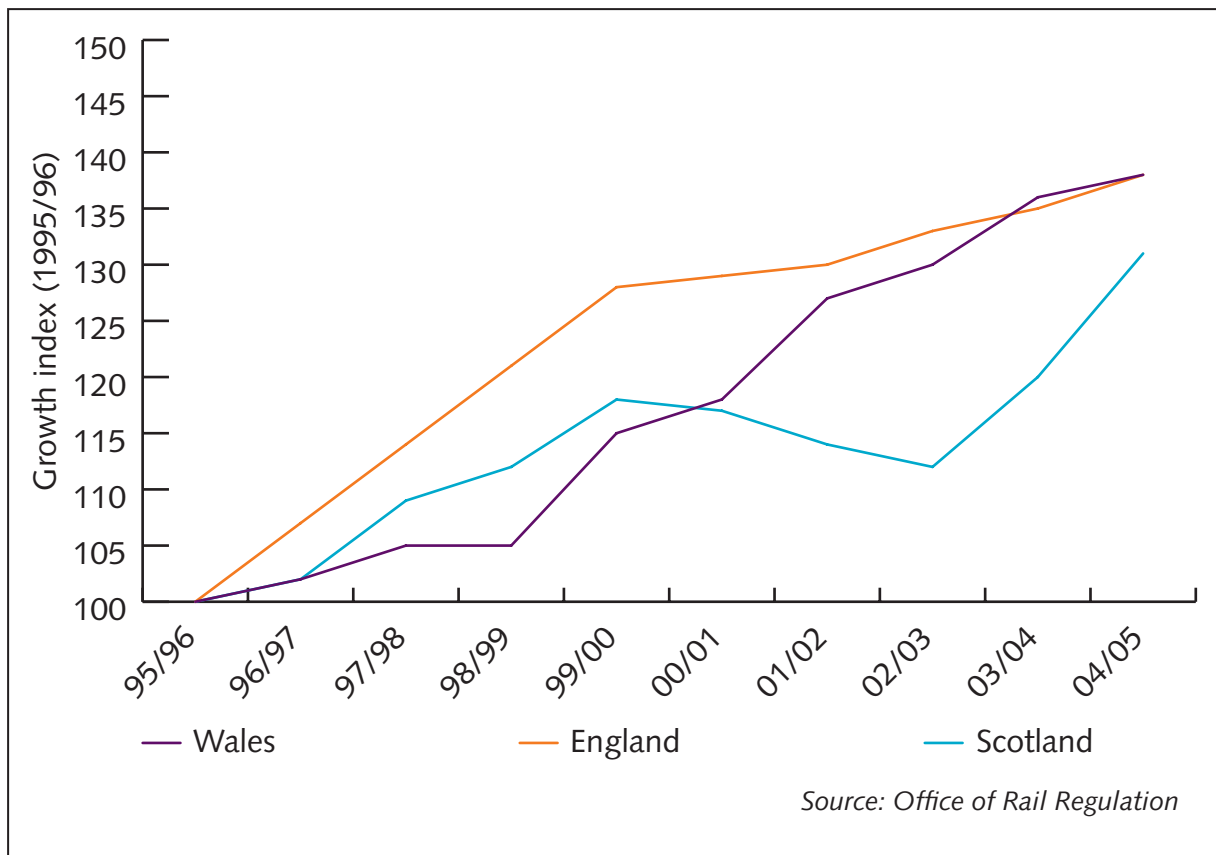
Community and voluntary transport covers virtually all passenger transport schemes outside the conventional commercial public transport network. This sector exists to meet the travel and social needs of people who would otherwise be denied the ability to get around. For example it provides accessible and affordable transport to hospitals and to local market towns for shopping.

A community transport concessionary fares pilot scheme has provided nearly £4 million to 15 community transport demonstration projects across Wales, providing free travel for severely disabled people otherwise unable to travel.

2.1.15 Rail

Much like England and Scotland, Wales has experienced a significant growth in the number of people using trains in recent years (Figure 23). In 2005/06, there were approximately 20.1 million rail passenger journeys beginning or ending in Wales. Around 13 million of these journeys were entirely within Wales, with Cardiff the destination for a significant share of these (close to 40 per cent).

Figure 23 Rail patronage index, 1995/96-2004/05



Most passengers are carried on east-west rail routes along the north and south coastal corridors (the North Wales Coast Line and the South Wales Main Line). There has also been an increase in passenger numbers on direct north-south services. In addition, the Welsh Marches Line connects north and south Wales via Hereford and Shrewsbury, the Heart of Wales Line runs from Shrewsbury to Swansea and the Cambrian line connects Shrewsbury to Aberystwyth and Pwllheli. A number of local services also feed into the main line.

Rail passengers experience crowded trains on some parts of the network. This occurs especially at peak commuting times in south east and north east Wales (where rail has a significant market share of commuting trips), on the South Wales Main Line and on north-south services, particularly during peak holiday periods. Crowding is also



associated with peak holiday traffic on coastal and rural routes and leisure journeys. Lack of seating capacity on trains and a shortage of car parking spaces at some stations also serves to suppress demand.

2.1.16 Rail freight

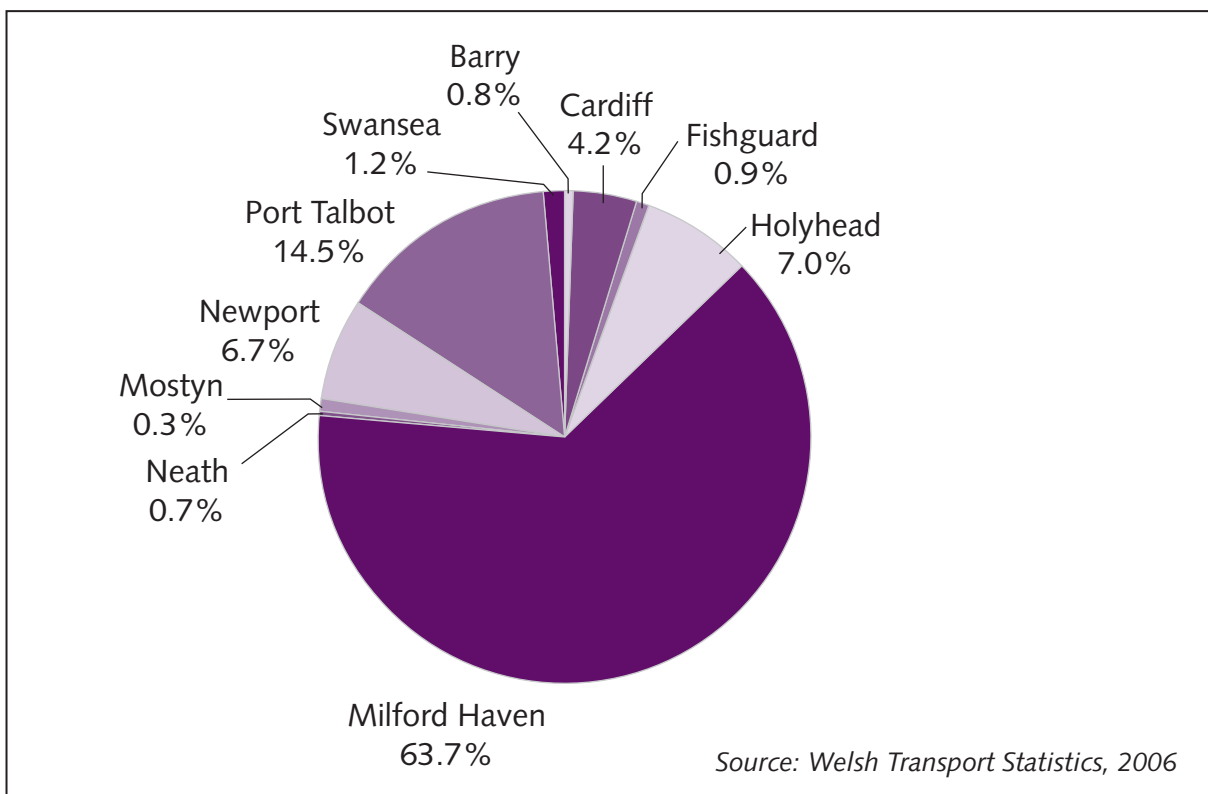
The UK rail freight industry has grown significantly since privatisation, increasing market share and reversing a long-term decline in demand for rail freight over the preceding 40 years. Continued growth is forecast, with the biggest increase in maritime containers, predicted to double over the next decade⁹.

