



Campaign to Protect
Rural England

Report Summary
for CPRE and the Countryside Agency

Beyond Transport Infrastructure

Lessons for the future from recent road projects



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In addition, we would like to thank the following individuals:

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Foreword

Using your past mistakes as part of a learning experience is an important lesson for life. And yet, frequently the desire to look forward and tackle the next challenge means that little time is spent looking back to consider whether what's been achieved has actually helped. The place of road building in transport policy is often controversial. In-depth appraisal studies and heated debates accompany most proposals for new or widened road schemes. But do roads deliver what it is said they will 'on the tin'? It is a question that we must answer if transport policy is going to build a broad consensus.

If you are responsible for managing transport networks or tackling congestion it is important to understand whether new road building will help or hinder your aims. If your interest lies in protecting the countryside or wider environment you'll want to know the effects of increasing road capacity. Those responsible for managing public expenditure will be keen to find out if money going into (increasingly expensive) road building is actually delivering results. And elected representatives at all levels need to be confident that a road scheme will genuinely improve conditions, before they can even begin to consider whether the environmental damage it may cause is justified. This report looks at the evidence, selecting three case studies: the Polegate Bypass (East Sussex), Newbury Bypass (Berkshire) and the M65 Blackburn Southern Bypass (Lancashire). In addition, the research team examined ten of the 12 existing One-Year After studies undertaken by the Highways Agency.

The research shows that the evaluation process needs to be improved – and our report contains specific proposals for this. The profile of the post-opening evaluation studies should be changed dramatically, making them available to all and ultimately reaching Ministers' desks. But there are

important implications for future transport policy too. Greater use of evaluation studies should be made before guidance is issued and finance provided for new road building. We also need a better understanding of the effects of the Targeted Programme of Improvements in generating traffic and development pressures, and increasing carbon dioxide emissions. And alternative approaches to solving transport problems should be seriously investigated before new roads are built. Local authorities' approaches to road building should also be better informed by evaluation studies.

The consultants conclude that 'far from learning from our mistakes, we are continuing to repeat them'. The combined cost to the countryside, to the public purse and to public expectations means that this situation needs to change urgently. This report makes a forceful case for improving the evaluation process and ensuring future transport policy and practice benefits from a sound evidence base.



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Introduction

Do new roads deliver the congestion relief and other benefits that their proponents often promise? Or, do they actually make the problem worse; encouraging new journeys and traffic and ‘opening up’ new areas for development? Do they leave an indelible scar on the landscape, or do time and mitigation measures enable roads to be accommodated without long-term impact on the countryside?

These are central issues in the debates surrounding new roads – often argued long and hard by proponents and opponents of schemes in the course of the decision whether to build or not. But to date, little attention has been focused on what happens to road schemes once they have been built. The Highways Agency operates a Post Opening Project Evaluation (POPE) process for road schemes one and five years after construction. However, the production of the resulting reports is often delayed, with the majority of those examined during the course of this study formally unpublished and having little impact on the formation of policy for roads.

CPRE and the Countryside Agency have commissioned research to help throw further light on the issue of evaluation. The research has explored the consequences arising from road schemes in terms of traffic growth, landscape impact and related development pressure. It has also assessed the effectiveness of current post-construction evaluation methods used by the Highways Agency in handling such issues. Its conclusions and recommendations are highly relevant to local highway authorities as well.

This summary is based on a full report with detailed case studies which can be downloaded through the Countryside Agency’s website at www.countryside.gov.uk and through CPRE’s website at www.cpre.org.uk. This summary highlights the key findings from the research.

Background to the Research

The research builds on the detailed work by Oxera *et al* in a report for the Department for Transport (DfT) which looked at: *How should the ex post evaluation of trunk road schemes be enhanced?* (2005). Oxera's work provided a wealth of useful analysis and a number of important recommendations for improving the trunk road evaluation process. Nevertheless, it stopped short in interpreting the implications of its findings for current transport policy. As such, the research aims to build on Oxera's work through its own case study and interview work, and to analyse how such findings should be interpreted to help to improve current transport policy.

The aim of the case studies was twofold: first, to examine whether the actual impact of the road schemes in question – in terms of traffic flows, landscape and development impacts – was as anticipated at the time that planning consent was granted. For example, is the information provided in the Appraisal Summary Table (AST) required at the beginning of the scheme a reasonably accurate estimate of what happens after the road is built? Second, to throw light on how well the post-opening evaluation process is working in practice.

The full report includes a detailed examination of three case study roads:

1. the A27 Polegate Bypass, East Sussex;
2. the A34 Newbury Bypass, Berkshire; and
3. the M65 Blackburn Southern Bypass, Lancashire.

In addition to the detailed case studies, the study team reviewed the POPE One-Year After studies, which were made available for the following schemes:

- > A6 Clapham Bypass;
- > A5 Nesscliffe Bypass;
- > A66 Stainburn and Great Clifton Bypass;
- > A500 Basford, Hough and Shavington Bypass;
- > A1033 Hedon Road;
- > A6 Rushden and Higham Ferrers Bypass;
- > A41 Aston Clinton Bypass;
- > A6 Great Glen Bypass;
- > A43 Silverstone and Syresham Bypasses; and
- > A46 Newark to Lincoln Improvement.

These studies constitute ten of the 12 One-Year After studies that have been produced so far. In the absence of the publication of the Newbury Five-Year After Study, they represent most of the available POPE literature to date.

