

SETTING FORTH - IN THE WRONG DIRECTION

Michael Carley

The British should be warned. If they want to stop the traffic onslaught, now is the time to do it.

James Ortner, Air Quality Administrator, Los Angeles County, reported in **New Scientist**, June 12, 1993

At a time when global climate change and other serious effects of air pollution are ringing alarm bells worldwide, the future role of transport in the sustainable development of Scotland should receive careful attention. For example, the Government's **UK Strategy for Sustainable Development**, put out by the Department of the Environment (DOE) in July 1993 as a consultation paper, calls for 'a sustainable transport policy, looking to both the short and long term'.

A cautious welcome can therefore be given to the Secretary of State for Scotland's stated intention to 'evolve a practical strategy to meet our future needs' for transport, as part of 'a strategy to protect the environment'. In this context, the Scottish Office has funded, all or in part, studies on future transport in Lothian and Fife, under the general rubric **Setting Forth** (Scottish Office 1992). These reports constitute the Government's current proposals for the above-mentioned 'strategy' for the region.

*Michael Carley is an Honorary Fellow of the Centre for Human Ecology, Institute of Ecology and Resource Management, University of Edinburgh. He is the author of the recent book, **Managing Sustainable Development** (Earthscan, 1992). This paper was prepared in association with the World Wide Fund for Nature (WWF) Scotland.*

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However welcome the idea of a practical strategy, there should be serious concern about the environmental and land use implications of the **Setting Forth** proposals, and about their impact on quality of life in the region. The proposals are what might be called 'yesterday's solutions to tomorrow's problems'. They are fundamentally flawed in a number of ways. They are neither strategic, in terms of integrated transport, land use and economic development planning, nor can they be said to protect the environment in any way. In short, they are unsustainable.

The **Setting Forth** proposals:

- are heavily biased toward road building and attempt to justify the provision of a second Forth road bridge without examining more sustainable options for meeting the region's transport needs in future;
- will encourage the already rapidly growing use of motor vehicles in the Lothian - Fife region, in spite of the fact that the UK Government identifies carbon dioxide from motor vehicles as the main contributor to global warming from Britain in the next century;
- will strongly encourage traffic growth and thus deterioration of quality of life and health in both urban areas and rural villages in the region;
and
- will encourage low-density suburban land-use patterns which will never be serviceable by public transport, and which damage valuable agricultural land and recreational countryside.

The growth of 'automobility' in Scotland, the long lead times for constructing major transport infrastructure, and the fact that land use decisions spin out their effects over 50 or more years, mean that decisions taken now, such as over the second Forth road bridge, will determine the physical shape of Scottish society in the 21st century. It is important to question whether decisions being taken now are consistent with the stated intentions of government to bequeath an ecologically-sound Scotland to future generations.

GENERATING TRAFFIC - AND GLOBAL WARMING

There is overwhelming evidence for global warming. In Glasgow recently, Sir John Houghton, chairman of the Scientific Group of the Intergovernmental Panel on Climate Change, said that global warming is the biggest problem facing the world. Even with substantial reductions in carbon

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dioxide emissions at a world level, it will take more than 100 years to stabilise these emissions, which are the main contributor to the greenhouse effect.

One major implication for Scotland is that ozone holes, growing larger by the year in the southern hemisphere, are now opening in the northern hemisphere. This is because increased concentrations of greenhouse gases warm the lower atmosphere, and thus cool the upper atmosphere by trapping of the heat in the lower reaches. This provides an ideal environment for ozone-damaging chemical reactions initiated by the aerosol chemicals CFCs, with a likely impact of increased skin cancers for fair-skinned Scots.

By basing future transport provision in the Lothian - Fife region largely on increased use of the automobiles and heavy goods vehicles, **Setting Forth** ignores the latest findings on global warming published by the Department of Environment in London. These link the use of motor vehicles and new road building directly to global warming and a host of other negative environmental impacts. Among a range of greenhouse gases, carbon dioxide contributes about 70% of the direct effects on global warming. One Government report, **Climate Change**, warns that 'motor vehicles are the fastest growing source of carbon dioxide emissions beyond the year 2000' (DOE 1992).