Most freight services run east to west, with the largest in south Wales, some services in north Wales and limited operations in mid Wales. Significant freight services also run north to south along the Marches line, connecting Newport with north Wales and northern England.


2.1.17 Ports

The UK port sector has been largely privatised and deregulated. Wales has a number of major ports with important roles as part of the Trans-European Network connecting the Republic of Ireland, the UK and mainland Europe. Milford Haven is the fourth largest port in the UK in terms of tonnage and the busiest for oil products, a sector set to grow following completion of the Liquefied Natural Gas (LNG) terminal and supply line. Newport and Port Talbot are also significant, with the former being the busiest UK port for iron and steel, and the latter the third busiest for ores. Significant tonnage also flows through Cardiff, Barry and Swansea (Figure 24).

Figure 24 Freight tonnage share at Welsh ports, 2005



⁹ See draft Wales Freight Strategy



Welsh ports also provide important passenger transport and freight (roll-on roll-off) services to Ireland. In 2005, 3.2 million sea passengers travelled to and from Ireland, although this is six per cent lower than in 2004. Of these Holyhead, the third largest passenger ferry port in the UK, handled over 2.3 million passengers and was an important point of shipment for roll-on roll-off traffic. Fishguard and Milford Haven (Pembroke Dock) also handle significant levels of passenger traffic to and from southern Ireland, with over 800,000 passengers a year.

2.1.18 Air transport

Wales has relatively few airports and only one international airport. In north and mid Wales low population densities mean a small air passenger market, with Manchester, Liverpool and Birmingham airports providing the main access to air services. In south Wales the market is estimated to be in the region of 3.5 million passengers (according to the 2003/04 Civil Aviation Authority survey). Cardiff International Airport is the most significant airport, serving around a half the passenger market, while the rest travel mainly to Heathrow, Bristol and Gatwick.

Just over three-quarters of passengers passing through Cardiff International Airport are from international flights, with a small number of flights to north America. The rest are domestic passengers destined for, or originating in UK airports. The majority of domestic passengers travel between Cardiff International Airport and Belfast, Edinburgh, Newcastle, Glasgow or Jersey.

Cardiff International Airport has experienced steady growth over the last ten years. However Bristol and Liverpool have experienced significantly stronger growth than Cardiff International Airport and serve passengers originating in Wales.

An intra-Wales air service operates as a direct connection between north and south Wales, offering a quicker alternative than rail and road for a number of people. The service plays a significant part in the economic development of north-west Wales, providing improved business connectivity, new tourism opportunities and reduced journey times.

2.1.19 Air freight

Total UK air freight in 2005 accounted for some 2.4 million tonnes. While this represents only 1 per cent of UK exports in terms of tonnage lifted, it accounts for as much as 30 per cent by value. However, this traffic overwhelmingly uses airports outside Wales, with commodities travelling by road to and from airports elsewhere in the UK. Direct Welsh air freight is essentially confined to Cardiff International Airport, ranked 19th in terms of size in the UK. Airbus (UK) also moves wings by air from their manufacturing plant at Hawarden to other plants in Europe.

2.1.20 Regional, national and international connectivity

The Welsh transport network includes internationally designated transport corridors to south west and south east England (and on to mainland Europe), the West Midlands and north west England and to Ireland.



There are key sections of the Welsh transport network that either directly impact upon, or are significantly influenced by, decisions made in neighbouring regions. Access to key services and facilities, such as healthcare or education, can also extend across borders.

2.2 Summary

This chapter described Wales transport system, and how it is used to provide essential economic links and gain access to services. Prosperity has led to over-dependence on the private car. While this brings choice and a better lifestyle for many, it also entails a range of disadvantages – for the environment, with raised greenhouse gas emissions and air pollution; for people who do not have cars; for rural residents who have to spend a higher proportion of their income on transport; and for commuters and businesses who suffer congestion.

This chapter identified several overarching trends:

- There is over reliance on the car for all purposes, with longer car journeys despite the uncertainty posed by growing congestion.
- There is a downward trend in the number of people choosing to walk or cycle shorter journeys which needs to be reversed.
- Rail use continues to grow, although in places demand exceeds capacity.
- Travel times vary across the nation, with particularly long journey times between north and south Wales.
- East-west transport networks in Wales with links to the English transport network are heavily used, raising the importance of cross-border partnerships.
- Overall, road traffic growth appears to be slowing down, but is expected to continue to grow for the foreseeable future.
- Road transport accounts for 90 per cent of transport emissions, with cars dominant.
- Safety is improving, but it is important to continue to work towards a safer and more secure network for all.

The next chapter sets out the outcomes and priorities required to give people access to services while minimising undesirable consequences.





Chapter 3 – What we want to achieve: outcomes and indicators

Our country's transport system has a vital role to play in ensuring the prosperity and cohesion of 21st century Wales. It is not an end in itself but is vital to achieve many of our objectives for employment, society, health and the environment.

In this chapter we set out the specific long-term outcomes that transport can contribute to education, spatial planning, health, social services, employment, the economy, environment and tourism. We then list the indicators that we will use to track progress on their delivery.

3.1 Overview of the outcomes

The Welsh Assembly Government is committed to ensuring a future for our nation based on social justice, equality and sustainable development. Our agenda explicitly recognises the need for policies to reflect the diversity of our communities.

This approach has clear implications for transport strategy. Not only is an effective system vital for the economy and access to key services – it also makes a major impact in its own right on the environment.

So our proposals must deliver positive results both for our economic, social and cultural life as a nation, as well as contribute to world-wide moves to stem climate change. They are based on the evidence base provided by the previous chapter.

In particular, by the year 2011 we aim to achieve an overall cut of three per cent in annual carbon-equivalent emissions in areas of devolved competence. This key aim is built into the specific outcomes detailed in this chapter, which will guide the Welsh Assembly Government, Regional Transport Consortia and other partners in developing their plans.

Such an ambitious target can only be achieved by radical changes. Top of the list, as evidenced in the previous chapter, is a reduction of dependence on the private car, particularly when used by a single occupant for commuter journeys. But this outcome in turn requires significant improvement in public transport – in the frequency of bus and rail services, in their accessibility and integration with each other. It also involves increasing opportunities and removing barriers to walking and cycling and other measures to maximise the use of existing capacity.

While these ambitions cannot be achieved overnight, devolution of power to Wales enables us to make a good start – and operate in a context in which priority is accorded to the needs of our nation.

Detailed working out of these outcomes has to be 'community-sensitive' – for example, they must reflect the very different problems of remote rural areas compared with well-networked urban districts. The outcomes described in this chapter reflect the themes of the Wales Spatial Plan, which increasingly provides the framework for delivering policy in post-devolution Wales.

Moreover, the outcomes described below are linked in a complex inter-relationship. For example, improved communications that strengthen the economy will also have impacts on the social fabric and the environment.

Different social groups may well be affected in different ways. For example women, young people and older people rely more on the bus network. Young men suffer more road accidents; while disabled people or mobility restrictions (e.g. people with young children) need easy access to public transport vehicles. People who live in disadvantaged areas may suffer a higher rate of pedestrian casualties.

This chapter also sets out the indicators used to measure progress towards the outcomes. Because of the complex relationship between transport and other areas, specific targets will be used only for greenhouse gas emissions and road accident casualties. The way in which work towards the outcomes should be prioritised and delivered will be set out in Chapters 4 and 5, and as many of the indicators as possible will be monitored by age, gender, ethnicity and disability.

