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Traffic management in Britain's national parks

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Traffic in Britain's eleven national parks is forecast to increase considerably over the next two decades, imposing inevitable pressures on the very nature of the parks. The four official committees established since 1945 to review the future of the parks have all advocated the adoption of stringent traffic management measures in order to control the negative impacts of traffic. The position of each of these committees regarding traffic and transport is summarized. The traffic management measures which have been implemented in the national parks are then reviewed in the light of the recommendations of these committees to illustrate that despite the park authority's support for the idea of traffic management, relatively little is at present being done. Some explanations are suggested for the lack of such measures and the conclusion is reached that without a change in the public's attitudes towards the use of cars and a stronger lead being taken by Government, the success of traffic management measures is likely to remain in doubt.

1. A perspective on the traffic problem

Traffic in Britain's eleven national parks has grown dramatically over the past 30 years with a particularly strong increase since the 1980s. In Dartmoor national park, for instance, traffic increased by 31% between 1985 and 1992 with average annual 24-hour traffic flows increasing substantially at each of the six permanent counter sites around the national park (Devon County Council and Dartmoor National Park Authority 1994). Partly because of the difficulty in defining 'rural', official statistics do not differentiate between rural and non-rural traffic. However, Stokes (1995) suggests that traffic on non-built up roads can be equated approximately to rural traffic. He shows that, using this definition, between 1977 and 1987 (the last period of availability of such statistics) rural traffic increased by 44% compared to 11% for non-rural traffic. A further indication of the growth in rural traffic can be derived from the increase of 44% in car ownership of rural residents over the period 1975–91 (Department of Transport 1993) and given that rural residents also do the greatest mileage (Department of Transport 1993), traffic generated by rural residents alone will have increased substantially.

It is forecast that traffic will continue growing at a rapid rate over the next 20 years. In 1989, the Department of Transport forecast that traffic in Britiain would grow by between 83% and 142% by 2025 (Department of Transport 1989). Stokes et al. (1992) suggested that traffic on rural roads may increase by between 127% and 267% by the same year. The Department of the Environment/Ministry of Agriculture, Fisheries and Food (1995) in the Rural White Paper admitted that if the Department of Transport's 1989 forecasts were to materialize, 'the steepest increases in traffic, especially in leisure and commuting traffic, would probably take place in the countryside, with unacceptable consequences in many areas'. There is no reason to suggest that traffic in national parks will grow at a rate different from that in other areas of the countryside.

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Traffic in national parks has already reached unacceptable levels in some places, particularly at peak periods. Parking, particularly on-road, spoils the very environment that people have come to see, and in some cases has led to the situation where air ambulances are required to attend accidents because access by conventional ambulances is blocked by parked cars. Congestion and environmental degradation are also serious problems in many cases. Traffic in the national parks is generated by residents of the parks and by visitors to them. Table 1 illustrates the population (giving an indication of the amount of traffic generated by residents) and the number of visitors per annum. In all of the parks, the majority (usually around 90%) of visitors arrive by car. It is clear that whilst commuting and recreational activity by residents may cause some problems, the majority are related to the number of visitors to the parks.

2. The official response

There have been four major reports on national parks since the Dower Committee was first asked to report on the theory and purpose of national parks. Traffic was an important issue in each of the reports. The Dower Report itself recognized the potential problems posed to the parks by traffic. It stated the following:

> But because motor tourists have unrestricted freedom to use all these primary and good secondary roads and to enjoy the scenery, it does not follow that they have any proper claim for the endless widening and improvement of all such roads to enable them to travel everywhere at high speeds, regardless of 'the view', and without risk of congestion, however many of them may take simultaneously the same Sunday outing. (Dower 1945, p. 24)

It goes on:

> That great damage, direct and indirect, to landscape beauty, to farming, to the peace and quiet of the country and to its enjoyment of visitors and residents, must follow – and has followed – from wholesale widenings, straightenings and flattenings, and from the encouragement they give to ever heavier and ever-faster traffic is plain enough from examples in many parts of the country. (Dower 1945, p. 25)

Table 1. The national parks of Great Britain.

