

NATIONAL ROAD TRAFFIC TARGETS

**Advice by the Commission for Integrated
Transport**

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Introduction

1. CfIT responded keenly to Government's request to consider as one of its first tasks the potential role of a national road traffic reduction target. We have taken this on as part of our wider advice on targets for assessing the success of the integrated transport strategy, and the policy instruments needed to realise them. We will be reporting more substantively on these issues in the new year, but are issuing now our advice to Government on the role of national road traffic reduction targets, as the Government needs to issue its first report, by next month, under the Road Traffic Reduction (National Targets Act) 1998. CfIT has used as the basis of its assessment preliminary results from DETR's analysis ('the DETR / WSA analysis') of the potential impact of Integrated Transport White Paper (ITWP) and related transport policies, drawing on work by DETR itself as well as on an external study by WS Atkins¹.

Forecasts of traffic growth

2. New calculations by DETR / WSA have increased the central forecast of future growth in overall traffic between 1996 and 2010 to 35% in the absence of White Paper policies. This is higher than the central projection in the 1997 National Road Traffic Forecast (NRTF) of a 28% increase from 1996 to 2011, principally because of the estimated long-term impact of the voluntary agreement between the EU and European car manufacturers. The latest estimates of 'without White Paper' traffic growth also take account of the Chancellor's announcement on 9 November that there will no longer be an automatic Fuel Duty Escalator, increasing fuel tax in real terms each year, and of the impact of the Targeted Programme of Improvements

¹ 'Assessing the Effect of Transport White Paper Policies on National Road Traffic'. This study has been funded by CfIT, although initiated by DETR; Professor Phil Goodwin of the Transport Studies Unit at University College London, was appointed as advisor to CfIT's Targets Working Group, and has represented CfIT on the Steering Group.

on motorways and trunk roads². This 35% growth represents a 'base case' against which to assess the impact of White Paper policies.

3. The DETR / WSA analysis identifies a range of scenarios assuming implementation of key White Paper measures at increasing levels of intensity (the approach is explained more fully in **Annex A**). The most intensive assumes a range of measures are in place, making public transport, cycling and walking more attractive at the same time as making the full costs of the less sustainable modes more evident. Key elements of this scenario are:

- high quality local transport plans implemented successfully by all local authorities and fully funded from central and local government and from new ring-fenced charges on transport;
- substantial investment in inter-urban rail improvements;
- significant growth in rail freight and coastal shipping;
- application of road user charging and workplace parking levies in all urban areas;
- limited charging on the most congested inter-urban motorways and trunk roads.

This scenario results in traffic growth of 21% over 1996 levels by 2010³. A mid-range scenario, involving less intensive application of the charging measures, would lead to traffic growth of 27%.

4. It is important to stress that, particularly because there has been very little time to take on board the impacts of the ending of the Fuel Duty Escalator, these figures must be treated as highly provisional. CfIT is using them simply as an indication of the likely impacts of different approaches to implementing the White Paper policies, to help determine whether a national target on traffic has a role to play. CfIT also recognises that these national-level figures are averages, masking often wide variation across the seven types of areas used in the DETR /

² The 1997 forecasts assumed 6% p.a. real fuel duty increases from 1996 to 2002 and an unchanged road network.

³ CfIT is content to use this 14-year period to 2010 as a useful planning timescale; it takes us from the change of Government roughly through to the end of the period covered by the second (2006-2011) round of full Local Transport Plans, and so should enable assessment of the effects of two successive full Plans, and of Government's commitment on integrated transport policy.

WSA analysis⁴. The intensive scenario would achieve a reduction in traffic levels in London and the conurbations from 1996 levels, whilst traffic on inter-urban motorways would still rise by 38%. In addition, the investment needs which underpin the scenarios and the availability of finance, from a combination of private sector, public funds and ring-fenced charges, have yet to be analysed.

5. CfIT takes the view that the DETR / WSA analysis is credible and technically generally well-founded, and as such is of great value in highlighting the scale of the problem facing us – on the base case of 35% traffic growth, and, more importantly, on its impacts, in the absence of intensive application of White Paper measures. It must however be seen as only a first step: more work is required, including the development of a genuinely multi-modal approach to forecasting.
6. CfIT recognises that the ‘intensive’ scenario, holding traffic growth to 21%, entails a very significant increase in investment in inter-urban rail and local transport, some of it funded by road users under widespread new charging regimes, and as such requires considerable political will and public support to carry through. However, we believe there may be scope to keep traffic growth lower still, not least because there are some aspects in which CfIT believes the DETR/WSA analysis underestimates the potential effect of White Paper policies. The most likely areas are:
 - omission of some important elements in the White Paper, including the effects of lower speed limits and/or better enforcement, and of planned further changes in company car taxation;
 - insufficient account taken of the full potential of White Paper policies, including active promotion of and improvements in quality of local public transport, planning policies which reduce the need to travel, and the synergies between these and more intensive application of road user charging and parking restraint;
 - the consequence of the averaging technique employed, which will inevitably understate the intensity with which the most committed local authorities, in those areas where the problems are greatest, could apply White Paper measures. This is likely to be especially