The following online resource describes case studies and examples of good practice <http://new.wales.gov.uk/topics/transport/?lang=en>

3.2 Social outcomes

Outcome 1: Healthcare and social services

Access to health services varies from group to group. For some, it depends on where they live, for others on the transport available or the time of day at which health services are available.

Accessibility to all kinds of new health care services and facilities, particularly by public transport, walking and cycling, should therefore be a major consideration in determining location. For existing services, improved access will mean considering how sustainable transport can provide better access.

Outcome

Improve access to healthcare

What this means

People are able to access the health services that they need (including hospitals, GPs, dentists and specialist facilities) at the times they need, thereby contributing to reduced social exclusion, particularly for the most disadvantaged groups.

Indicators

- Access to key health services and facilities. Measured by accessibility mapping.



Outcome 2: Education, training and lifelong learning

Access to education, training and lifelong learning contributes to promotion of economic activity, productivity, quality of jobs and social inclusion.

Different groups have differing levels of access to education. It is therefore important for sustainable access to be taken into account to avoid future transport problems. For existing services and facilities, sustainable transport solutions can help improve access.

Establishing patterns of public transport, walking and cycling use among school children will also support efforts to achieve long-term behavioural changes.

Outcome
Improve access to education, training and lifelong learning
What this means
People of all ages are able to access education and training to increase their skills base, thereby contributing to reduced economic inactivity and social exclusion and helping raise opportunities in the labour market, particularly for the most disadvantaged groups.
Indicators
<ul style="list-style-type: none"> Access to key education, training and lifelong learning services. Measured by accessibility mapping for public and private access to further education premises.

Outcome 3: Shopping and leisure

The growth of out-of-town shopping centres and leisure facilities has meant difficulties for people with no car. In some areas, such people find that access to significant shopping or leisure facilities requires a combination of bus and walking, and is not possible in less than an hour. This puts a premium on good quality public transport and in the long run, ensuring new developments are located closer to settlements and well linked to existing, more sustainable travel networks.

Outcome
Improve access to shopping and leisure facilities
What this means
People can get to a reasonable range of shopping and leisure facilities at convenient times, so enhancing social interaction and reducing social exclusion, particularly for disadvantaged groups.
Indicators
<ul style="list-style-type: none"> Access to shops selling a defined range of goods. Measured by accessibility mapping.

Outcome 4: Healthy lifestyles

A more sedentary lifestyle and rising levels of obesity make it more necessary than ever to encourage healthier modes of travel. In particular more walking and cycling can contribute to achieving the goals of Health Challenge Wales.

While walking and cycling contribute to health and cut pollution, actual and perceived safety and the condition of roads and routes can act as a deterrent. Improved infrastructure for walking will improve the conditions for people who use wheelchairs or have mobility problems.

Congestion and unreliable journey times create stress and result in medical appointments being missed and emergency services being delayed. Traffic noise and pollution affect mental and physical health and deter people from walking and cycling.

Outcome

Encourage healthy lifestyles

What this means

Higher levels of walking and cycling.

Indicators

- Number of people walking or cycling to work or education.
- Numbers of people walking and cycling for trips of under 5 miles.

Outcome 5: Safety and security of travel

Safety is paramount and while good progress has been made on achieving our target for reducing road casualties by 2010, we are committed to reducing the casualties associated with all forms of transport. Our 'Road Safety Strategy' (2003) continues to be central to accident reduction measures on the roads of Wales. The actual and perceived safety of more sustainable travel modes (such as bus, rail, walking and cycling) must also be improved to ensure greater use.

It is important to improve the poorer pedestrian safety records experienced by socially deprived areas, as noted in the Child Poverty Implementation Plan. Freeing communities from domination by traffic will encourage travel by people with no access to a car. Safer conditions for walking and cycling should also promote healthier lifestyles, as well as greater social interaction.

Outcome

Improve the actual and perceived safety of travel

What this means

Reduced injury accident rates, particularly for vulnerable road users, as well as improved perceived safety for all modes of transport.

Indicators

- Total number of Killed or Seriously Injured (KSI) casualties, by mode of travel.
- Total number of child KSI casualties.
- Total number of child pedestrian casualties in socially deprived areas.
- Rate of slight casualties per 100 million vehicle kilometres.
- Percentage of rail stations with 'secure station' status.
- Incidents of notifiable and non-notifiable offences on the rail network.



Outcome 6: Employment

Travel to and from work accounts for a significant share of overall transport and places heavy demands on the network at peak times, with the private car as the dominant mode of transport. In many areas, car use currently offers the only effective way to get to work – and so alternative methods must be developed to overcome barriers to employment and ensure more sustainable travel.

These include stronger road and rail integration, better use of Park and Ride schemes, dedicated bus routes, better pedestrian walkways and many more cycling lanes. The precise approach adopted will reflect the various challenges faced by different communities and regions.

Outcome
Improve access to employment opportunities
What this means
People can get to a reasonable range of employment opportunities at the times needed, helping to reduce economic inactivity and social exclusion, particularly for disadvantaged groups.
Indicators
<ul style="list-style-type: none"> ■ Accessibility of working age population to key employment centres and education and training facilities. ■ Key centres as defined in the Wales Spatial Plan. To be measured by accessibility mapping.

3.3 Economic outcomes

Outcome 7: Connectivity: nationally and internationally

Transport has a significant role in linking our communities and sustaining economic prosperity.

Wales has a series of ports, railways and roads that form part of the strategic Trans-European Networks. This was developed to reinforce economic and social cohesion across Europe.

Improved connectivity means better access to goods and services. Information technology can remove the need to travel, especially over longer distances. More home-working can provide better opportunities for those in rural areas and reduce congestion on transport networks.

Direct routing of international freight bound for Wales, rather than via intermediate ports or airports, maximises the benefits of improved connectivity. It is also important to work in partnership with colleagues in England to develop important east-west routes at a spatial planning level.

Outcome
Improve connectivity within Wales and internationally
What this means
Transport networks support economic prosperity within Wales and across its borders.
Indicators
<ul style="list-style-type: none"> ■ Domestic and international connectivity. A measure of the range of destinations and the frequency of services.

Outcome 8: Reliable transport system

Unreliability is caused by a number of factors, most notably where demand exceeds supply, and is a particular problem at peak hours on both road and rail. The transport network needs to be carefully managed to achieve efficient, reliable and sustainable movement of people.

Outcome

Improve the efficient, reliable and sustainable movement of people

What this means

People can plan journeys more reliably owing to better management of the transport network.

Indicators

- Passenger levels on the public transport network, as well as the frequency, reliability and suitability of services offered.
- Travel time variance on key sections of the road network.
- Traffic flow over key sections of the road network.

Outcome 9: Freight

The freight industry is a critical sector of the economy in its own right. It underpins the economy, making sure that people have the goods and services that they need. Reliable journey times are particularly important for the freight industry. Wales is an important link in the Trans-European Network so freight traffic has an international as well as domestic dimension.

Our wider objectives require an increase in freight moved over rail and water, which in turn requires effective integration with the road network. We will promote modern freight interchanges and ensure the best use is made of existing roads to cater for freight movement, which means they must be equipped to handle the flow of traffic.

Outcome

Improve the efficient, reliable and sustainable movement of freight

What this means

A significant increase in the freight moved in and out of Wales by rail and coastal shipping. Improvements to the existing road network ensuring free flowing, safe movement of freight traffic. Enhanced rest facilities for freight drivers in Wales. Improved modal connections.

Indicators

- The number of goods vehicle kilometres and associated CO₂ saved through the transfer of operations from road to rail in Wales.
- Travel time variance on key sections of the road network serving freight.



Outcome 10: Visitor attractions, green spaces and the countryside

Tourism is vital for the economy of Wales. Tourists and local people need to have access to the wide variety of cultural, built and natural visitor attractions in Wales – and efficient, safe and reliable transport networks and services support the industry. Encouraging as many visitors as possible to use public transport, walking and cycling also contribute to the sustainability of the tourism sector.

Visitor attractions, such as open spaces, footpaths and cycleways also provide core infrastructure for encouraging healthier lifestyles. We aim to improve access to such links.