National park	Area (square km)	Population in 1981	Approximate number of visitors per annum
Northumberland	1031	2200	2m visitor days/year
Lake District	2292	40000	14m
North York Moors	1432	27000	13m
Yorkshire Dales	1760	18600	6m
Peak District	1404	37400	22m
Snowdonia	2171	23800	10m visitor days/year
Pembrokeshire coast	583	23000	13m visitor days/year
Brecon Beacons	1344	32200	4m visitor days/year
Exmoor	686	10000	2.5m visitor days/year
Dartmoor	945	29100	10m
Norfolk and Suffolk Broads	288	5500	1·5m

Source: Edwards Report, 1991, and various others.

and concludes:

> The alternative (an uncomfortably real one at the approaches to popular beauty spots) of trying to 'beat the band' – more traffic, more improvements; more improvements, more traffic; *ad infinitum* – is palpably absurd. (Dower 1945, p. 26)

The report recommended that there was a need to restrain the growth of traffic in national parks and that allowing unlimited penetration by cars into the national parks was neither feasible nor desirable. It suggested that some roads should be restricted in their use by heavy commercial and public service vehicles and that usage of roads in the national parks should be reduced by improving roads outside the national park area. It also suggested that many of the roads in the parks should not be improved but rather left as they were for use by pedestrians, cycles and horse-drawn vehicles. Indeed, it suggested that subsidiary and rough roads should be shared out between motorists and non-motorists and continues:

> The first call, in National Park areas, is to determine the latter's share and, bearing in mind that walkers constitute the most important section of the public for whom the Parks are provided, to make it a generous share – almost all 'green lanes', 'drove roads' and mountain and moorlands cart-tracks, and many by-roads which have no through-route value and serve no villages, or are redundant alternatives to other and better routes. (Dower 1945, p. 25)

The Hobhouse Committee (1947) was, perhaps, not quite so committed to the rights of pedestrians and to the restrictions on the use of cars as Dower. It did, however, endorse most of the sentiments of the Dower Report. It stated:

> For motorists, as for other users, there must be generous provision for access, conditioned always by precautions against overcrowding which would destroy the very objects to which access is sought. In their joint plans for the treatment and use of roads in National Parks the Commission and the highway authorities must strike a wise balance between the dispersal and concentration of motoring visitors. (Dower 1945, p. 47)

Thirty years later, in the Sandford report (Department of the Environment 1974), the picture was very similar to that painted by Dower. Sandford stated:

> . . . the work of road alteration and widening goes on daily. Money, manpower and organisation are deployed to make it easier for more traffic to move more rapidly, and arguably with greater safety. (Sandford 1974, p. 81)

Sandford reiterated much of the sentiment of the Dower Report and went much further than Dower in terms of his suggestions. He recommended that some form of traffic management was required to protect the environmental quality of the parks. The report stated that:

> We hold most strongly that in national parks environmental quality should be the primary criterion and that the planning of road systems, the design of alterations and the management of traffic must be governed by that criterion. (Sandford 1974, p. 81)

It applauded the Goyt Valley scheme which was set up in 1970 in the Peak District. The scheme involved the closure of a two-mile section of the valley on

summer Sundays and public holidays and the introduction of a park and ride scheme. The report stated that the provision of special forms of public transport such as minibus or coach was a 'preferable alternative to the proliferation of car parks in the wilder ares of the parks or along the undeveloped coasts'. It also suggested that the success of the Goyt Valley scheme (which still exists today in a modified form) 'suggests that even now most motorists are quite prepared to leave their cars at the entrance to such areas and to continue either on foot or by minibus'. It continues:

> We believe that this sort of arrangement will become increasingly necessary and increasingly acceptable; indeed we would not exclude the possibility of some such schemes succeeding without the provision of alternative motorised transport. (Sandford 1974, p. 79)

The report recommended that road hierarchies should be established, that size and weight restrictions should be imposed on some roads, that monitoring and motoring advice systems should be set up, and that public transport should be encouraged in the national parks.