⁴ London; the conurbations; larger urban areas; smaller urban areas; inter-urban motorways; rural A-roads; other rural roads.

true of initiatives which focus on particular journey types, such as school and shopping trips.

7. Nonetheless, it is clear to CfIT that it will not be possible to halt the growth in national traffic levels within the medium term. To do so in a growing economy would require a complete restructuring of the link between economic growth and generation of car and lorry trips. All the available measures must be taken to reduce this link, known as 'transport intensity', but into the medium term we must continue to regard traffic growth in much of the country as inevitable. We can however stress that some of the worst affected areas could experience traffic reductions if White Paper measures are applied sufficiently intensively.
8. CfIT is clear that we cannot compare the various scenarios without an assessment of the accompanying economic costs and benefits. Reductions in congestion can in some circumstances bring economic as well as environmental and social benefits, as shown by SACTRA in its report on Transport and the Economy⁵. But there will come a point where the additional economic benefits of traffic restraint begin to be outweighed by the costs imposed. Completion of the economic welfare analysis of these scenarios is a very high priority and we urge DETR, supported by CfIT, to progress this as rapidly as possible, and to identify whether the more intensive scenarios go beyond this point. This analysis will also need to consider the distribution of impact on different groups of users: for example, business v private use, and the poor or disadvantaged versus those who are more affluent.

Overseas experience

9. These findings are consistent with the conclusions reached in other developed countries that have been addressing the problems of traffic growth. In the Netherlands, the authorities have been working to control traffic growth through a series of national Transport Structure Plans, encouraging modal shift to public transport, and otherwise reducing the need to travel. However the new Structure Plan now being prepared is having to recognise the failure of its predecessors:

⁵ Transport and the Economy, The Standing Advisory Committee on Trunk Road Assessment, August 1999, for the Department of the Environment, Transport and the Regions, TSO Publications, Norwich. ISBN: 011753507 9

the target of holding growth in road traffic to 35% (for the period 1986 to 2010) is expected to be overshoot by 10 percentage points, and consequently this time no traffic target is being proposed.

10. National forecasts in France point to a 40% growth in road traffic between 1996 and 2020 on even the most ambitious scenario of measures to encourage shift to other modes; continuing with existing policies in France would lead to a 93% growth over that period. However the higher population density in the UK than France means that we have greater potential for reducing traffic growth, and so the Dutch experience is perhaps the better guide. And we must recognise that at local level there are several examples of cities elsewhere in Europe – including Copenhagen and Zurich - which have managed to keep traffic levels in check without holding back economic prosperity.

Adverse impacts

11. Traffic levels are important in their own right, because of the disruption high levels can cause, and as para 20 below points out, this severance can be a problem for rural as well as urban communities. However, the main reason for seeking to manage traffic growth is because of the measurable adverse impacts it causes. CfIT believes that attention should focus on these:

- (i) **Air pollution**

The DETR / WS Atkins work reports that, if the voluntary agreement with the car manufacturers is delivered, *CO₂ emissions* should return to close to their 1996 level by 2010, even without application of White Paper measures. Under the most intensive scenario, they fall by some 8% . Far more substantial reductions (up to 75%) are forecast in the *NO_x and PM10 emissions* that affect local air quality. This is mainly a result of the great improvements in engine technology in recent years, and the renewal of much of the vehicle fleet by 2010. CfIT, through its Pollution Working Group, is considering possible additional measures to accelerate this improvement. There are no grounds for complacency, particularly as the Government is committed to ambitious targets of reducing overall CO₂ emissions below 1990 levels, but CfIT believes that sufficient alleviation of the pollution adverse impacts of traffic is already in sight.

(ii) Safety

Increased traffic levels will, all things being equal, lead to more accidents on the roads. It is essential that we maximise efforts to improve the safety record of road transport. We look to DETR to come forward, in its forthcoming Road Safety Strategy, with a comprehensive package of measures to intensify action. This needs to include further action on inappropriate speed, on both rural roads and urban streets, perhaps drawing on new satellite technology, and on targeting groups posing a high-risk to themselves and others, such as young drivers.