The unique geography of Wales provides the basis for many of our country's most popular tourist attractions. This underlines the need for a sustainable approach that safeguards our environment for future generations.

Outcome
Improve sustainable access to key visitor attractions
What this means
People have the opportunity to experience Wales' coast and countryside, and the associated visitor attractions and appreciate their distinctiveness, so raising economic prosperity and the social and cultural well-being of people in Wales.
Indicators
<ul style="list-style-type: none"> Access to countryside and key visitor attractions, including modal choice.

3.4 Environmental outcomes

Outcome 11: The sustainability of the transport infrastructure

We in Wales use more than our fair share of global resources and a more sustainable pattern of consumption and production is needed to reduce their impact on our planet's fragile environment.

We need to get more from less – focusing on efficient production, recycling and minimisation of waste.

Outcome
Increase the use of more sustainable materials in our country's transport assets and infrastructure
What this means
More sustainable transport assets, with materials used more efficiently, minimisation of waste and the use and reuse of recycled and secondary materials where possible.
Indicators
<ul style="list-style-type: none"> Percentage use of sustainable resources in maintaining transport assets. Percentage use of sustainable resources in constructing new transport infrastructure. Proportion of new transport schemes with Civil Engineering Environmental Quality Award (CEEQUAL award).

Outcome 12: Greenhouse gas emissions

Connecting the nation can have a real impact on achieving the Welsh Assembly Government's environmental targets, including its commitment to annual carbon equivalent emission reductions of three per cent by 2011. We will be working to put transport onto a less carbon intensive path by encouraging travel by more sustainable modes, particularly low or zero carbon options such as walking and cycling. We will also be working to improve the carbon efficiency of all modes.

Road traffic is the fastest growing source of greenhouse gases in Wales, now its third largest source. With 19 per cent of all journeys in Wales less than one mile, and 63 per cent less than five miles, there is potential for a switch from cars to more sustainable modes, such as walking, cycling and buses.

While air travel is a global issue, Wales should also play a role in ensuring the sustainable evolution of air travel.

Outcome

Reduce the impact of transport on greenhouse gas emissions

What this means

Reduced contribution from transport to greenhouse gas emissions.

Indicators

- Target to be developed for the greenhouse gas emissions apportioned to transport.

Outcome 13: Adapting to climate change

The impacts of climate change for the next 30-40 years are largely set by emissions that have already occurred and planning future transport system must take account of them.

Key impacts for the transport sector include increased flash flooding because of heavier rain, flooding and erosion – as well as landslips and high summer temperatures affecting road surfaces and rails. Our transport networks will need to be adapted to cope with these threats, and there will be opportunities to contribute to wider resilience, for example in flood defence or providing storage capacity for early inundation.

Climate change leads on to changes in habitat and species – and transport has a role to play in supporting habitat connectivity. Increased air pollution, with attendant health risks, is also likely during hot periods in the summer. Again transport will have a role to play in dealing with this threat by minimising emissions of air pollutants.

We are working with our partners to link the climate change adaptation plan with existing and planned transport infrastructure.

Outcome

Adapt to the impacts of climate change

What this means

Transport networks are adapted to cope with the impacts of climate change and support increased resilience.

Indicators

- Proportion of transport network protected against future flood risk.
- Proportion of transport network able to cope with predicted temperature increases.



Outcome 14: Air pollution and other harmful emissions

Emissions from transport create a range of pollutants that are harmful to human health and the environment. Reducing traffic emissions will play a key role in improving air quality.

Air pollution has serious health impacts, particularly for the most vulnerable in our society. Technological advances in pollution abatement equipment, particularly for public transport, can reduce the harmful emission of nitrogen oxide, particulates, carbon monoxide and hydrocarbon.

Outcome
Reduce the contribution of transport to air pollution and other harmful emissions
What this means
Reduction of transport's contribution to pollutants identified within the UK Air Quality Strategy as harmful to human health and the environment.
Indicators
<ul style="list-style-type: none"> ■ Emissions of harmful air pollutants attributed the transport sector. ■ Number of Air Quality Management Areas where transport is the primary cause.

Outcome 15: The local environment

At the local level, transport has major impacts on the natural and built environment and on people's ability to move around their communities.

Pollutants from transport systems and construction of transport projects can affect rivers and reservoirs. Water courses can be polluted by particulate matter, salt and de-icing chemicals. Noise and vibration made by vehicles disrupts people's quality of life, while poorly designed, excessive or badly positioned lighting can have an adverse effect on the locality.

The transport infrastructure itself can have a divisive effect – for example, when roads cut across neighbourhoods and inhibit social interaction.

Outcome
Improve the positive impact of transport on the local environment
What this means
Reduction in the individual and cumulative impact of transport on communities and the built and natural environment.
Indicators
<ul style="list-style-type: none"> ■ Number of recorded land and water pollution events where transport is the primary cause. ■ Number of targeted noise action plans related to transport. ■ Proportion of noise sensitive areas with noise protection measures. ■ Number of light pollution complaints where transport is the main cause.

Chapter 16: Our heritage

Wales is rich in cultural heritage, including world heritage sites, listed buildings and conservation areas; and it is important to respect the local distinctiveness of our diverse landscapes and townscapes.

Close links will need to be made with the vision for landscapes set out by the Environment Strategy Action Plan, and the Wales Spatial Plan's measures for retaining our country's diversity.

Outcome

Improve the effect of transport on our heritage

What this means

The choice and design of transport measures to have a neutral impact, or where appropriate, enhance Wales' natural and built heritage.

Indicators

- The impact of new transport schemes on the historic environment and landscape/townscape.

Outcome 17: Biodiversity

The Biodiversity Action Plan (BAP) process ensures that action plans are developed for each key species and habitats, on land and in the sea. Local Biodiversity Action Plans identify key species and habitats for each local authority area.

Public authorities, including the Welsh Assembly Government have a duty under Section 40 of the Natural Environment and Rural Communities Act 2006, in exercising their functions, to have regard, so far as is consistent with their proper exercise of those functions, to the purpose of conserving (which includes protection and enhancement) biodiversity.

UK and European legislation sets out the requirements for the protection of a number of habitats and species found in Wales. For instance the UK Conservation (Natural Habitats &c) Regulations 1994 for European Protected Species (EPS) set out strict criteria for when licences can be obtained for activities which may harm them.

Outcome

Improve the impact of transport on biodiversity

What this means

Biodiversity, both for land and marine environments, to be protected and enhanced when improving or developing transport measures. Mitigation and compensatory measures to be provided where transport has a significant negative effect.

Indicators

- The impact of new and renewed transport schemes on biodiversity.
- Number of Trunk Road Estate Biodiversity Action Plan (TREBAP) targets achieved.



Chapter 4 – Focusing our work: strategic priorities

Complex interactions exist between the outcomes that *Connecting the nation* seeks to achieve. In many cases a single action contributes to several outcomes. This Chapter outlines the principles used to make logical choices for implementing the transport strategy. It also sets out a series of strategic priorities to guide delivery of the outcomes in the first five years of the strategy. These priorities reflect the policies in *One Wales* and will provide the basis for action by the Welsh Assembly Government and its partners.

We have published a separate report on the consultation process. However, these are some of the key messages used in developing the strategy.

You told us:

The themes are the most appropriate approach to working toward the outcomes.

We have kept the themes as the guiding principles for transport.

You told us:

You would welcome prioritisation of the outcomes.

We have identified strategic priorities to focus work toward the long-term outcomes and support the delivery of *One Wales*.

You told us:

You welcomed the flexibility to create regional approaches to the themes and outcomes.

The regional transport plans will develop individual approaches to delivering outcomes for their areas.

4.1 The challenge: balancing our outcomes and sustainable transport themes

The Welsh Assembly Government seeks to make progress on all outcomes and themes, which we regard as essential to achieve our economic, social and environmental agenda. The methods and tools which we will use to reach the outcomes are set out in detail in <http://new.wales.gov.uk/topics/transport/?lang=en>. We are determined to overcome the challenges involved, using a balanced approach.