Twenty years after the Sandford report, Edwards (1991), chairman of the National Parks Review Panel which in 1991 undertook the fourth major review of national parks, concluded that:

> . . . national parks have, on the whole, been no more imaginatively dealt with in traffic management terms than has the countryside as a whole. (Edwards 1991, p. 50)

It was the panel's view that:

> . . . the environmental problems created by the motor car are among the most serious challenges our society faces over the next few decades . . . (Edwards 1991, p. 52)

and they suggested that the situation had been allowed to deteriorate since the time of writing of the Sandford report because of 'inaction' of the authorities responsible. The report suggested that the main requirement was for traffic management. It stated that:

> We believe that national park authorities should become leaders in experimental initiatives for traffic management in sensitive rural environments . . . Park authorities should be bolder and more imaginative. We are attracted by the suggestion put to us of car-free zones in the parks. . . . In a few areas, we think the balance of advantage lies in closing some public roads altogether. By reducing vehicular access in this way, the essential qualities of relative remoteness and wildness in our national parks would be extended. (Edwards 1991, p. 53)

It recommended that (p. 54):

> Explicit policies for traffic management and for public transport in national parks should be prepared by national park authorities jointly with the highway authority, and should be integrated with land-use policies in national park development plans and incorporated into the national park plan . . . (Edwards 1991, p. 53)

and that:

> Experimental traffic management initiatives should be introduced into the parks, including car-free zones. (Edwards 1991, p. 54)

In summary, successive official committees established to review the future of national parks have recommended that traffic in national parks should not be allowed to expand to the detriment of the environmental quality of the parks or the enjoyment of the users. Indeed, it is possible to detect a definite progression towards increasingly radical suggestions of ways to control car usage as the severity of the traffic problem increases. Throughout, there is a great deal of emphasis placed on the priority of the pedestrian over the motorist which is evidenced particularly in the call for car-free areas. Perhaps the single, most poignant, impression to emerge from the reports is the sense of disappointment in the degree to which authorities to date have embraced the traffic management concept. There is also a strong case made for the adoption of imaginative, experimental, and all encompassing measures.

3. The traffic management solution

As in urban and inter-urban areas there have been consistent measures taken in national parks over the last 50 years to increase the physical road capacity in line with demand. Such measures include roadbuilding, road widening and road straightening as well as other engineering-based remedies such as junction changes and roundabouts. The building of new roads and the widening or straightening of existing roads do not sit well with the purpose and philosophy of the national parks. As Edwards (1991), states:

> The Road network of the national parks, off the main through-routes, tends to be narrow, winding and frequently hilly. The roads themselves are often bounded by stone walls, banks or hedges, and many have attractive, floristically-rich verges. These features are an important part of the character of the parks . . . road widening and straightening – to accommodate more and bigger vehicles – is usually damaging to the character of the roads, and is unlikely to contribute to the conservation purpose of the national parks. (Edwards 1991, p. 50)

In the situation where increasing the supply of roadspace is not a viable option, alternatives to the 'do nothing' option must be sought. Given that the wholesale banning of cars is also not feasible, the answer appears to rest in methods of traffic demand reduction through management or control. As shown above, traffic demand management was advocated strongly in both the Sandford and Edwards reports. For traffic management policies to be successful, however, a good relationship needs to exist between the various responsible authorities concerned.

Responsibility for roads (except trunk roads) and traffic in the national parks lies solely with the highway authority of the county councils. There is no statutory obligation to consult the national parks authority or district councils about any road or traffic matter. Effective communication between the authorities is of immense importance and management of this relationship is obviously better in some cases than in others. In the good examples, personnel are jointly employed and the relationship is very positive and supportive. In some cases, however, the relationship between the authorities can be tense, even antagonistic.

