

# Motoring towards 2050

## Summary



RAC  
Foundation

#### Report steering committee

**Sir Christopher Foster**, Chairman.

**John Bates**, consultant economist.

**Bill Billington**, highways consultant.

**David Holmes**, formerly in senior positions in the Department of Transport and with British Airways.

**Richard Ide**, formerly Chief Executive of Volkswagen Group UK.

**David Leibling**, formerly with Lex and author of the Lex (now RAC) Report on Motoring.

**Professor Peter Mackie**, Institute for Transport Studies, University of Leeds.

**Richard Mills**, Secretary General, National Society for Clean Air and Environmental Protection.

**Sir Nick Monck**, formerly Permanent Secretary, Department of Employment, and second Permanent Secretary, HM Treasury.

**Professor Chris Nwagboso**, Professor of Integrated Transport and Head of the Transport and Automotive Systems Research Centre, Wolverhampton University.

**Professor Tony Ridley**, Professor of Transport Engineering, Imperial College.

**Robert Upton**, Secretary General, Royal Town Planning Institute.

**Joan Williamson**, researcher.

The Department of Transport, Local Government and the Regions provided an observer who attended most of our meetings and provided factual advice.

**David Holmes** and **David Leibling** from the Foundation's public policy committee were joint secretaries.

**Edmund King** is the Director of the RAC Foundation.

**Jo Abbott** is the Administrator of the RAC Foundation.

The RAC Foundation wishes to thank the independent steering committee and all those who have sent in submissions or advised the steering committee on this report.

At a late stage, we gained greatly from a day's discussion of our draft report with a group of transport experts:

**David Bayliss OBE**, formerly Director of Planning, London Transport.

**John Dodgson**, Director, National Economic Research Associates (NERA).

**Professor Stephen Glaister**, Professor of Transport and Infrastructure, Department of Civil Engineering, Imperial College.

**David Quarmby**, Chairman of the British Tourist Authority and formerly Chairman of Docklands Light Railway and Joint Managing Director, J Sainsbury PLC.

**W J Tyson**, Chairman and Managing Director, TMG of GMPTE.

**John Welsby CBE**, immediate past President, Institute of Logistics and Transport, formerly Chairman and Chief Executive Railways Board.

**John Wootton CBE**, formerly Chief Executive of the Transport Research Laboratory and President of the Institution of Highways and Transportation.

Illustrations in this report provided by students from the Automotive Design course at the Royal College of Art. Many thanks to course director, Dale Harrow and the students: Boris Grell, Kristian Hardy, Jean-Arthur Madelaine-Advenier, Danny Ram, Dominic Nowakowski, Graham Hodgson, Benjamin Payne, Sacha Barber, Viktor Holmqvist.

The Royal Automobile Club Foundation for Motoring Limited is a charity established to promote the environmental, economic, mobility and safety issues relating to use of motor vehicles.

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The Prime Minister

This report cannot and does not represent Government policy. But it is a well-argued and interesting contribution to the debate, and particularly so as it is from an independent inquiry by a respected motoring organisation.

Meeting the needs of modern motorists whilst fulfilling our responsibility to protect the environment is one of the biggest challenges faced by any Government. The RAC Foundation first suggested an independent inquiry into motoring issues in October 2000. In replying, I said that we would welcome a report bringing greater clarity and understanding of the issues and choices.

Eighteen months on, this Report more than meets that challenge. It argues that there are no easy answers to fulfilling our desire to travel and that we cannot solve the problem just by building new roads, or by hoping everyone will choose to use public transport for all journeys. It is essential that we make the very best use of the infrastructure we have. Technology can help with that and – through low carbon, hybrid and fuel cell vehicles – reduce environmental impacts. I want UK companies to lead the global shift to low carbon transport. We have fiscal policies and other programmes designed to bring this about, and will shortly publish a comprehensive strategy.

But the report also argues that technology on its own cannot solve all our transport problems. It highlights particularly the challenge of reducing congestion, suggesting a number of possible long-term solutions. I look forward to hearing the debate.

A handwritten signature of Tony Blair in cursive script, underlined.

The Rt Hon Tony Blair MP

May 2002

## Summary document

**The freedom to travel is one of the key qualities of a democracy and we depend on the ability to move around freely to carry out our daily lives; transport is an essential part of a growing economy.**

Our dependence on travel, particularly by road, was shown by the fuel protests of September 2000 when small number of protesters blockaded the fuel distribution network and within a few days the country was extensively disrupted. The main cause of the protests was initially hauliers complaining about the high cost of fuel duty in the UK compared with their European competitors but it soon turned into a protest about the fuel escalator. This increase in fuel duty above inflation was first imposed by the Conservatives in 1993 and further increased by the Labour administration. Although defended as an environmental tax to lower fuel usage through reducing road use and encouraging more fuel efficient vehicles, the escalator was an easy way to collect an additional £2 billion a year.