The main sources of carbon dioxide emissions in Britain are power stations and transport. Transport currently accounts for 22% of the UK's carbon dioxide emissions - about 38 million tons of carbon annually. This is the second largest contributor after power stations, but the transport contribution, both in absolute terms and as a percentage of the whole, is set to steadily increase as power stations get cleaner under pressure from the European Community, and car ownership grows. In the Lothian Region, car ownership increased by 45% in the 1980s with a further growth of 33% to 48% predicted by 2010 (Lothian Regional Council 1993).

The Government admits that, under a 'do nothing' scenario, transport emissions nationally could rise to 62 million tons of carbon by 2020. In the Government's own words: 'increased...road transport is the main reason for the projected increase'. (DOE 1992). After the phased reduction in large power-station emissions, the road transport contribution to greenhouse gases is likely to rise to about one-third by the year 2000 and to nearly two-thirds by 2020.

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Road transport also accounts for a significant proportion of other pollutants in Scottish air: 85% of carbon monoxide, which soaks up the hydroxyl radical, the atmosphere's cleansing agent, thus allowing more greenhouse gases to build up; 45% of nitrous oxide, the main component of the acid rain which affects water quality and fisheries in the lochs and rivers of Scotland; and 28% of gaseous hydrocarbons, harmful to human lung tissue.

The effects of motor-vehicle air pollution are both widespread and insidious. For example, there has been a dramatic rise in the incidence of asthma in Britain, now affecting 15% of the population and killing three times more people than AIDS in 1992 (**Nature** 1993). The doubling of childhood asthma cases in the past 20 years is linked to the growth in air pollution from road traffic (Whitelegg 1992).

In light of this kind of knowledge, the curbing of road transport emissions should be a main objective of any responsible transport strategy.

SETTING FORTH - UNSUSTAINABLE DEVELOPMENT?

An influential research report, **Reducing Transport Emissions Through Planning**, published in mid-1993 by the DOE, links road building with the suburbanisation of urban functions and the encouragement of land use patterns for employment, retailing, housing and recreation, which involve virtually complete reliance on the motor vehicle for mobility (Ecotec Research and Consulting 1993). The clear message of the research is that these land use patterns are unsustainable and should be discouraged, a policy now set out in a draft **Planning Policy Guidance Note** (PPG 13) for England and Wales (DOE/Welsh Office 1993). **Setting Forth** ignores a range of implications of this latest research.

Air Pollution

The report notes that these land use patterns contribute substantially to the overall load of carbon emissions and other forms of air pollution and that:

road transport is the most polluting travel mode. For example, car carbon dioxide emissions per passenger kilometre are nearly twice as great as those for rail. For freight, emissions per tonne kilometre are over four times as great from road freight as from rail freight (op cit, p.19).

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In light of this information, the **Setting Forth** proposals represent unsustainable development, and contradict the Government's stated commitment at the Rio United Nations Environment and Development Conference to promote sustainable forms of development in Scotland.

Traffic Generation Effects

The **Setting Forth** proposals also ignore the fact that, like the M25 motorway around London, a new road bridge is likely to be a substantial generator of increased road traffic, rather than simply a response to existing demand. The mounting evidence of the traffic generation effects of new roads is so substantial it cannot be ignored; indeed it is very much accepted in most transport circles (Whitelegg 1992). The M25, for example, generated six times more traffic than forecast within three years of opening, and is now planned to be expanded to 14 lanes of traffic. **Setting Forth** is likely to lead to pressure for capacity increases on the Edinburgh bypass.