The term 'traffic management' encompasses a wide range of measures ranging from simple weight restrictions on certain roads to integrated schemes involving both restrictions to car access and public transport provision. Table 2 illustrates

some of the traffic management measures that have been applied in the British national parks and explains their main objective. Most of the measures in table 2 can be categorized under the headings of 'carrots' or 'sticks'. 'Carrots' are 'pull' measures and involve the provision of alternative means of transport, the incentives to use these alternative modes, and the marketing of these modes. 'Sticks' are 'push' measures which involve discouraging or preventing the use of cars. Some of the measures, such as road classification downgrading or road hierarchies are less easy to place under the 'stick' category because they work more on a psychological level and are advisory as opposed to being compulsory. However, they do not provide the car user with the incentive to use an alternative form of transport and, therefore, have more of the characteristics of the 'stick' than the 'carrot'.

Evidence of the comparative success or failure of such measures is always difficult to assess because of the problems of deciding on the criteria for success and of knowing what would have occurred in the absence of any such measure. Research is currently being carried out by the author to determine the characteristics and conditions necessary to maximize the likelihood of success of traffic management schemes in national parks. Section 5 gives some indication of the relative impact of traffic management measures by considering the reasons for the failure of measures that have been tried and discontinued.

4. Actions taken by the national parks

Most of the national parks have embraced the idea of and the need for traffic management. The plan drawn up by the North York Moors Authority for instance, states that:

> It is important that visitors are encouraged to enjoy the Park, but also that the distribution of visitors and traffic is managed to minimise the negative impacts which arise from traffic congestion, erosion, damage to wildlife, inconvenience to local residents and, in some instances, the impact of sheer numbers on the character of an area. (North York Moors Authority 1991, p. 49)

Moore and Harvey (1992) of the Yorkshire Dales National Park Authority support this in their discussion paper on visitor and traffic management. They state that:

> In broad terms there is recognition that the demand for road space and car parking cannot be met by new construction. The financial and environmental costs are too great and each new or improved road link or car park generates increased traffic levels by releasing suppressed demand. Having acknowledged this, the importance of traffic management techniques to influence the demand for existing road space has become apparent. (Moore and Harvey 1992, p. 5)

The level of detail to which traffic management measures have been considered and the extent to which they have been implemented, however, differs considerably between parks. Some (such as the Peak District) have had traffic demand measures in place for many years, whilst others have not even introduced a road hierarchy, as advocated by Sandford. Northumberland does not even have a traffic management section in its park plan. The Lake District, in contrast, has set up a 'Lake District Traffic Management Initiative' in order to develop traffic management proposals

Table 2. A taxonomy of traffic management measures.

	Measure	Objective
Sticks	Weight restrictions	To discourage access to unsuitable vehicles which might cause unwarrented congestion, personal safety problems or damage to infrastructure such as unsound bridges
	Advisory routes for lorries and coaches (includes advisory one way systems)	To encourage use of most appropriate scale roads and minimize potential congestion/safety problems caused by, for example, two coaches meeting in a narrow lane
	Road hierarchy (with appropriate signing)	To encourage the use of the most appropriate roads by the different types of road user (e.g. through traffic, holiday traffic)
	Parking controls	To encourage off-road parking in order to reduce congestion and to minimize the visual intrusion of parked vehicles whilst still enabling access to the attraction. Also used to encourage use of alternative forms of transport
	Signposting	To ensure that drivers take the most appropriate route. Good signing is necessary to discourage additional mileage resulting from 'being lost'
	Road classification downgrading (e.g. from A road to B road)	Psychological deterrent to the use of certain roads by certain types of road-user. Also a deterrent at the development planning stage
	Traffic calming (e.g. road humps, gateways, speed restrictions, chicanes, introduction of street furniture)	To decrease the priority given to road vehicles and to encourage space sharing by all modes (including walking and cycling)
	Vehicle exclusions	To improve the physical and human environment for visitors
Carrots	Improving the provision of public transport (including park-and-ride schemes)	To encourage the use of energy efficient, space efficient and environmentally efficient transport instead of cars
	Cycle routes and footpaths	As above
	Education/marketing	To persuade car users that it is better to leave the car at home and make the journey by some other mode