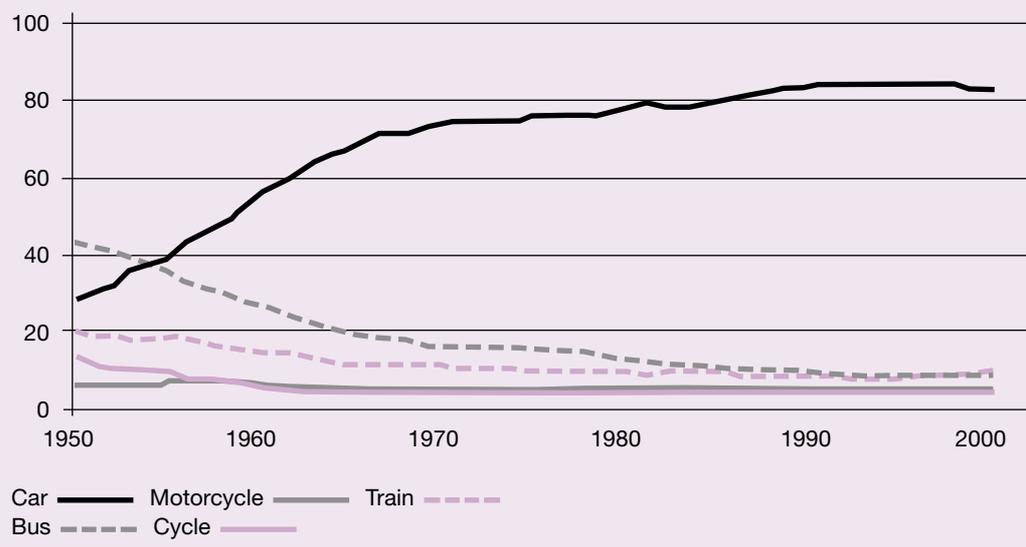
After the fuel protests, Sir Christopher Foster, Chairman of the RAC Foundation, wrote to the Prime Minister suggesting that the government should conduct a longer term study looking at the future of motoring within transport policy over the next 50 years. The Prime Minister replied that he thought it might be useful but that the Foundation itself should undertake this task. This report is the summary of an 18 month inquiry into these issues, based on the input from an experienced steering group of experts.

The Report's aim is to take a long term view of transport policy, well beyond the horizons of the Government's 10 Year Transport Plan, which itself makes a far longer commitment to transport policy than has been made before.

Much attention has properly been focussed on the badly needed improvement of the public transport system – how public transport can be made more attractive, how the massive resources needed for that can be secured – and how walking and cycling can be encouraged. But the car makes by far the biggest contribution to people's mobility and car traffic is forecast to continue to grow. This study recognises the reality of the role of the car, the benefits it brings and the problems it causes. It examines how a balance can be struck between the legitimate desire for mobility and concern about the environment, both locally and at the global level, and about the quality of life. At various points we consider the role and importance of transport in the lives of socially disadvantaged groups and communities.

**Figure 1.1**  
*Share of surface transport in Great Britain*

% share of passenger kms



This study looks at how travel might develop over the next 50 years. It is not a forecast of what will happen by 2050. That date has been chosen to indicate a period sufficiently far in the future when technological advances currently under development will be in common use, there will be a new generation of the travelling public with different expectations of how to travel and when major changes could have been made to the infrastructure, both in terms of the modes of transport themselves and the systems on which they run.

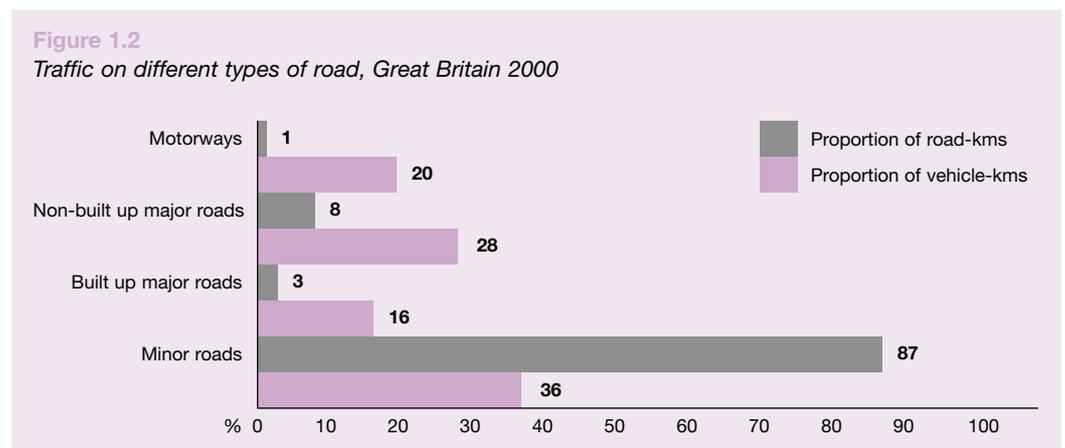
The conclusions demonstrate a range of possible futures based on different assumptions about changes in technology and policy. They provide practical proposals to address the present problems with transport policy. These should influence government thinking and lead to an intelligent debate before the 10 Year Plan comes up for review.

### Where are we now?

The continuous growth of travel and of car ownership and use in the last 50 years has been striking, opening up opportunities for most people and dramatically changing the challenges for national and local government. In the 1950s, long journeys, most by public transport, were typically the annual holiday and occasional visits to friends and relations. Now people travel much more, mainly by car, and for many purposes: 85% of travel (in passenger-kms) is by car, compared with about 30% in the 1950s. Then, public transport – rail, bus and tram – carried about 60% of all travel, now it is only 13%.