There are often complex interactions between the different outcomes. We must protect our environment in a way which minimises any detrimental impact on our economy.

We will use the following principles when considering what actions we will take to achieve the outcomes:

- Make maximum use of existing infrastructure. We will take action to make journeys more reliable and ensure better integration of all modes of transport.

- Promote more sustainable and healthy forms of travel. We aim to make walking and cycling the first choice for shorter journeys and make public transport an attractive choice for longer journeys.
- Minimise the demands on the transport system. For example, we will adopt land use policies that take into account effects on demand for transport, with good public transport access for major destinations. We will also encourage home working and use of Information Technology to cut the need for daily travel.
- Use the Welsh Transport Appraisal Guidance (WelTAG) to ensure that all costs and benefits of new transport schemes to the economy, society and environment are considered in a systematic way. Furthermore, there will be a Health Impact Assessment of the more detailed National Transport Plan.
- We will take into account the needs of the six equality strands (age, disability, gender, faith/religion/belief, race and sexual orientation) and the potential impacts on them when developing policies and actions. We will also consider our obligations under the Human Rights Act.

These factors form the backdrop. Below we have set out the strategic priorities for the first phase of *Connecting the nation*.

4.2 A strategic approach: priorities

Some actions deliver more than one outcome. A number of key areas for progress have been identified. These reflect the agenda of the Welsh Assembly Government as set out in **One Wales** and shape the National Transport Plan and Regional Transport Plans. They are:

- Reducing greenhouse gas emissions and other environmental impacts from transport;
- Integrating local transport;
- Improving access between key settlements and sites;
- Enhancing international connectivity; and
- Increasing safety and security.

4.3 Reducing greenhouse gas emissions and other environmental impacts

One Wales recognises the need to tackle the threat posed by climate change and commits the Welsh Assembly Government to promote sustainability.

A more sustainable transport system has a vital role to play in ensuring that we live within the limits of our natural systems. This requires an overall reduction in greenhouse gas emissions. This does not rule out new infrastructure; however it means any new infrastructure should be assessed as part of the total transport solution to the identified problem.

As reflected in the 2006 Stern Review on the Economics of Climate Change¹⁰, difficult challenges are thrown up in seeking to reduce transport related greenhouse gas emissions, especially given the continued growth in demand for transport. Yet there are also positive aspects.

¹⁰ Stern Review: The Economics of Climate Change, prepared for H M Treasury, October 2006



Evidence suggests that short to medium term improvements are likely to stem from enhanced fuel efficiency, use of biofuels and behavioural change (such as driving more economically and switching to walking, cycling and public transport). While there are considerable uncertainties about the rate of future technological developments the recent King Review of low carbon cars shows that in the long term the relative cost of low carbon technologies for cars will decrease significantly.

We believe that transport should play a full role in contributing to greenhouse gas reductions. The Welsh Assembly Government is committed to developing a target for reducing carbon equivalent emissions from transport as set out in **One Wales**. Detailed targets will be set across the Welsh Assembly Government as a whole to achieve the three per cent per year target in **One Wales**.

We are determined to put transport onto a less carbon intensive path – the pace at which this is done will be determined as part of the Welsh Assembly Government's overall policy. Further interventions to deliver reductions (such as national speed limits, higher fuel charges, air fuel duties etc.) will operate at a UK or European level.

The principles of making better use of existing infrastructure; more use of walking, cycling, public transport and park and ride; and minimising the need to travel will all contribute to a less carbon intensive transport system. Where new infrastructure is proposed the assessment will weigh its contribution to greenhouse gases against social and economic benefits using WelTAG.

As well as tackling the causes of climate change, we also need to consider its likely impacts. These may include flash flooding due to heavy rain, increased river and coastal flooding and erosion, very high temperatures in summer and the loss of habitats and species. Transport infrastructure will need to be resilient to these impacts. It can also contribute to climate adaptation strategies – for example using roads as barriers in flood protection schemes.

Living with environmental limits is not only tackling the growing problem of climate change. Transport has impacts on other environmental issues such as noise, air pollution and biodiversity as well. We will take action to protect, conserve and enhance these resources.

Key actions

We will take action to make more use of carbon efficient modes such as:

- Shifting freight from road to rail. Using freight facilities grant; support for intermodal transfer facilities; freight quality partnerships.
- Encouraging short sea shipping. By improving access to ports and support for port development.
- Modal shift to public transport, park and ride, walking and cycling. Providing more infrastructure to support that shift. Education and promotion of alternative modes.

- Establish a new Walking and Cycling Steering Group for Wales to help promote more walking and cycling.

We will act to make sure that policies on land use take account of carbon equivalent emissions by:

- Ensuring that decisions on investment and land use planning in other policy areas are consistent with cutting carbon equivalent emissions from transport.
- New Welsh Assembly Government policies to be checked for consistency with the outcomes in *Connecting the nation*.
- Regional Transport Plans to take account of the implications of land use policies.

We will act to make sure that the greenhouse gas implications are taken into account in decision taking:

- Advice to the public and businesses to promote behavioural change, for example through workplace travel planning or driving in a fuel efficient way.
- Develop a more sustainable approach to air travel. Work with the UK government and other partners to develop mechanisms to limit emissions from air travel. Support public transport access to airports.
- Estimated effects on carbon equivalent emissions of different transport interventions to be part of the consideration for future actions. This is part of the Welsh Transport Appraisal process (WelTAG).
- Further research on the most cost effective methods of reducing carbon equivalent emissions.
- Encouraging uptake of low carbon energy sources for transport by supporting research and the renewable fuels obligation.
- Making sure that new transport infrastructure is resilient to climate change.

We will aim to reduce the environmental impacts of transport by:

- Taking action to reduce the effects of transport on noise, severance, air and water pollution and biodiversity.

4.4 Integrating local transport

Public transport is a lifeline. Access to jobs, shops and recreation – as well as vital services such as health centres, hospitals and schools are vital to sustain Wales' diverse communities.

Problems arise where different forms of transport do not join up – because they are physically separate (bus and rail stations in separate locations), timetables fail to synchronise or there are restrictions on the carriage of bicycles on public transport. So in seeking to make public transport accessible to all, we need to move towards a fully integrated system, with availability and quality both enhanced.

We aim to develop a series of sustainable travel towns across Wales – one in each of the four transport consortia regions. These will incorporate a range of measures such



as travel planning, enhanced public transport services and encouragement to walk and cycle to try to get more people to use those modes. This will be an important step towards creating and demonstrating solutions.

The current legislative framework has sometimes made it difficult to improve the quality of the bus system, but the Local Transport Bill, which is now before the UK Parliament, will provide a new opportunity. It will provide an enhanced framework for bus quality partnerships – where local authorities provide infrastructure such as bus lanes and stops, while bus operators ensure more and better quality services as well as bus quality contracts (franchising). Community transport, taxis and park and ride are all essential to an integrated system of public transport and will be given priority where conventional public transport would not be suitable.

At the national level the Welsh Assembly Government will take steps to ensure better integration between key all-Wales services. The Welsh Assembly Government will also work closely with local authorities to put the right conditions in place to allow them to ensure that transport services are integrated at the local level. Working through the four Regional Transport Consortia local authorities will produce their first Regional Transport Plans in 2008/09, setting out a series of detailed steps to improve the integration of local transport.

The task of tackling congestion and ensuring journey reliability requires an integrated package of solutions that take account of a variety of local factors. Delivery of this package will require a full range of legal and policy options (which in some cases may require additional powers), including improvements to the public transport network, creation of more opportunities for walking and cycling, park and ride facilities and any future potential for road pricing. The development of these solutions will involve relevant stakeholders at the local and regional level.

The Welsh Assembly Government now has major responsibilities for rail services. We recognise the key role rail services will play in meeting our wider objectives – and working in partnership with the Department for Transport we have produced the Wales Rail Planning Assessment which sets out how rail can contribute to achieving the objectives in *Connecting the nation*.