(Lake District National Park Authority 1995) which aims to accomplish the following:

(*a*) Reduce traffic impact on the environment.
(*b*) Reduce traffic and parking congestion.

(*c*) Offer alternative modes of transport to the car.
(*d*) Maintain the tourism industry within the national park in accordance with the structure plan policies, and to assist it to become sustainable.
(*e*) Generally tailor traffic to the ability of existing roads to cope.
(*f*) Enable the local community to proceed about its normal business.
(*g*) Ensure that the national park remains accessible for 'quiet enjoyment'.
(*h*) Improve the accessibility of the national park so that it remains accessible to all people, irrespective of income or disability.

The extent to which park authorities have introduced schemes is to some extent related to the need for such measures (i.e. the degree of traffic pressure). The Peak District is the most visited of all the national parks and probably has the greatest number of traffic management schemes. Contained in table 3 is a summary of the main traffic management actions in existence as of August 1996.

5. Discussion

Several interesting points emerge from the park plans, other related literature originating from the national parks, and discussions with the park authorities. First, it has taken a surprisingly long time to implement even the most basic of Sandford's recommendations in many cases, and very few parks have implemented bold traffic management schemes as advocated by Edwards. Road hierarchies, for example, advocated by Sandford in 1974, have been introduced by most parks, but in some cases it has taken around twenty years to impose them. Exmoor's hierarchy was still in a draft stage as at 1990 (Exmoor National Park Authority 1991); the Brecon Beacons' hierarchy was implemented in the early 1990s (Brecon Beacons National Park Authority *undated*), the Lake District's hierarchy was implemented in 1995 (Lake District National Park Authority 1995) and Northumberland does not have one at all yet (Northumberland National Park Authority *undated*).

Second, as can be seen from table 3, there has been much more of an emphasis on the provision of public transport (the carrots) than on measures to deter the use of cars (the sticks). Whilst some of the parks (the Peak District and Lake District) have introduced small areas of car exclusion and others (for example, Dartmoor) have tried, still the total number of schemes involving car exclusions is extremely small (four in total).

Third, although both Sandford and Edwards advocated the use of traffic management measures, it is clear that several of the parks are only just now considering the options. Park authorities seem to have adopted a reactive as opposed to proactive approach to planning. They also appear to have a fatalistic attitude towards their ability to influence the level of car usage. The Pembrokeshire Coast Park Plan for instance, states that:

> Although the actions of the Park Authority alone are *unlikely to influence fundamental attitudes*, the Authority has a part to play in promoting less environmentally damaging forms of transport. This could *take the form*, for example, of better information about services and their links to recreational opportunities, promotion of 'car free' days, and support for trial public transport changes . . . (Pembrokeshire Coast National Park Authority *undated*, p. 55)

and the Exmoor plan states that:

Table 3. Traffic management schemes currently in place in U.K. national parks.