In 1950, fewer than 49 million people in Great Britain had about 2 million cars. In 2000, 58 million people had 24.5 million cars. In 1950, 86% of households did not have use of a car: now only 27% do not have one. Responsible for these changes have been income growth, falling costs of car ownership and usage, and the car's increased importance for business and leisure activities. Car numbers have grown faster than incomes, while annual mileage per car have slowly increased at about 0.4% a year. So car travel measured in passenger kms in 2000 was over 10 times higher than in 1950.

*What has driven these changes?* The UK industrial and employment base has changed. Population and employment have been decentralised from city centres to suburbs as people have looked for lower-density housing and a better style of life. Factories and mines, which traditionally relied on local workers walking or taking public transport to work, have closed. Cars mean people no longer need to live close to their work or on a public transport route. Car ownership has helped expand the employment choices of women. With a car, women second earners in a household are much less constrained in where and what hours they work. The number of women holding driving licences has increased by 135% over the last 25 years compared with a 36% increase for men.



## Summary document

*How have Governments responded?* Successive Governments have announced plans for investment in road capacity to catch up with existing demand but these plans were thwarted by public expenditure cuts. Nevertheless the first 1,000 kms of motorways were built in the 1960s and now the 4,000 kms of motorway carry 20% of all traffic even though they account for only 1% of the road network. In towns and cities, ring roads and improved radial routes were the preferred solution but the costs and effects on neighbouring communities meant that they were completed in only a few cities. Gradually and painfully, policies have changed. Major road building plans such as the 1989 Roads for Prosperity programme have been greatly scaled down. Yet car ownership and traffic have continued to grow so that an increasing proportion of the network is operating at or beyond capacity. In 1997 the present Government launched its commitment to 'Integrated Transport' and in 2000 the 10 Year Plan presented a long term programme of investment in railways and roads as well as schemes to improve travel in local areas. We believe that this was a significant advance but the speed of implementation is concerning. We feel that an even longer term view is necessary to ensure that Britain has the transport system that will provide personal mobility and economic growth.

*How does the car affect the environment?* Over the last half century road transport has become a dominant influence on environmental quality in the developed world. Within the UK it now accounts for about half of the main pollutant emissions such as NO<sub>x</sub> and particulates (PM<sub>10</sub>) although the proportions in major cities are much higher. With respect to global warming, vehicles also account for about a fifth of all CO<sub>2</sub> emissions. While transport is not the largest contributing sector, it is the only one where CO<sub>2</sub> emissions are forecast to rise in the next few years. (insert table 3.5 sources of CO<sub>2</sub>). Transport is also a major source of background noise and heavily-trafficked roads are seen as dividing local communities and diminishing the quality of urban life.

It has been argued that car use may need to be drastically constrained to overcome these environmental concerns; however as the section on technology indicates, over 20-30 years, the use of zero emissions vehicles could largely eliminate toxic emissions and the car's contribution to global warming and substantially reduce noise. However to secure real environmental benefits, low carbon sources of energy will have to be used. In the intervening period, regulatory, fiscal and planning measures will still be required to ensure that climate change and air quality targets are met (particularly in city centre hot-spots) but the need for these measures will diminish as older, more polluting vehicles are eliminated by natural replacement, retrofit or scrappage programmes. At the same time, the physical intrusion of the car can be reduced by better designed roads and the use of tunnels. Therefore, while a difficult balance will always have to be struck between the environment and mobility, their adverse environmental impacts should no longer be a constraint on the growing use of the car and other road vehicles.

*How can the planning system change the trend?* When people acquire a car, their travel patterns change radically with more frequent trips over long distances and with change of mode. Interventions from planning can help reduce the need to own a car, can promote alternative modes of transport and can reduce average trip lengths but in practice, personal freedom and the desire for mobility have been stronger influences. Increasingly we are making choices about location and travel that are less obviously based on minimising the time- and money-costs of trips. We make locational choices such as where to live based on the physical environment, access to highly valued services such as good schools and, in a negative way, freedom from fear of crime. Though land use planning will have little effect on congestion in the shorter term, it can help find a balanced solution. Long term initiatives are needed to develop a national strategic framework; ways of meeting the demand for housing (and other services) which generate less car traffic; and measures to reduce the intrusion of cars into local communities.

**Table 1.3**

*UK carbon dioxide emissions by source, 1970 to 1999 (million tonnes of carbon)*

	1970	1980	1990	1997	1998	1999
Power stations	57	58	54	40	40	39
Industrial combustion	66	43	38	38	38	40
Domestic	26	23	22	23	24	23
Transport	22	26	32	36	36	36
Other sectors	11	14	5	3	4	4
<b>Total</b>	<b>182</b>	<b>164</b>	<b>151</b>	<b>140</b>	<b>142</b>	<b>142</b>

Source: UK Energy in Brief (DTI, July 2000)

*Can walking and cycling help?* Cycling and walking account for only a very small proportion of our travel but they can both play a valuable role in terms of improving the health of the nation and reducing the need for short car journeys, especially in urban areas, although this is not going to have a significant impact on total travel patterns or congestion. Where motorcycles replace car journeys they reduce congestion and are easier to park but at the expense of safety and noise. Scooters may have a greater role in overcoming congestion in urban areas.