Suburbanising Effects

The **Setting Forth** proposals also ignore the finding of the DOE's consultants that orbital road building is a major factor in energy-inefficient decentralisation of urban activities. Yet the second bridge and its approach roads are intended to link directly into the Edinburgh orbital route and to serve a majority of drivers whose journey origin is neither far afield from the region nor in urban centres, but from dispersed land uses on the fringes of settlements and in the countryside in Lothian, Fife and Central Regions.

A look at the users of the existing Forth Road Bridge shows the suburban and rural hinterland origins of traffic over a 12 hour period, in this case for northbound drivers: Central Edinburgh (15%), England and the Rest of Scotland (22%), Rest of Edinburgh and the Rest of Lothian (63%) (Scottish Office 1992, p.24). This undermines the argument in **Setting Forth** that the bridges will serve mainly a trunk road function; it is more likely they will generate traffic and dispersed land uses in the regions adjacent to the bridges' approaches. These are the dispersed land uses identified as unsustainable in the research cited. They have constituted a strong, if environmentally unviable, trend in recent years.

In central Scotland in the 1980s this type of widespread dispersal of employment, housing and retailing has been coupled with a growth in road traffic and miles travelled. During this decade, the total vehicle miles driven

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nationally rose by 42%, the average daily traffic flow on each mile of road rose by 34% on all roads and by 52% on motorways. The Lothian Structure Plan suggests a further growth in traffic of up to about 70% by 2010, but cautions that since 1985 traffic flows for the UK as a whole 'have grown at a significantly faster rate than predicted' (Lothian Regional Council 1993).

Unlike the suburbanisation of the early part of this century, based on continued linkage with city centres, the key to the new settlement pattern of the 1980s has been the dispersal of employment, especially in the service and retail sectors, into 'business parks' on out-of-town sites, and a spread of the origins and destinations of journeys to all parts of the region. The central belt of Scotland has embraced this car-based, land use pattern in a big way; indeed many communities and regions have pinned their economic future on business parks, which rate regular, special sections of **The Scotsman**. Because they are entirely car dependent, and cannot be economically serviced by public transport, such strategies cannot be sustainable.

A related trend is recreational, automobile-based shopping, of a type which became popular in the USA in the 1960s, and which virtually destroyed the retail function and thus city centres of many American cities and towns. Americans are now waking up to the fact that the loss of their town centres constitutes a national tragedy, and, in many places, a social disaster, as economic vitality is replaced by crime and dysfunctional behaviour (Robertson 1987). That dispersed retailing has spread to Britain is indicated by a government survey of leisure trips involving a round trip of 20 miles or more, which reveals that in 1988-89 there were 55 million automobile journeys for non-food shopping, 10% of all trips (Baty and Richards 1991). Of these, 56% were trips of over 40 miles.

The majority of dispersed retailing is in cheap shed-type warehouse stores, grouped on common sites, such as at Newcraighall on the Edinburgh orbital road. More visible is the shopping centre, such as is planned to open in 1993 at South Gyle, with 53 stores, 2500 employees and parking for nearly three thousand cars. South Gyle also boasts the 'largest Safeway in Scotland', thus reinforcing the trend that by the year 2000, out-of-town, car-borne shopping will account for 65% of all grocery trade, up from 12% in 1980 (Northcott et al 1991). After the recession, there will be renewed pressure for yet more of this type of car-based development in the vicinity of the Forth Bridge approaches. For example, there are already planning applications for two more shopping centres on the Edinburgh orbital, one near Gyle itself.

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Cumulative Environmental Impacts

The effect of what are now revealed as misguided land use and transport policies is the spread of low density suburbs, erosion of the rural land base, increased volumes of traffic over the entire region and over more hours of the day and into the weekend, a diminishing market for public transport, and the erosion of the economic viability of retailing in major town centres, neighbourhood shopping streets and rural villages alike. These developments marginalise the non-car based shopper. The evidence from the United States is that no matter how much public transport is built into such low-density developments, even expensive rail Metros as in Washington or San Francisco, more than 85% of all users will arrive by car (Orski 1987).