National Park	Type of scheme currently in existence
Northumberland	Hadrian's Wall bus service integrated with bus and rail timetable, supported visitor bus services, guided walks linked to bus services.
Lake District	Road hierarchy, integration of bus, train and boat services, increased boat services on the lakes, support for public transport timetable, traffic calming, closure of road at Under Loughrigg near Ambleside, restricted parking, improved summer bus service, computer screens showing public transport network at key locations.
North York Moors	Road hierarchy, car parking, support to Esk Valley railway line and the North Yorkshire Moors Historical Railway, subsidized shuttle bus around the park on Sundays and public holidays, green pass park and ride scheme at Pickering.
Yorkshire Dales	Road hierarchy, support for the Settle-Carlisle railway and the Dales Rail service, marketing of the Dalesrider and Dalesrover bus tickets, Wharfedale Whippet free high frequency bus service based at Grassington.
Peak District	Road hierarchy, Roaches, Goyt Valley and Derwent Valley integrated traffic management schemes, support for the Hope Valley railway line.
Snowdonia	Road hierarchy, Sherpa bus network, free guided walks for public transport users, community rail officers to promote rail use.
Pembrokeshire Coast	Park-and-ride at Tenby, coach restrictions, car parking measures.
Brecon Beacons	Road hierarchy, post bus centred around Llandovery.
Exmoor	Functional Route Network (road hierarchy) advisory roads for coaches and lorries, community buses, Exmoor-wide public transport timetable.
Dartmoor	Road hierarchy, Transmoor Link bus route linked to guided walks, integration of bus services with Plymouth-Gunnislake rail service, support for Dartmoor Rover bus ticket, boundary gateways, 40 mph speed restriction across much of the open moor, road classification downgrading, parking measures, advisory coach and minibus route network.

Source: Compiled from the national park plans of each park and various local publications.

> National forecasts of vehicular use are alarming. The combination of greater car ownership and increased leisure time suggest a potentially significant growth of recreational journeys on Exmoor, unless either alternative opportunities are developed away from the national Park or there are severe economic or other constraints on vehicular use. This may not happen within the five years of this plan, if at all, but it is essential that the situation is monitored carefully, and plans and policies adjusted accordingly. *It is not, however, realistic to believe that the National Park Authority in itself can influence these trends.* (Exmoor National Park Authority 1991, p. 67)

Under current legislation, traffic levels in the parks can be influenced by the parks themselves but a lead is definitely required by Government. Resorts in other

countries, such as those in several alpine villages, have managed to ban car access successfully and yet still have flourishing economies. Indeed, in Switzerland there exists an association of car-free resorts (the Gemeinschaft Autofreier Schweizer Tourismusorte, GAST), whose membership consists of resorts which have banned traffic except for electrically propelled vehicles and horse-drawn carts and sledges. These include the thriving communities of Zermatt and Wengen. The schemes are fully supported by the residents of the villages (Anderson 1993), although there are some parking displacement problems in neighbouring villages. A similar situation exists in several villages popular with tourists in the Czech Republic.

Fourth, it is also clear that several parks have tried to implement schemes which have had to be abandoned for various reasons:

(*a*) In Exmoor National Park, the park-and-ride scheme at Lynmouth was not successful because of lack of use and was abandoned.
(*b*) In the Yorkshire Dales National Park in 1980 'an experimental traffic regulation scheme was proposed by the Transport and Road Research Laboratory in respect of Gordale Lane, Malham, which provides access to Gordale Scar. This was abandoned in the face of strong local opposition' (Yorkshire Dales National Park Authority 1984, p. 80), In 1979 and 1980 the National Park Committee provided financial guarantees for the development of the Three Peaks bus service between Giggleswick and Hawes. 'The response to the experimental Sunday service between Giggleswick and Ribblehead was disappointing and led to its abandonment' (op. cit. p. 82). A Dentdale experimental bus service introduced in 1978 was discontinued in 1981. It covered less than a third of its operating costs and has now been replaced by an experimental taxi-sharing scheme (op. cit. p. 83).
(*c*) In the Lake District National Park, at Borrowdale, plans to subsidize a park-and-ride scheme with higher car parking charges had to be abandoned because of local opposition (Lake District National Park Authority 1992).
(*d*) In Snowdonia National Park, the Snowdon Sherpa traffic management experiment involving park-and-ride and car parking restrictions failed, mainly because of insufficient enforcement of the parking restrictions.
(*e*) In Dartmoor National Park, an integrated traffic management scheme was proposed in 1995 at Burrator reservoir involving summer Sunday and public holiday road closures, park-and-ride schemes, cycle routes and car parking measures. This proposal was also abandoned because of fierce local opposition (Cullinane et al. 1996a).