We will encourage people to walk and cycle, which will help to reduce both congestion and carbon equivalent emissions, as well as having significant benefits for their health. Our Safe Routes in Communities scheme, which builds on the successful Safe Routes to School scheme, will provide walking and cycling links to schools as well as community and leisure facilities. We will encourage local authorities to incorporate 20mph zones within these schemes, given the significant road safety benefits. We will also encourage them to ensure that local communities are closely involved in developing these schemes, including pupils when links to schools are being considered.

Traffic can have detrimental effects on air pollution and health. While more exacting standards for vehicle emissions have gone a long way to reduce pollution there are still places where traffic levels could be high enough to exceed the standards set out in the Environment Act 1995. Local authorities are responsible for identifying those areas and taking action to prevent the pollution. Transport developments which could increase air

pollution levels in air quality management areas or lead to new areas being created will not normally be supported. There may be exceptional circumstances where actions may temporarily increase air pollution in order to reduce it in the long term – for example building a bypass.

Key actions

We will plan for better integrated transport by:

- Securing better joint working between public transport operators, both rail and bus, to ensure better national and local connectivity.
- Supporting the development of a number of sustainable travel towns across Wales. There will be four pilot projects – one in each consortia area.
- Supporting the introduction and implementation of Regional Transport Plans.

We will support the integration of more sustainable modes by:

- Detailed feasibility studies of the options for rail improvements set out in the recently published Wales Rail Planning Assessment.
- Supporting public transport networks and interchanges, including the use of new powers to improve the quality and planning of bus services.
- Taking forward our Safe Routes in Communities scheme, to develop walking and cycling links in our communities, for example, to schools, shops, employment sites and other key facilities.

We will make sure that all people have access to the transport system by:

- Removing barriers to which prevent access to the transport network.

4.5 Improving access between key settlements and sites

Nearly all facilities to which people need access are located in key settlements or major centres of employment such as St Athan or Deeside Industrial Park. All six spatial plan development groups are working to define the key settlements in their area.

So the most effective way of improving access to essential services will be to improve links within key settlements and links between key settlements and employment sites and their hinterland. The most appropriate method for doing this should be determined using WelTAG. In most cases – especially within large towns – public transport will be the best option. In rural areas most people who have cars will have good access to services, and so the priority will be on developing rural public transport including community transport, taxis and innovative services such as demand responsive transport services.

For many services such as hospitals and regional shopping centres people in Wales travel across the border. We will work with partners in England to improve public transport links to those centres. Much can be done by improving the capacity and frequency of rail services and the long distance bus network, especially the TrawsCambria service. In rural areas where bus and car are likely to remain the main



modes of transport priority should be given to making roads more reliable. This could mean better overtaking opportunities, better traffic management and maintenance and more information for drivers. The Welsh Assembly Government will also be looking at ways to improve community transport facilities.

Links between north and south Wales require systematic examination. Since devolution there has been a significant increase in economic and political links within Wales. The Welsh Assembly Government wishes to improve the reliability and speed of communication between north and south Wales.

We will aim to improve the road links between the north, west and south. There will also be improvements to north-south rail links and TrawsCambria bus services. Improvements will be concentrated on increasing the reliability and journey time on the route. The Welsh Assembly Government is currently supporting a twice-daily air service between north and south Wales for those requiring a faster link than rail or road, particularly for business users who need a day return journey.

Key actions

We will improve access between north and south Wales by:

- Improving journey times by train between north and south Wales.
- Improving north-south links by public transport and road. Journey times and reliability will be the priority.

We will improve links between settlements by:

- More frequent, higher capacity and better quality public transport services between key settlements all over Wales and some major centres in England.
- Improving the reliability of the road system especially between key settlements.
- Expanding the TrawsCambria long distance bus network and create improved interchanges.
- Encouraging more frequent and better quality public transport services between key settlements and employment sites and their surrounding areas. For example services focussing on market towns in rural areas or travel to work areas for cities.

We will improve links into key settlements by:

- Developing community transport (including demand responsive transport services) to provide feeder services into the bus network or give direct access to key settlements and employment sites.

We will make sure that all people have access to the transport system by:

- Tackling the barriers which prevent access to the transport network, particularly for disabled users.

4.6 Enhancing international connectivity

Wales has a commitment to sustainable development, an attractive environment and an economy which encourages strong innovative and competitive businesses. Connections with the rest of the UK and internationally are vital for business and tourism. Reliability can be at least as important as the time taken for a journey.

The most important corridors for international connectivity are the east-west routes:

- **north Wales** Dublin/Holyhead/Chester (road and rail)
- **mid Wales** Aberystwyth to Birmingham (road and rail)
- **south Wales** Ireland/Pembrokeshire/Swansea/Cardiff to Bristol and London (road and rail)
- **south Wales** Ireland/Pembrokeshire/Swansea/Heads of the Valleys/Midlands (road)

All of these, except for the Aberystwyth to Birmingham road link, are designated as part of the Trans European Network, recognised as priority routes for connecting EU countries. Improving the infrastructure and the reliability of road and rail along these existing routes will have beneficial effects on the competitiveness of our infrastructure. The Heads of the Valleys route provides an alternative link between west Wales and the Midlands and at the same time connects the Valleys (one of Wales's most deprived areas) with international destinations. In south Wales the M4 between the Severn Crossings and Swansea is a vital link with traffic levels well above its capacity. The Wales Spatial Plan assesses the improvement of capacity along this corridor as a key strategic issue.

Reliability of rail services requires more connections to give a greater choice of service, signal improvements to increase reliability, and action on overcrowded stretches of route. Reliability on the roads may be enhanced by route management strategies, techniques of dealing with accidents and roadworks which keep the traffic flowing, and information for drivers. In places with significant traffic volume, new capacity may also be required.

The other important hubs for international connectivity are the ports and airports. Apart from main ferry ports Wales has a number of ports which are important for freight (see Chapter 2). The most significant of these are all near east-west routes. The Welsh Assembly Government wishes to encourage the growth of short sea shipping through Welsh ports. This has the potential to reduce CO₂ emissions on a European scale by replacing long overland journeys with sea transport.

Air routes play a significant role in providing international connectivity for tourism and business. Enhanced connectivity assists economic development of the nation and opens up new markets. Such measures need to take into account the Welsh Assembly Government's resolve to drive down the overall level of emissions. We will continue to co-operate at the UK and EU level on tackling emissions from air transport.

Cardiff International Airport is the only international airport in Wales, with the only scheduled intra-Wales service operating between Cardiff and Anglesey. This means that surface links to major airports in England are important for our connectivity. Given



that most of the main English airports serving Wales involve long distance surface travel and have rail connections, improvement of public transport links is the preferred solution. For Cardiff International Airport the first preference will be to improve rail and bus connections but a surface access strategy is being developed to bring together all proposals for passenger access. This will take into account the need to improve access to the planned Defence Training Academy at St Athan.

Key actions

We will improve connectivity by:

- Improvements to the road and rail infrastructure as well as enhanced public transport services on the main east-west routes.
- Better links (especially by public transport) to Cardiff International Airport and other airports serving Wales.
- Preparation of a surface access strategy for Cardiff International Airport, as well as the planned Defence Training Academy at St Athan.

We will support the more efficient movement of freight by:

- Better road and rail-freight connections to the main freight ports.
- Implementation of the Wales Freight Strategy currently under development.

4.7 Increasing safety and security

Reducing the number of road casualties is a priority – with the ultimate aspiration of no casualties. We have been successful in reducing casualties in line with UK targets but need to continue the downward pressure. We are currently working with the rest of the UK to define what the targets will be after 2010. Methods of improving safety include design of the transport system and vehicles, education and casualty reduction strategies for particularly vulnerable groups such as motorcyclists, cyclists, children and young drivers.

We will work with local authorities to develop safe walking and cycling routes in local communities through our Safe Routes in Communities scheme. We will encourage local authorities to take forward 20mph zones as part of these schemes, given the proven road safety benefits.