By aiding and abetting such unsustainable trends for many decades into the 21st century, **Setting Forth** ignores the responsibility of the Secretary of State, as the ultimate arbitrator of Scotland's structure plans, to help shape sustainable land use and transport patterns, as are now called for in the Planning Guidance for England and Wales. There is no reason to expect that land use and transport policies in Scotland should be less environmentally sound than those which are evolving in England and Wales.

FAILURE TO CONSIDER RAIL AND BUS INTEGRATION

Setting Forth not only ignores the environmental implications of its own proposals; it steadfastly ignores more sustainable transport options. The document notes that 'speed and comfort advantages offered by rail travel diminish as the distance from a rail station at either end of a journey increases'. This, and insufficient car parking at rail stations, is used as an excuse for ignoring substantive options to promote the use of public transport in the region. However, in an 'integrated' public transport system, such as are common in other parts of Europe, rail and bus transport are linked in schedule, often with through ticketing or monthly travel passes, to give pleasant and seamless journeys with minimal waiting times.

The Scottish approach can be contrasted with Switzerland's **Railbus 2000** initiative by which every Swiss resident will be able to travel with through ticketing from rural areas towards the main urban areas, airports and intercity rail stations by a highly integrated and fully modernised bus and rail transport system by the year 2000. The objective of **Railbus 2000** is to have such excellent public transport that most people will prefer to leave the car at home, thus freeing the roads for essential travel.

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Sadly for Scotland, and the UK as a whole, the current programme of privatisation of bus and rail, combined with a failure to plan coherently for transport, makes it extremely unlikely that Scotland could achieve the degree of public transport integration necessary to provide the level of service common in other European countries. The situation is made worse since the Lothian - Fife region lacks a Passenger Transport Executive, such as Strathclyde's, which takes an active role in planning and funding transport initiatives.

BIASED METHODS OF ASSESSMENT IN 'SETTING FORTH'

The entire assessment method of **Setting Forth** is flawed, in that more environmentally sound options, which would be considered in other European countries, are ignored. The environmental analysis looks only at various bridge options, ignores options based on enhanced rail/bus and railfreight and freight 'piggyback'. Also the 'no action' alternative is not systematically assessed, in spite of the fact this has been recommended in environmental assessment methodology for many years.

Setting Forth states its objective as meeting 'the demand for vehicular travel' and in providing 'benefits to traffic'. This is a strange way to phrase the key objective in a supposedly strategic transport review, particularly at a time when it is increasingly recognised that catering for traffic demand alone is a losing proposition, both environmentally and in terms of quality of life and business in the region.

Planning in a sustainable mode, on the other hand, looks not at 'benefits to traffic' but at the whole framework of transport and land use in the context of regional development. The Department of Environment report sets out the type of study necessary to reduce transport emissions: 'strategic studies to assess the impacts and costs and benefits of alternative land use and transport strategies at the regional and county level'. This philosophy of linked transport and land use planning is incorporated into the draft **Planning Guidance Note PPG13** which observes that 'by influencing the location of development relative to transport provision and vice versa, development plans can be used to reduce the need to travel, especially by car.'

Within this context, if road building can then be justified in terms of the trade-offs between economic development and environmental quality, and the benefits to be derived from an economically-sound perspective on road, rail, air and water-borne transport, then it could well have a place in

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development. However the presumption in **Setting Forth** that road building is the only option, because that is what the Scottish Office has authority over, is out-dated and unsound.

A recent book, **Transport for a Sustainable Future**, describes the Dutch approach, in terms of a study underway in the busy Amsterdam -Utrecht corridor:

They [the Dutch Government] are looking at traffic growth forecasts and then studying how to meet the demand. Instead of just accepting that, say, most of it will go by road, they try to assess what infrastructure is needed to make sure it goes by more environmentally friendly methods such as rail or waterways (Whitelegg 1992).