### What is going to happen?

*How will demand for transport change?* The demand for travel grows with rising prosperity and will increase further as people make more journeys for more purposes and over longer distances. The car will increase its dominance as more people have driving licences and own cars, especially among the elderly and with the increasing number of young people, particularly women, learning to drive. Even on a cautious estimate we can see latent demand for car vehicle kilometres rising nearly a half by 2031 and possibly by another third by 2050. These estimates are based on forecasts of GB car ownership which would be no higher in 2031 than some other European countries today. In practice, this latent demand will be moderated by congestion which will cause people to abandon some car journeys, change destinations or journey times or switch modes. If no action is taken to increase capacity or further manage demand, the rise in actual demand by 2031 would be cut back to 33% while average journey times would increase by around 20%: such an average implies, of course, that some journey times would increase by much more while many may not change at all.

Very roughly, the additional capacity required to accommodate all latent demand in 2031, and thus prevent the deterioration in average speeds which would otherwise occur, is of the order of four to five times the annual rate of investment envisaged in the 10 Year Plan, sustained over the whole 30 year period. Alternatively, to keep demand at its present levels and therefore congestion on average no worse than it is now, would require motoring charges or tax to be five times the current level of fuel duty, an annual increase of 6% every year (the same rate of increase as the fuel duty escalator which led to the fuel duty protests after only a few years). The travel forecasts predict no change in bus use and a doubling of passenger rail transport over 30 years. All these forecasts are subject to wide ranges and therefore policies will need to be flexible with capacity to adjust to actual demand.

*What might change our transport dependency?* There are many different possibilities for reducing transport dependence. Measures which could reduce the demand for travel include those which persuade people to travel less or differently, the use of new technology enabling people to substitute other goods for travel, intermediate modes of transport and forms of city planning which offer people a new less transport-intensive environment. Examples of voluntary measures are workplace travel plans and school travel plans which encourage use of dedicated buses, car pooling, reform of parking policy and help with financing of season tickets with measures to support cycling and walking.

*Teleworking* – substituting remote working for office working on a proportion of working days and/or for a proportion of workers, *teleconferencing* – substituting longer distance journeys by ‘virtual’ meetings and *teleshopping* – substituting supermarket shopping by home delivery and/or substituting shop purchases by internet purchases could all reduce the need for travel. Intermediate modes of transport include car pooling and complementary measures such as car free or car capped housing, where the planning permission specifically forbids provision of car parking space. We believe that all these measures might reduce total vehicle kilometres by of the order of 5% – equivalent to three or four years growth but with greater effects on peak hour urban congestion although less impact on growth on the inter-urban network.

*How will the vehicle of 2050 look?* The 2050 car will look familiar from outside – a box with four wheels, much the same size and weight as today’s family saloon. It will however embody many features which make it more versatile. The 2050 car will have a fuel cell powertrain, almost certainly (barring a genuine breakthrough in storage technology) using compressed hydrogen gas as its fuel. Thus its on-road emissions will be zero, except for a small amount of water vapour. Its energy consumption will be substantially less than half that of current cars, and it will be exceptionally quiet, which will highlight the need to extend the adoption of ‘quiet’ road surfaces to urban areas. The 2050 car will be extremely easy and safe to drive. Its braking and steering operation will be electric. In some circumstances, cars will be driven ‘on autopilot’. Journeys in the 2050 car will be made significantly easier and safer through the widespread use of telematics to aid navigation, smooth traffic flow and provide the driver with other information, and passengers with entertainment or a working environment.

*Will there be some new way of travelling?* Fifty years ago, people predicted the flying car and cities linked by monorails as portrayed in the Eagle comic strip of the 1950s with Dan Dare and the Mekon attempting to outsmart one another using a variety of futuristic transport, including individual flying saucers and personal space pods. But, by 2002, nothing as revolutionary has really happened. New travel options such as light weight monorail pods like ULTra or on-demand taxis will develop slowly and will have limited impact on travel. Although one can never rule out the possibility that over the next 50 years a revolutionary idea, not yet conceived, will make a more significant change, the past 100 years suggests this is unlikely.

*How will freight transport change?* Freight transport is a major part of today's society – it brings raw materials to factories and finished goods to shops and homes and it must be maintained and enhanced if society is to grow and prosper. In Britain, the vast majority of freight (81% of tonnes lifted) is moved by road. The tonnage moved by road in 2000 is similar to that in the 1960's but the average distance moved has more than doubled over that period as supply chains have become more sophisticated with companies optimising their factory locations, introducing regional warehouses and the different style of shopping. The freight industry has made huge strides in improving efficiency and further gains will be harder to achieve although increased night time deliveries could reduce the impact of trucks on road capacity. Trucks and buses will benefit from the same technological improvements as cars and their environmental disadvantage against trains will be greatly reduced. Because of their relatively small numbers, the impact of trucks on congestion is going to be much smaller than that of cars in most circumstances.