(iii) Congestion

Congestion is the impact where most action is still needed. It is undesirable because roads operating above capacity tend to have worse accident rates, and most emissions are higher from slow-moving vehicles. These consequences are already being addressed, as part of actions on pollution and safety, but the biggest remaining problem is in the cost of time lost to both the business and private user of the roads. Congestion can be measured through changes in total vehicle hours lost below free-flow speeds.⁶

12. From the DETR/ WS Atkins data available now, we could face a 65% increase in this measure of total congestion over 1996 levels by 2010 if traffic is allowed to grow by the 35% forecast in the absence of White Paper measures. However, the model shows this measure of congestion falling back to 1996 levels (in fact provisionally 1% lower) under the most intensive White Paper scenario, even though traffic still grows by 21%. Furthermore, these overall averages disguise important differences; some urban areas could experience major reductions in congestion, whereas inter-urban motorway congestion continues to grow significantly. Under the model, the congestion impacts are much more sensitive to varying application of White Paper policies, because the policy tools being applied will generally be targeted at

⁶ Another useful indicator is the average vehicle hours lost; this gives a better view on how an individual's journeys will change, whereas the total measure is better at conveying the overall social and economic impact. CfIT's main report on targets next year will consider congestion indicators in more detail.

those areas where congestion is most severe. The White Paper prioritises action on impacts, such as congestion, rather than on traffic levels themselves, and it is congestion that responds most to the intensity at which measures are applied.

13. CfIT concludes from this work that, without action, the impact of traffic growth, around a 65% increase in congestion, will be unacceptable. But applying White Paper measures to the extent needed to start tackling congestion will be a major challenge. Even then congestion will get worse before the effects of the new policies start to be felt. There is an argument that progress will only be made if a national road traffic target is set, to steer local authorities in particular into pursuing the more radical options, because of the effect it will have on congestion and other adverse impacts of road traffic growth.
14. CfIT recognises however that a single, national top-down target, for traffic or congestion, would have several limitations:
 - its level and significance in differing parts of the country will vary immensely, and a national target would mask almost all of this reality. Local Transport Plans should reflect these differences;
 - it is important to hold to the concept of options, rather than pursue a single figure;
 - most of the tools in the White Paper armoury will be agreed on and implemented at local level in line with the new principles of local autonomy;
 - a single 'end-year' target would be of little help to policymakers in tracking progress during the interim period, lasting as long as 12 years;
 - the greatest potential for tackling congestion is where the problems are most severe, and a national target, inevitably an average, could hold back achievements beyond that level in those areas.

Issuing 'benchmark profiles'

15. These concerns could be addressed through the development of a series of 'benchmark profiles'. Each one would be a benchmark, or a yardstick, against which to measure progress. It is a profile in that it consists of a specified indicative level for each year, or every 2-3 years, over the next 10 years, and could thus allow for the gradually accelerating impact of the new policies.

16. CfIT recommends preparing a matrix of benchmark profiles, using three dimensions:

- first, for each of the different area types;
- second, covering both congestion outcomes and underlying traffic levels;
- third, setting out the packages of measures needed to achieve them, based on the key policy scenarios from the DETR / WSA work⁷.

17. CfIT advises that a single national end-year target on road traffic or resultant congestion levels will not be the best tool to confront congestion or the other problems arising from road traffic. We recognise that it should be possible to derive national benchmark profiles for congestion and traffic, but, having been developed in this bottom-up way, they must always be seen as indicative, and not prescriptive. Nevertheless, recognition by Government of such a bottom-up benchmark would demonstrate its commitment to pushing forward the integrated transport agenda, whilst allowing sensible disaggregation to steer its actual implementation.

18. There remains in any case much work to be done over the coming year in developing these profiles. At present we only have an approximate idea of the shape each would take. For example, starting with the congestion profiles, DETR / WSA analysis suggests that, after some years of deterioration, we will be able to bring congestion down below current levels by 2010. In the longer term new land use planning policies will help to stabilise congestion at around the 1996 level thereafter. More importantly, perhaps, on this scenario most people living in urban areas will see falling congestion levels by 2010.

19. We cannot expect to have as much impact on traffic levels, but we should not shy away from using benchmark profiles here as well. On traffic, the best that might be possible nationally is for the growth rate at some future year to be brought down to zero. This would require intensive application of the White Paper, and continued great effort thereafter to maintain this future stabilisation. In London and the other

⁷ These scenarios are themselves groupings for the purposes of the model of the range of available tools, and the matrix could be expanded further to identify more clearly the impacts of individual measures.

conurbations, however, the analysis tells us it would be possible to bring absolute traffic volume down to below current, or even 1996, levels. Over time it should be possible to reduce traffic in the areas where most people live; we recommend that the Government should work in this direction.