Following from this, it is interesting to note that the Dutch Government, in their National Transport Plan, have set out clear, quantified targets for reducing the number of journeys by car in favour of journeys by public transport, bicycles and walking, by increasing the attractiveness, safety and availability of those options. If these targets are not met by specified dates, new stronger policies are to be brought into play. Like most northern European countries, a key aspect of the Dutch strategy is to provide integrated public transport so frequent and efficient that it makes little sense to take the car. In Holland, as in Germany, this policy is being reinforced by the fact that an increasing number of employers offers public transport passes to employees who agree not to commute by car.

However, none of this type of environmentally-sensible policy analysis has been undertaken for **Setting Forth**. Indeed, as responsibility for road building is with the Scottish Office, and rail and bus policy is dictated mainly by the Ministry of Transport in London, and almost entirely geared to privatisation and little else, it is unlikely to occur in the present context. The Scottish Office could, however, commission such analysis if it so chose, and thus take a leadership position in sustainability planning for Scotland. Not do so, for such an enormous investment, would be grossly irresponsible.

A ROLE FOR STRATEGIC ENVIRONMENTAL ASSESSMENT

In keeping with the drive towards sustainable development, such as the UK Government is now committed to via Agenda 21 (the action plan to come out of the Rio conference on the Earth's environment), the methods of

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environmental assessment are now being extended to encompass policies and plans as well as projects. This is called strategic environmental assessment.

The case for responsible practice in transport analysis is put by the Royal Institution of Chartered Surveyors (RICS) in their report, **Shaping Britain for the 21st Century**: 'incorporate into the appraisal of highways investment not only the environmental costs of road construction, but the far-reaching environmental costs of traffic itself' (RICS 1992). They also urge the early use of road pricing to restrain demand and to provide funding for public transport alternatives.

At the very least, the Secretary of State for Scotland should institute a process of environmental assessment which considers a broad range of options for strategic transport links including substantial investment in public transport; an urgent increase in the capacity of the Fife - Edinburgh rail line with new stations, park-and-ride facilities, and integrated ticketing and scheduling with buses; encouragement of rail freight - building on links through the Channel Tunnel; and taking into account the full costs of increased levels of road transport including deaths and injuries, health costs to present and future generations, air and land pollution, and loss of quality of life in towns and villages. On the latter point, new research is expanding our understanding of the true costs of traffic increase, which is now linked to health disorders, community breakdown and increased street crime due to the removal of pedestrians from the environment (Whitelegg 1992).

CONCLUSION

A particular challenge in assessing the **Setting Forth** proposals is that they have evolved within the context of a national transport policy which has greatly favoured road transport over all other forms. As the RICS puts it: 'Road and rail compete on a notoriously uneven playing field'.

For example, rail freight in Britain has been decimated by the uneven playing field: comparing 1979 with 1992, 36.5 million tonnes of freight per year has switched from rail to road. This suggests around 1.45 million additional lorry journeys every year on our overloaded roads. The process continues: 1993 finds oil deliveries for Oban and its ferry and fishing fleet shifted off the Highland rail line to HGVs, which now thunder through the towns and villages on the A82 and A85. No one is prepared to take responsibility for the environmental costs, or the social dislocation and unhappiness, caused by this, or the tens of thousands of similar effects of current policy.

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Setting Forth therefore is no aberration, but a continuation of the triumph of the road building lobby allied with myopic Government policy. However, the unsustainability of such policies and proposals is now painfully obvious. The time is ripe for the Secretary of State for Scotland to initiate a thorough and open review of the potential for sustainable transport in Scotland for the 21st century: transport which gives the best combination of economic, social and environmental benefits for this and future generations.

In the short term, and given the likely disappearance of Lothian Regional Council as a result of local government reorganisation, the Secretary of State should establish a Forth Transport Board with powers over roads, road pricing, rail, metro and bus services. The Board would accelerate transport planning and co-ordinate funding for transport infrastructure in line with overall economic development and environmental objectives for the region. Without such an overview body, it is unlikely that transport in and around Scotland's capital region will be anything like ready for the challenges of the 21st century.

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