*How will public transport contribute?* Buses and trains account for 13% of travel in Great Britain; buses have been in a long term decline while rail travel has seen some short term fluctuations, suggesting demand is more related to economic conditions. Each mode has its strengths - buses are flexible and use the existing road infrastructure while rail excels in high volume commuting traffic and fast inter-urban travel from city centre to city centre.

Many politicians and others have argued that traffic growth can be contained by shifting demand to public transport. The motorist supports the development of a first rate railway and other public transport systems, though many people outside London and the south east never use them. As the need for additional transport infrastructure in general is so pressing, the rail investment in the 10 Year Plan must be completed even though it is much less cost effective than most other investments and measures in the Plan. However, neither the rail nor any other public transport will have sufficient market share to have a substantial effect on the volume of car and freight traffic.

Because the cost of increasing rail capacity is escalating, a hard look is needed at priorities, especially as capacity demands for long distance passenger, urban commuting and freight will often be in conflict. However, some of the most costly investment may prove the most necessary, although the safety investment on the railways is considerable less cost effective than measures to improve road safety. There needs to be further investment, much of it in underground rail in London, after the 10 Year Plan if public transport demand is to be met, severe overcrowding avoided and congestion reduced on the urban streets above. Elsewhere, entirely new surface routes would lead to similar objections to those against new road building, while the environmental case for shifting traffic from road to rail will largely disappear with the next generation of clean road vehicles.

In rural areas the main problems are for those without access to cars and in some places the need to protect the countryside from excessive tourist car traffic. Scheduled public transport using large buses is often ineffective and would be better replaced by small buses or on-demand services such as shared taxis or dial-a-ride services.

*Can the capacity of our roads be increased?* There are a number of facilitation and management measures which can help to get the most out of our existing system, adding 10-15% to effective capacity. The necessary techniques are generally available but many are not yet fully developed for application. More advanced technical measures may become available, providing links both between vehicles and between vehicles and the network with potential for more effective management and use of road space as well as greater safety. Eventually, automatic guidance may become possible. Although some elements of the technology are available, these latter measures would involve fundamental changes in road use and would need to be taken forward by major development programmes to resolve critical issues of acceptability and responsibility. Britain is at the forefront of telematics technology in Europe and the Government should make the most of it.

**Table 1.4**  
*Improving the capacity of the roads*

Facilitation/Management	Making the most effective use of road space, through ramp metering, speed limits varied according to traffic conditions, narrow lanes, using hard shoulders as temporary running lanes, tidal flow, permanent standby recovery facilities, information systems, active traffic management
Advanced Technical	Interactive communication between vehicles and between vehicles and infrastructure, intelligent speed adaptation, external control of vehicles on automated highways with cars in electronically linked platoons
Basic Physical	Bypasses and other new roads, widening, junction improvements, climbing lanes and other segregation; better environmental design
Advanced Physical	Elevated sections, tunnels

**The policy options**

*Solving congestion* As noted above, providing no incremental road capacity and no specific means of restraint other than congestion itself, would lead to a 20% increase in journey times overall by 2031 which translates into much larger increases on some journeys and greater unreliability which will worsen more quickly. This is clearly inconsistent with providing personal mobility and is economically and environmentally undesirable. There is evidence that drivers adapt to congestion by changing their routes or times and at the margin giving up their journey or using alternative modes but this will become progressively more difficult as congestion spreads across time and space. This is the implicit policy of the past two decades and the adverse effects on traffic congestion can be seen on many major roads throughout the country.

The solutions vary according to whether the congestion is on the inter-urban trunk roads or in towns.