Perceptions of safety are an important factor in how people use the transport system. Feelings of vulnerability can deter people from switching to trains and buses. Operators of trains and buses (with help from the Welsh Assembly Government) are already carrying out schemes to improve security on vehicles and at stations and this will continue to be a priority.

Key actions

We will improve safety and security on the transport system by:

- Casualty reduction strategies.
- Developing plans for casualty reduction among vulnerable groups.
- Taking forward our Safe Routes in Communities scheme and encouraging local authorities to develop 20mph zones.
- Measures to improve security on the public transport network.
- Measures to improve the security of the transport system.



Chapter 5 – Delivering and monitoring

Successful delivery of our vision depends on joining up and integrating every mode of transport. Working together will therefore be vital to deliver a sustainable transport policy for 21st century Wales. The strategic priorities identified in this document will form the basis for developing our country's transport networks – and contribute to delivery of our policy wider agenda by the Welsh Assembly Government and its partners.

This chapter describes the process of delivering the outcomes set out in *One Wales: connecting the nation*; at national level by the Welsh Assembly Government, at regional level by the Regional Transport Consortia and at community level by local authorities, working in partnership with operators and infrastructure providers.

5.1 Delivery

Connecting the nation sets out the long-term outcomes for transport in Wales. The strategic priorities set out in Chapter 4 will provide the focus for the national and regional plans which will follow.

Partnership working across the public, private and voluntary sectors will be crucial for the success of *Connecting the nation*. Its objectives will be delivered by the Welsh Assembly Government, the Regional Transport Consortia and their members, the transport industry (including operators and providers), and others (Figure 25).

It is essential that the partners necessary for delivering proposals are involved throughout the entire process of appraisal, design and implementation.

Partnership working is vital for knowledge and resources to be used to best effect, and is particularly important for improving accessibility, the scope for which extends beyond the operation of transport services. Taking account of the impacts on the six equality strands will require engagement with the different groups who can help us to assess those impacts.

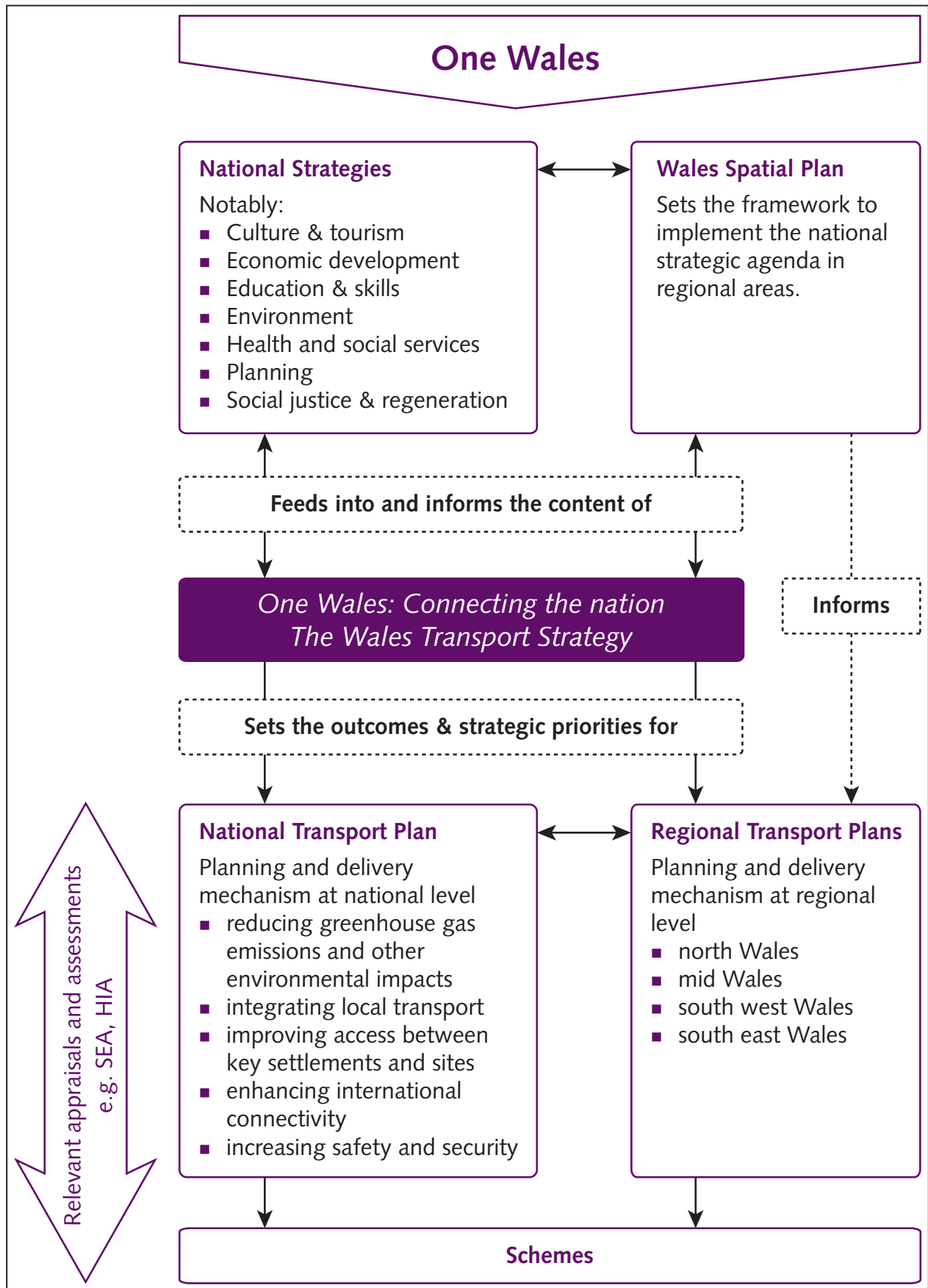
5.2 National delivery

Delivery at the national level will take place through a mix of the National Transport Plan and specific consideration of transport issues by other high-level Welsh Assembly Government policies.

The long-term outcomes and strategic priorities of *Connecting the nation* will be embedded in the development process for wider Welsh Assembly Government policies. This will integrate consideration of transport implications into policy development.

Furthermore, planning advice to local authorities and developers will ensure that these outcomes are taken into account when Local Development Plans are drawn up or new development is considered. This advice will be particularly important in making sure that developments are well served by public transport and reduce car dependence.

Figure 25 Broad transport delivery structure





5.3 Regional delivery

The four Regional Transport Consortia, made up of local authorities, will have responsibility for delivering *Connecting the nation* at regional level.

Their Regional Transport Plans will contribute to strengthening inter-authority co-operation, whilst helping to ensure local transport planning is consistent with *Connecting the nation*. The Regional Transport Plans will elaborate details of the transport policies, schemes and other interventions that the Consortia wish to develop in their respective regions, as well as contributing to transport planning at a wider level.

The advent of the Regional Transport Plans will strengthen the vital links between transport functions and other local government services, such as education, planning, health, leisure and environmental services.

Such linkages should be made explicit in the Regional Transport Plans, particularly in light of the importance placed on social inclusion and environmental impacts. Providers of the services outlined above should not be treated as external stakeholders, but as playing a key role in making the Regional Transport Plan as effective as possible.

Local authorities also deliver many transport services at local level and control many functions with implications for transport. For example, the principles in *Connecting the nation* should be adopted in Local Development Plans, Community Health and Well Being Strategies, and in plans for road safety and school transport.

5.4 National and regional delivery and the Wales Spatial Plan

Connecting the nation is closely aligned with the Wales Spatial Plan. The National Transport Plan and Regional Transport Consortia will seek to build on area actions identified by the spatial planning process.