20. Highlighting the profiles for traffic levels in the different areas would also help to acknowledge that not all the adverse impacts of traffic can be picked up through the analysis of its component parts. The importance of severance would otherwise be overlooked: it is not just an urban phenomenon, but is also significant on rural roads where traffic levels are growing most rapidly. Focussing on traffic levels as well as its impacts may be the only way at present of drawing attention to the problems on country lanes whose nature is being transformed through above average traffic growth.
21. As noted, the matrix of benchmark profiles will assess options of varying intensity. CfIT will not at this stage be endorsing any particular scenario, and it will first be essential to obtain maximum buy-in from local authorities, transport operators and the business community. Government's aim must be to generate a consensus in each area as to which benchmark profiles should be the guide. CfIT's role centres on the implementation of the White Paper agenda, and so we have a preference at this stage of the analysis for the more radical options, and advocate the pursuit of the 'maximum realistic implementation'. Pending the economic welfare analysis, this may well be closest to the intensive scenario that DETR / WSA calculated led to 21% traffic growth. Given the increasing likelihood that the costs would by then outweigh the benefits, we doubt CfIT would be able to endorse any action involving even greater intensity.
22. As well as working up the various benchmark profiles in the light of the analysis, DETR should also now turn to assess the fuller implications of the ending of the Fuel Duty Escalator and the very welcome prospect of any future real increases in duty being ringfenced for investment in transport. Making two important assumptions – that any funds thus raised are additional to current levels of public expenditure in transport, and that the ring-fencing does not just apply in the year of the increase – this breakthrough has the potential to ensure that the intensive policy options are fully funded and that additional options could be considered. As an initial observation, CfIT notes that the long

planning lead-times for bringing extra transport infrastructure, particularly in roads, on stream suggest the impact of such investment, might not be fully felt until after 2010. The DETR / WS Atkins scenarios also suggest that large-scale improvements in public transport infrastructure hold back traffic growth by only 1 or 2 percentage points.

Conclusions

1. Whilst much work remains to be done, CfIT is highlighting its initial findings to ensure the scale of the challenge on traffic levels is recognised, and to inform and intensify the debate.
2. The issue is increasingly urgent: CfIT welcomes the fact that legislation to bring in the key policy tools is now being introduced, but the momentum must not now be lost. The UK otherwise faces unacceptable consequences, in traffic and particularly congestion levels.
3. By 2010, it should be possible to bring the total amount of vehicle time lost to congestion back down to 1996 levels nationally, and to achieve further reductions in the main urban areas. The underlying traffic levels will be more difficult to influence, given the link with economic growth, but it should be possible to seriously weaken that link and approach zero growth by 2010. Debate with the various stakeholders needs to establish what might be achievable beyond that point.
4. For both congestion and traffic this entails maximum realistic implementation of the White Paper, based on thorough, comprehensive and transparent analysis of the economic welfare costs and benefits of alternative policy packages. This will clearly not be easy. But CfIT believes the alternative, base case, option will be even more painful, to business and to the country at large.
5. Implementation cannot be a single, centrally-led programme, and so a top-down national target for road traffic will not be the most effective tool, given its limitations. Instead, those tasked with implementation at the local level should be guided by benchmark profiles for congestion and traffic levels, acting as yardsticks for the progress that could be made under the various options for implementation.
6. Government should prepare a matrix of these benchmark profiles and seek to obtain maximum buy-in from local authorities, transport operators and the business community.. The process could usefully be driven further forward if, in addition, Government were to recognise national benchmarks derived from these local profiles.

ANNEX A**THE POTENTIAL IMPACT OF WHITE PAPER POLICIES ON ROAD TRAFFIC GROWTH, CONGESTION AND POLLUTION****Summary**

1. DETR, drawing on the work by WS Atkins, has made preliminary estimates of the possible effects on traffic levels, congestion and emissions by 2010 if the transport policies outlined in 'A New Deal for Transport' are implemented at varying levels of intensity. These estimates are approximate, and do not take fully into account a number of important longer term impacts (notably land use changes, and patterns of production and distribution), whose effects will be gradually increasing during and after this period. They also do not take into account some potential effects, such as telecommunications, possible changes in attitudes among the population, and take a cautious view of the potential for self-reinforcing interactions among different policies, for which evidence is not yet clear. The estimates are based on the application of generic policy packages, which differ between area types (eg large and small urban areas) but not between settlements of the same type. This suggests that greater impacts than those identified here would be possible in some areas where there was a strong commitment to intensive action.