**Table 1.5**  
*The causes of congestion and some solutions*

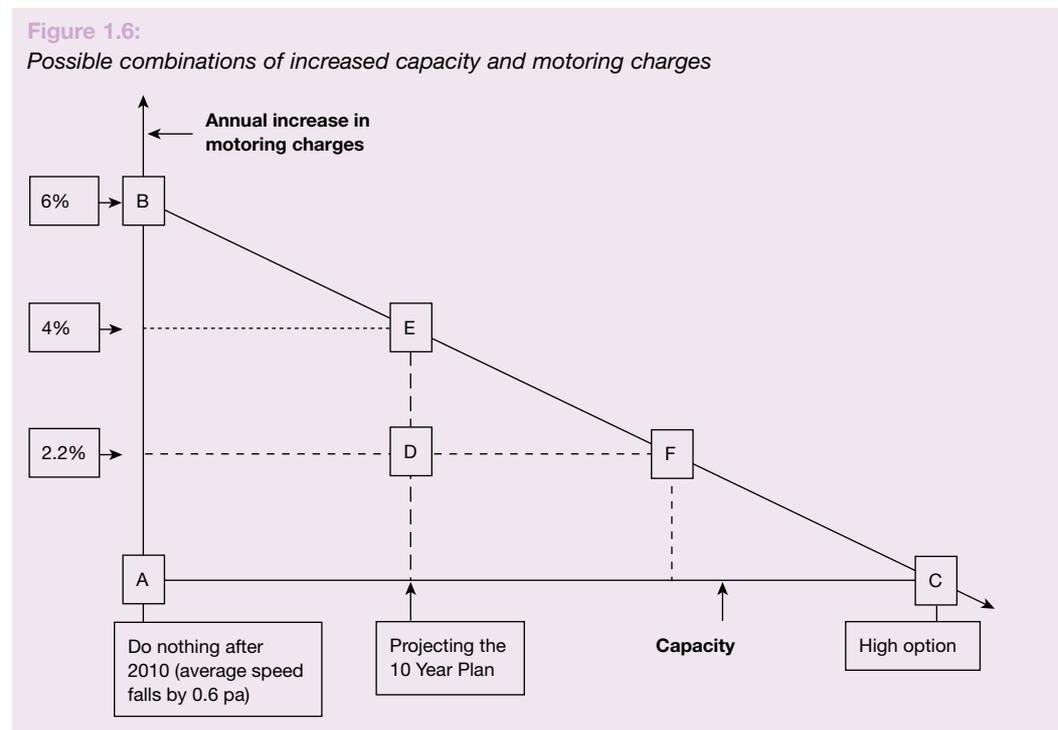
	<b>Inter-urban</b>	<b>Local</b>	<b>Causes</b>	<b>Volume of traffic</b>
Volume of traffic	Commuting			
Commuting	Shopping at peak times (Sat)			
Freight	Local deliveries			
Accidents	School run			
Roadworks	Mixture of traffic – through routes and local traffic			
	Parking – taking up road space			
	Parking – finding place to park			
	Accidents			
	Roadworks			
Problems	Lack of capacity		Lack of capacity at intersections	
	Junctions and access roads		Peak nature of many flows	
Solutions	Additional capacity – physical or electronic		Restrict access by regulation or pricing	
	Spread demand by default or charging		Improve junctions (grade separation, traffic management)	
	Public transport on high density routes		Town by passes to divert through traffic	
	Incident management		More/less parking	
			Public transport on high density radial routes	
			Better interchanges, park and ride	
			Out of hours deliveries	
			Tele-working and tele-shopping	

## Summary document

*The urban solution* Future car traffic growth cannot be fully accommodated in many urban areas and it will necessary to find other modes for certain car journeys which will prove publicly acceptable. The extent of motorisation possible or tolerable in different places depends on population densities, the road network in the area and the opportunities for expansion. Buses are usually the most practical and economic solution; extending rail is unlikely to be practical or economic except in London and a few large cities. Local differences in circumstances make generalisation impossible and each city and town with its hinterland must consider what is appropriate.

Improvements have to be made in transport and land planning at the local level and local authorities must start planning far enough ahead to enable them to make decisions now to provide for a tolerable future in 2030-2050 and to achieve such good results as the best European cities. Local authorities challenge at their peril the very high impetus there is behind increasing car ownership. They need to use a combination of measures, including bus priority, bus quality partnerships, road building at congested intersections, improved park and ride, provision of extra parking capacity and parking controls and local charging schemes as appropriate.

*Improving the inter-urban network* We have seen that physical and electronic means can increase capacity by 10-15% and that all available means must be used in combination. The 10 Year Plan provides the current framework. It is essential that the plan is delivered as intended, with schemes identified in multi-modal studies progressed quickly to implementation.



**Table 1.7**  
Summary of capacity and charging options. All the figures are illustrative.

Capacity option	Do nothing after 2010	High provision	Projecting the 10 Year Plan	Intermediate
Annual increase in motoring charges	0	6%	0	2.2%
Point on Figure 12.1	A	B	C	D
Capacity increase	small	small	40-50%	25%
Average speed kph 2001	80	80	80	80
2031	65	80	80	73
2050	50	80	80	70
Cost in 2031 (£ billion)	<1	<1	15-20	3.5
Cost in 2031 (% of GDP)	<0.1	<0.1	1	0.2

We have looked at implications for future congestion of different scenarios for investment in the road network:

- *no further substantial new investment after the 10 Year Plan period*; congestion would increase rapidly after 2010 to such an extent that a substantial element of the demand would need to be deterred by charging for access or use to the detriment of personal mobility and economic activity. This would require a 6% increase in motoring charges every year for the next 50 years to control congestion
- *continuing to invest until 2050 at the same rate as in the 10 year Plan*; provided investment is directed to the congested links, the growth of congestion should be slowed but will still remain a problem
- *high investment*: expanding the network to contain congestion at broadly current levels in 2050; this would require an unprecedented high resource commitment.