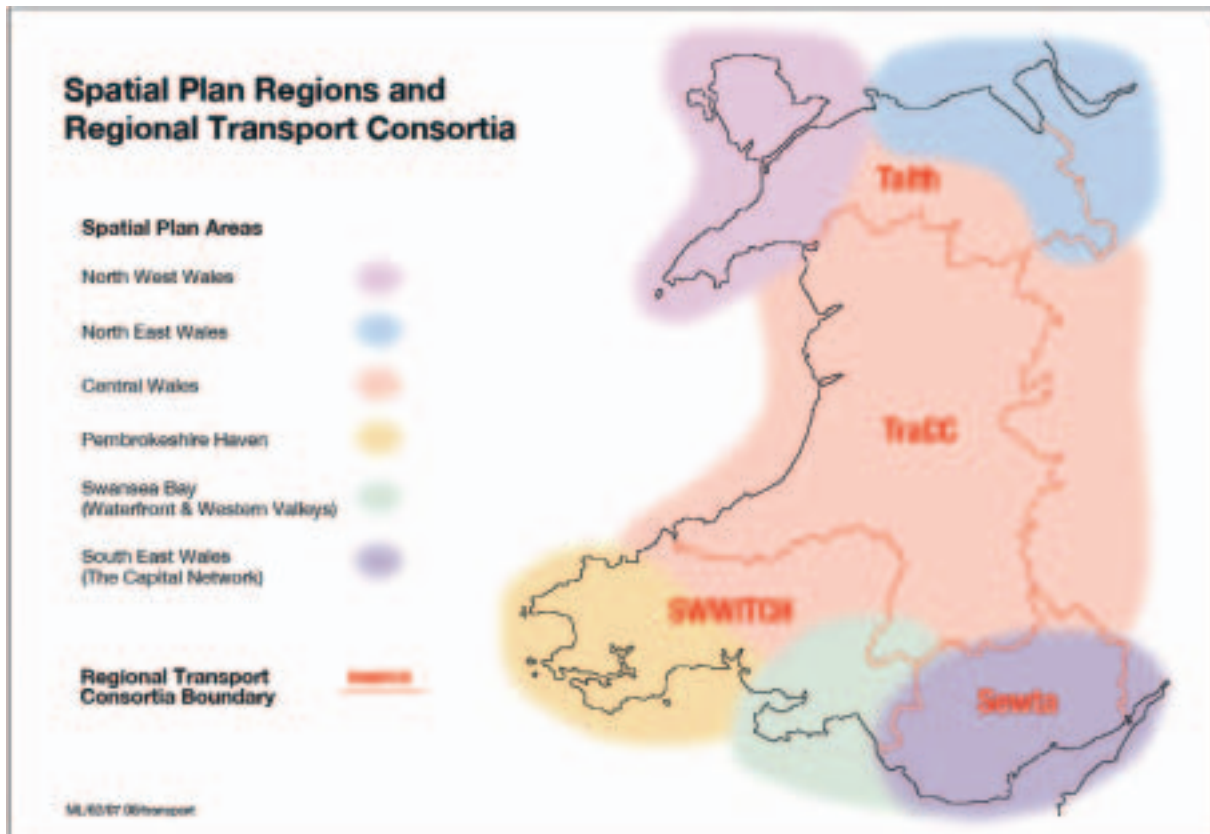
The four Regional Transport Consortia overlap the six areas identified by the Wales Spatial Plan (see Map 2). The Spatial Plan reflects the ambition for different parts of Wales to provide a distinctive response to delivering the national vision. There is a clear need for co-ordination between adjacent Regional Transport Consortia to enable their Transport Plans to meet the requirements of Spatial Plan areas in a consistent manner.

It is therefore essential for the four Consortia to work with each Spatial Plan group in developing their Regional Transport Plans, integrating them closely with the Wales Spatial Plan so that the transport content is fully consistent.

Spatial priorities will inform strategic transport proposals at regional and local levels, but at the same time reflect what is realistic in transport terms.

When funding key regional transport schemes, the Welsh Assembly Government will look for evidence of this synergy, assessing schemes for 'fit' with the regional strategic agenda set out in the Spatial Plan.

Map 2 Regional Transport Consortia and Wales Spatial Plan areas



5.5 Appraisal

National and regional transport plans will be assessed for their contribution to the long-term outcomes of *Connecting the nation* and for their effects on society, the economy and the environment. A specific Welsh Appraisal tool (WelTAG) has been developed to ensure a systematic approach. The plans will also undergo a Strategic Environmental Assessment as required by European Union law and an assessment of their effects on sites of importance for nature (Natura 2000 sites).

5.6 Resources

Connecting the nation seeks to establish a strong and consistent framework for the integration of transport planning into wider Welsh Assembly Government policy development, as well as planning at regional and local level. Enhanced integration will make the most of existing synergies and new arrangements for partnership working within current budgets.

The budget for transport in 2008/09 is around £600 million, and support will go to programmes and projects that deliver against the outcomes and strategic priorities. We will combine the spending programmes of Welsh Assembly Government departments where this is beneficial. As well as financing national infrastructure and services the Welsh Assembly Government allocates substantial resources to the Regional Transport Consortia for local transport schemes and services.



5.7 Monitoring

Progress toward achieving our outcomes will be monitored. The broad monitoring areas are outlined in Chapter 3, and will be developed in more detail in the Wales Transport Monitoring Plan. We will take advantage of data collected for other purposes, such as sustainable development or the annual 'Living in Wales' survey.

5.8 Summary

The Welsh Assembly Government is determined that people throughout Wales have the transport infrastructure and services they require for sustainable living. *Connecting the nation* sets out our strategy and key priorities. Working with our partners, we will now develop detailed plans and invest to deliver a transport system fit for the 21st century.





Glossary

Term	Description
Biodiversity Action Plan	Sets out in detail commitments for species and habitat protection and enhancement.
Bio fuels	Biofuels are fossil fuel substitutes that can be made from a range of agri-crop materials including oilseeds, wheat and sugar. They can be blended in small quantities (currently up to five per cent) with petrol and diesel and used safely in today's road vehicles.
Car clubs	A car club provides its members with quick and easy access to a car for short term hire as and when they need them. Members pay lower fixed costs than car owners and there are often low user membership fees for those doing only one or two trips a month.
Car sharing	Car sharing is when two or more people share a car and travel together. One of the people is usually the owner of the vehicle and the other(s) can make a contribution towards fuel costs.
Information and Communication Technology (ICT)	ICT networks include the use of, for example, tele-communications and broadband to enable remote working and the electronic delivery of services.
Interchange	A location where traffic is exchanged across several modes of transport.
Modal choice	The range of different modes available.
Mode	This is a general term for the different kinds of transport that are often used to transport people or cargo.
Network Rail	The owner and operator of rail infrastructure.
Regional Transport Consortia (RTC)	Local authorities, formed into regional groups, that coordinate transport planning across a range of authorities, and will develop Regional Transport Plans. There are four Regional Transport Consortia in Wales: <ul style="list-style-type: none"> ■ Sewta – covering 10 local authorities in south east Wales; ■ SWWITCH – covering 4 local authorities in south west Wales; ■ TraCC – covering 3 local authorities in mid Wales; ■ Taith – covering 6 local authorities in north Wales
Regional Transport Plan (RTP)	Produced by the Regional Transport Consortia, the RTPs will set out the regional transport policies, schemes and priorities, in line with the long-term outcomes and strategic priorities of the Wales Transport Strategy.
Renewable Transport Fuels Obligation	A requirement on transport fuel suppliers to ensure that, by 2010, 5% of all road vehicle fuel is supplied from sustainable renewable sources.

Term	Description
Social Model of Disability	<p>In 2002, the Welsh Assembly Government adopted the Social Model of Disability as the foundation for its work on disability. The model aims to encourage society to consider the concept of disability in a different way.</p> <p>The basis for this model is that it is not about the disabled person's impairment but how society reacts to it. Disabled people have the right to access the same services, information and resources as non-disabled people.</p>
Travel Plans	A package of measures that aim to promote more sustainable travel behaviour within an organisation.
TrawsCambria	TrawsCambria is a brand name applied to a network of long- and middle-distance express bus routes in Wales which are sponsored by the Welsh Assembly Government.
Welsh Transport Appraisal Guidance (WelTAG)	Comprehensive appraisal guidance for major scheme and plan assessments.