2. In 1997, forecasts were made that road traffic in England would grow by 28% from 1996 to 2011. Without the White Paper policies, new calculations suggest revising that growth upwards, to 35%, and by 2010. On past experience, rural and suburban areas have shown very much greater growth than the average: the new forecasts suggest that these areas may still show somewhat greater growth in the future, but at a lower level. This assessment is consistent with successful implementation of the Government's current policies on new housing development (which concentrate development in urban areas); and without which traffic growth would be higher overall, and particularly so in rural and suburban areas.

3. Application of the White Paper policies will have a significant effect on traffic growth - depending on how quickly, and how intensively, they are implemented. Under cautious assumptions (based on provisional Local Transport Plans), it would be possible to reduce that 35% to around

25%-30% growth. However, if larger towns and cities choose to implement road user charging as an intensive demand management measure (with smaller towns implementing lower charges), together with substantial public transport improvements, significant reallocation of highway capacity (for pedestrian areas, priority lanes, etc), and substantial growth of rail freight and coastal shipping, the effects by 2010 would be to reduce the overall traffic growth to 21%. The growth would take place mostly in the currently less congested and rural areas. Traffic levels in the inner areas of conurbations would stay approximately stable, and there would be more manageable single-figure growth in the larger towns. Traffic reductions would be achieved in London.

4. Without the White Paper policies, congestion levels are expected to get significantly worse by 2010 - on one measure, total delay costs would rise by 65%. With intensive implementation of White Paper policies it would be possible by 2010 to avoid this overall increase entirely, and obtain absolute reductions in congestion in larger urban areas (approaching 40% down in London). In contrast congestion on inter-urban motorways would continue to grow significantly.

5. Assuming that the European car manufacturers' 'voluntary agreement' on engine efficiency is fully effective, there should be a reduction in transport related pollution in any case (offset, in part, by the extra traffic that would result from improved fuel consumption rates). The effects of the White Paper policies would be to achieve a greater reduction in 2010 emissions - up to 8% reduction in carbon dioxide overall, 75% in nitrogen oxides, and 72% in exhaust particles (PM₁₀).

6. The analysis suggests that particular attention should be paid to the longer term build up of effects which are at present only partially included, and to the policy framework in the rural areas, the 2000 or so villages, and 200 small-medium size towns, which, in the calculations, are assumed not to have serious enough traffic problems to merit significant traffic-reducing policies.

7. A full account of the analysis will be made available by DETR early in the new year.

Notes on the analysis:

a) CfIT has based its advice on the preliminary results of analysis of the potential impact of Integrated Transport White Paper (ITWP) and related transport policies undertaken to inform the Government's first report under the Road Traffic Reduction (National Targets) Act 1998. The Department's National Road Traffic Forecasting (NRTF) models have been used to derive the base (pre-ITWP) forecasts and to provide a framework for bringing together the results of an external study by WS Atkins⁸ funded by The Commission for Integrated Transport (CfIT). The Atkins study provides the bulk of the policy impacts addressed in this report; the exceptions being national measures, such as the fuel duty escalator and targeted inter-urban road user charges, which have been estimated by DETR officials using the NRTF framework. This work has been overseen by a steering group of DETR officials, Professor Phil Goodwin (technical adviser to CfIT for its Targets and Instruments Working Group), and a representative from the Shadow Strategic Rail Authority.

b) The policy scenarios addressed are illustrative, and are intended to show a range of possible outcomes from implementation of the various policy set out in the ITWP. They do not necessarily represent the policy of any organisation, whether public or private sector, which would be involved in the delivery of the measures described in the scenarios.

c) All the analysis in this report relates solely to traffic growth and policy impacts in England⁹.

d) The main focus for the report is traffic growth to 2010; the forecasting methods used do not track the year-by-year build up of effects of a policy intervention, but seek to describe the outcome after all adjustments have settled down. Therefore, when figures are given for '2010', the assumption is that measures have been implemented sufficiently well in advance to allow these adjustments to take place, which, for many effects, can take up to five years. However, there are some significantly longer term effects including, for example, impacts of changes in land-use: planning permission can remain extant for 5 years or more (and indefinitely if implementation has begun), and cumulative changes in land use can bring about a greater impact over time. Similarly, changes which impact on people's decisions where to live or work can only have an effect at the speed at which such changes are made, and some existing vehicles will still be in use in twenty years. Only a proportion of these impacts will have worked through by 2010, and would tend to have a cumulative effect until the 2020s.

⁸ Assessing the Effect of Transport White Paper Policies on National Road Traffic
⁹ Responsibility for producing reports under the 1998 Act for Scotland, Wales and N. Ireland rests with the devolved administrations