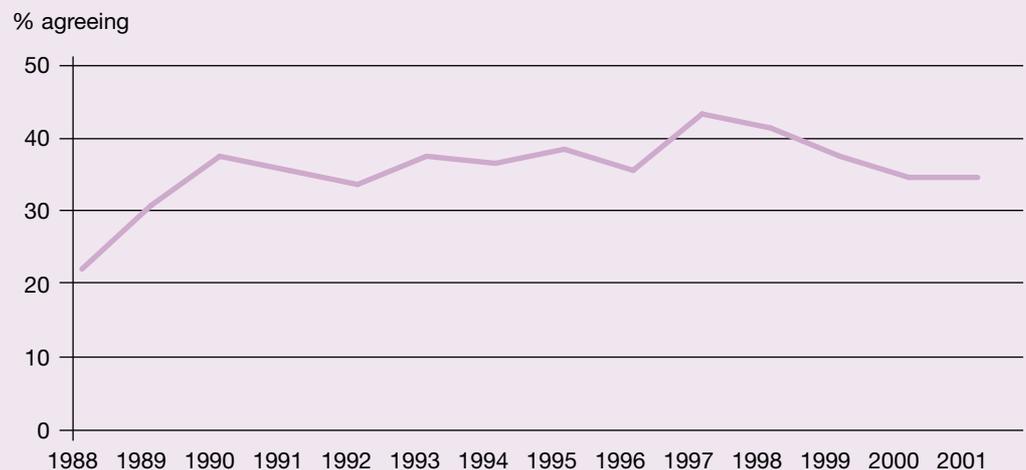
It is for the Government to decide how to strike the balance between investment in roads, allowing congestion to increase, and restraining traffic growth by charges or taxes. On the basis of our analysis, continuing investment will be necessary on the strategic roads on a scale at least as great as that in the 10 Year Plan. If it were at the level of the Plan, we estimate that there would be some increase in congestion, unless charges and taxes were to rise faster than incomes. Governments would probably consider the case for a higher investment programme. In any event, we believe that governments should explain publicly the combination of investment, charges and congestion that they have chosen, and the reasons for their choice.

We also suggest a number of improvements to the road building process itself:

- higher environmental standards of design, including tunnels, noise improvements and works to fit roads into the landscape
- more generous compensation for people affected
- faster statutory procedures to reduce uncertainty and blight.

*Demand management* The current fuel duties are an inefficient way of managing demand and would be better replaced, at least in part, by road charges which influence motorists directly at the place and time of congestion. However it is essential that they are sensibly implemented, that there are adequate safeguards and that the money raised is used to help finance worthwhile transport objectives and not be used for general revenue purposes. The amount of charge would depend on local conditions

**Figure 1.8**  
*I would use my car less if public transport were better*



Source RAC Reports on Motoring

## Summary document

Charges for journeys should be determined technically by reference to costs and congestion objectives: if congestion goes down, the charge would be reduced. Fuel duty should be reduced at the same time. Where the congestion charge on a stretch of inter-urban road promises to be persistently higher than the average for the area, that would be prima facie evidence that road improvement is required. Since there is little scope for building new roads in urban areas, local congestion charging schemes are acceptable in principle provided that there are adequate public transport alternatives for people priced off the roads. The revenue raised should go partly on improving congestion hot spots and alternative transport modes to help people priced off roads or who cannot use a car either because of disability or lack of means; and partly as receipts built up, to reduce fuel duty.

It has been calculated that currently and in 2010 congestion charges would be needed on only about 10% of the strategic road network and not at all times of the day. Many inter-urban road users and country-dwellers will benefit from the improved infrastructure and lower fuel duty and they will not be subject to congestion charges.

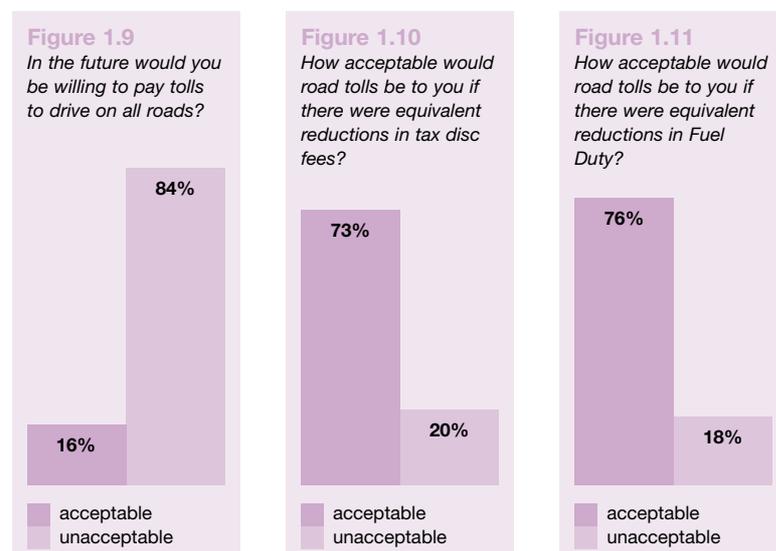
Congestion charging in London seems inevitable although this should be part of the national scheme but set with local parameters. In the short-run Londoners should gain from better bus services but investment in new and improved underground rail routes will still be required.

*Limiting Car Ownership* We have to recognise that if road pricing and increasing capacity do not reduce congestion sufficiently some restriction may be needed on car ownership since it is the main engine behind traffic growth. However most schemes – for examples those involving huge taxes on car ownership – would have highly undesirable consequences as they would restrict those in the lower income brackets who are often dependent on cars for employment, the young, and those families with more than one earner. In a free society, it is an unpalatable fallback if all else fails. Governments should be able to do better than this.

*Public acceptability* More than 80% of motorists say that they would find it very difficult to adjust to a lifestyle without a car. This figure has remained constant over the last 15 years. The number of motorists who said they would use their cars less if public transport were better rose to 46% in 1997 but after Hatfield and other problems on the railways this optimism dropped to 36% by 2001.