It appears that the two major reasons for schemes being abandoned are firstly, lack of use of the service in the case of public transport provision, and secondly, local opposition in the case of schemes to deter car usage. One of the problems with persuading people to use public transport is always the difficulty of information provision. With bus deregulation, this has become even more pronounced. The marketing of such schemes is of paramount importance. Successful schemes have sometimes involved the inclusion of some other incentive to use the public transport service (such as discount tickets to country houses in the Wayfarer project in North Yorkshire). The provision of novelty transport (for example, steam trains or vintage buses) has also proved successful in some cases. However, the provision of carrots without appropriate sticks may not be sufficient (Cullinane et al. 1996b).

Fifth, local opposition to a scheme is a very difficult problem to overcome. It sometimes centres around the belief that local businesses may lose revenue (Yorkshire Dales National Park Committee 1995, Lake District National Park Authority 1992). This was often the belief held by businesses when pedestrianization was proposed for city centres. In most cases, the belief proved to be unfounded and business revenues flourished following pedestrianization (Hass-Klau, 1993). However, local opposition to a scheme may also arise out of ignorance about the purpose of the scheme or because of the long-winded planning process required to implement it (Cullinane et al. 1996a).

Sixth, it is obvious that public funding limitations are preventing the implementation of many of the 'carrot' elements of traffic management schemes. Since bus deregulation in 1986, public authorities have much less control over the provision of bus services. They are only able to provide services that would be unprofitable for a commerical company to provide and which consequently require subsidy. Several of the parks state that bus services have improved since deregulation, but they also mention the problem of information co-ordination.

6. Conclusion

Since the 1940s when Dower was asked to report on the notion of establishing a set of national parks in Great Britain, there has been disquiet concerning the negative impacts of traffic within them. Successive committees established to consider the future of the national parks have advocated stringent traffic management measures and have reiterated the need for equal access to all, including those without the use of a car. Most of the national parks have gone to some effort either to promote the use of public transport or to restrict car usage, but many of the measures introduced have been piecemeal and small. Only in a few of the parks does there appear to be a real committment to the notion of traffic management. However, in several cases where visionary and broader, integrated schemes have been devised, they have either not reached implementation stage because of local opposition, or have had to be abandoned soon after implementation because of lack of use, lack of funds and local opposition. Only a handful of schemes have survived and could be deemed to be successful.

According to the Traffic Management Strategy Officer of Dartmoor National park,

> society in general has become more car dependent and there has been a population shift in the national parks towards commuters and retired people. This makes the promotion of alternative methods of transport and restrictions on car use very difficult to achieve.

It appears that a more positive change in the situation will require the simultaneous implementation of three strands of policy:

(*a*) The provision of high quality, reliable integrated networks of public transport with local and national, well marketed and easily accessible, information co-ordination points.
(*b*) A well enforced system of car usage deterrents such as tight parking restrictions and maybe road pricing, implemented throughout the parks in order to minimize displacement effects.
(*c*) A national publicity campaign to change the car culture.

Although the U.K. government supports the notion of reducing car usage, policies such as the one just announced of establishing three Regional Traffic Control Centres to reduce congestion, send out the wrong signals to the public. This policy seems to be saying 'carry on using your cars and we will find ways of absorbing traffic into the road network'.

The three strands of policy outlined above require additional central government funding. Responsibility for the first two lies with local authorities who do not have the funds to implement such measures. Responsibility for the third, which would entail a campaign such as that devised to reduce drink driving, lies squarely with central government. Without this funding (which could be transferred from the roadbuilding budget), changes will be impossible.

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