In our research we were looking for a package of measures which might be acceptable to the motorist, and indeed the general population. In the past motorists have been opposed to congestion charging. An NOP Automotive survey for the RAC Foundation in 1999 found that 75% of motorists thought it unfair to charge motorists to drive into towns and cities. Even when motorists were told that the charges would go back into improving transport only 51% were in favour, with more opposition in the north of the country.

Prior to the launch of this report we commissioned NOP Automotive to put some of our proposals to the test.



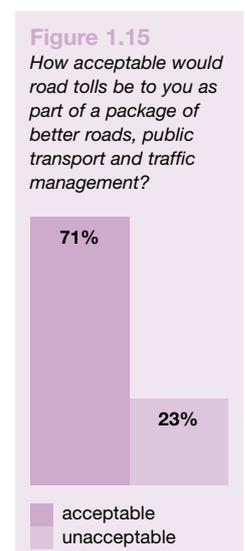
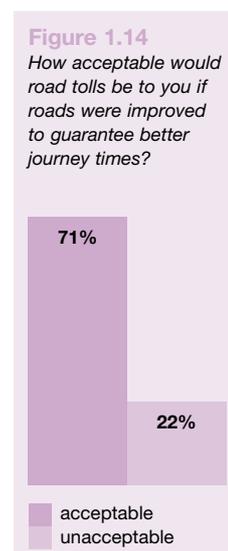
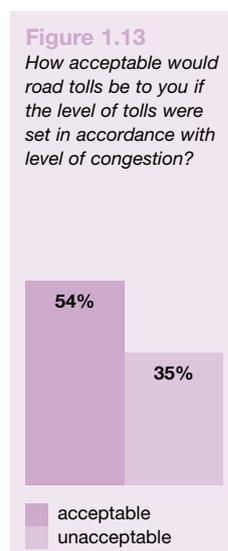
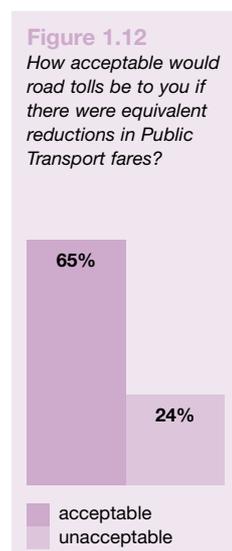
When motorists are asked whether they would be willing to pay tolls to drive in city centres or on motorways only 43% are in favour. However, if the charging package includes a reduction in fuel duty, support jumps to 76%. Even if other taxes are not reduced but tolls are introduced as a package of better roads, public transport and traffic management, then 71% find this acceptable. The survey also shows a resurgence of support for road improvements with over half of respondents opting for better roads and road maintenance. One third opted for investment in public transport and one in eight wanted money from tolls spent on public services.

In summary the motorist will accept charging as part of a package if the benefits are transparent and immediate.

## Conclusions and main recommendations

In conclusion the report finds:

- The car will remain the main form of personal mobility in 2050
- It will be clean, green and safe
- The challenge is to minimise adverse effects of traffic growth and congestion
- It is vital to implement the 10 Year Plan
- It is essential to speed up delivery of road schemes by streamlined process and better compensation
- Rail must be improved but do not expect to avoid the need to improve roads
- Technology will help to reduce traffic growth but not enough
- A very high level of road investment would be required to avoid congestion charges to restrain traffic
- A lower highway spend would require higher congestion charges
- The planning system needs to be more ambitious, more inventive and more strategic and developments at local level must be speeded up
- UK will require increasing levels of investment in transport infrastructure
- A package of measures is required, including extra capacity on road and rail, better traffic management and congestion charges. These would be used to finance transport improvements, and eventually, fuel tax reductions which will bring a net benefit to users of less congested roads.



## Summary document

### What is to be done

Looking forward over the next 50 years, we must recognise the reality of the current situation and start our planning now for an environment where the car remains the main source of personal mobility but adjust our approach to changing our lifestyle to overcome some of the problems the car causes. There is no silver bullet solution – we must use every tool, weapon and idea in a coordinated manner to tackle them in a way which is fair and just and makes economic, social and environmental sense for all.

We must:

- make fuller and more effective use of all the assets we have in transport – roads and public transport
- push public transport to make its maximum contribution to the travel problem but only as far as is economically and socially justified
- exploit technology to the full – to make transport safer and more environmentally acceptable
- use information technology to enhance the knowledge and capabilities of drivers and transport operators
- develop ways to help people to be less dependent on transport systems
- use spatial planning to reduce the need for travel without interfering with basic freedoms and to redistribute demand particularly away from the crowded south east
- reduce the intrusion of the car on existing residential communities
- invest in roads to deal with existing congestion problems and to meet changing demand, but make new efforts to build roads in ways which cause the least possible damage to the environment
- manage demand through various methods, including road pricing, parking controls and fuel duties.

Overall, it is for the government to decide the balance of priorities and the allocation of resources.

**Our report addresses the longer-term, but the long-term begins today.**



The Royal Automobile Club Foundation for Motoring Limited is a charity established to promote the environmental, economic, mobility and safety issues relating to use of motor vehicles.

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