In analysing the case studies, the research sought to answer the following questions:

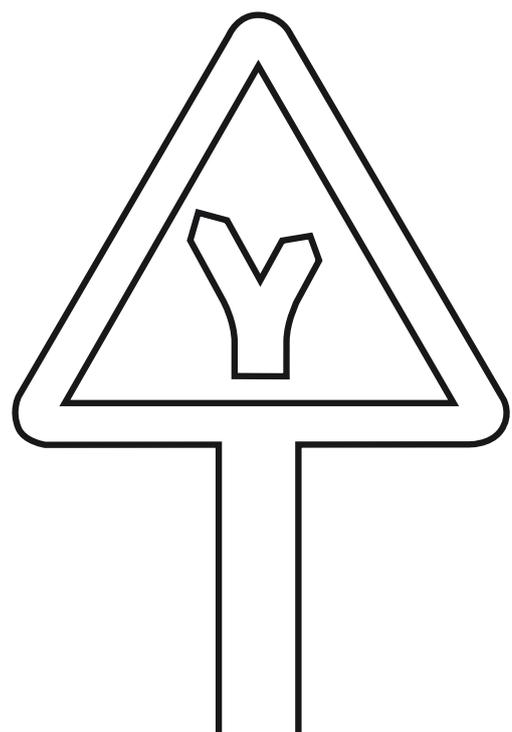
- > How do actual **traffic flows** compare to pre-scheme predictions? How are these flows justified/described in the post-scheme evaluation?

- > **What land use and development changes** have taken place along the line of the road? Were these foreseen (i.e. identified in local plans in advance of scheme development)? Is there evidence that land has been released for development as a result of the road scheme? Has this resulted in other suitable development land being underused (e.g. brownfield land)? Are any new developments giving rise to additional traffic pressure that is in turn leading to demand for further increases in capacity?

- > Were the **landscape** impacts adequately captured by the appraisal processes? Have any mitigation measures (i.e. landscaping, tree planting) succeeded in reducing the landscape impact over time? Have unforeseen landscape issues arisen (e.g. damage to local landscape character, noise intrusion)?

- > What were the original grounds on which **the scheme was justified**? (e.g. road safety, economic regeneration, reducing congestion, reducing community severance, etc). To what extent have the stated benefits that justified the original scheme been achieved?

- > Does the **post-scheme evaluation** go through each of the original grounds for building the road and assess whether the forecast benefits have been achieved? Do the conclusions appear to be robust? What aspects of the schemes' impacts have not been adequately captured by POPE?



Key Findings

In terms of the three main areas of focus for the research – traffic flows, landscape impact, and development pressures – the following conclusions were drawn.

Traffic flows

The case studies and wider POPE review demonstrated that traffic growth on the new routes in question was higher than forecast, sometimes quite dramatically so. For example, in all three case studies the current traffic flows are near or already in excess of what was predicted for 2010.

In towns with bypasses, such as Newbury and Polegate, the new roads did significantly reduce the town centre traffic levels. However, these reductions are not as great as originally forecast and there has subsequently been re-growth in traffic levels on the bypassed roads. The net effect in combination with the new road is generally a considerable overall increase in traffic.

It was not possible to say what proportion of the above-forecast traffic growth in these examples was due to vehicles changing route, and what proportion was genuinely new traffic – for example as a result of new car-dependent development adjacent to the road scheme, or because of modal shift, or because time savings led to journeys being made more often. However, it is crucial for us to understand the extent of induced traffic, and to work out why the Highways Agency predictions appear seriously to underestimate actual flows.

While the Highways Agency says (rightly) that it does not hide information about above-forecast traffic growth, neither do the POPE studies effectively examine it. If new roads are systematically resulting

in induced traffic, then this is an issue of wider relevance to roads policy. At present, however, these policy debates are not properly informed of the significance of this issue and the illusion remains that increased road capacity will somehow tackle the problems of congestion.

Table 1: Traffic flows on the Polegate Bypass

Year	June 2002	April 2005
Average Annual Weekday Traffic (AAWT) 2-way	23,500	30,157
% Change since opening	+28%	

Table 2: Traffic flows on the Newbury Bypass¹

	Highways Agency forecast for 2010 (AADT)	Actual traffic in 2004 (AADT)
Newbury Bypass	30,000-36,000	43,800

Table 3: Traffic flows on the M65²

	Highways Agency forecast for 2010 (AADT)	Actual traffic in 2004 (AADT)
M65	41,000-51,000	52,452

Landscape and noise

All the detailed case studies include elements which are damaging to the landscape and represent a permanent deterioration in its quality: including the impact of the A34 on the North Wessex Downs Area of Outstanding Natural Beauty; the large and highly visible A27/A22 Cophall Roundabout; and the domination of the Stanworth Valley by the M65 viaduct, made even worse by fly-tipping of rubbish off the bridge.

Development generated by the road may have as strong a visual impact on the landscape as the road itself (e.g. Blackburn industrial parks), but this impact is not taken into account in the appraisal of the road. Landscape issues are not considered at all in the POPE One-Year After studies, though they should be considered as part of the Five-Year After studies. Nevertheless, even without such evaluations, it is clear that road schemes – such as those considered in this report – can have a major, long-term impact on the landscape. Landscaping, design and tree planting can help mitigate negative impacts in some circumstances, but not in all. A questionable feature of the present appraisal process is that it scores a road scheme more highly if it is routed through attractive countryside and thereby provides a pleasant ‘view from the road’. The current edition of the *Design Manual for Roads and Bridges* also refers to ‘disbenefit which may arise where a road passes through heavily industrialised or other visually unattractive areas’. This appraisal methodology provides an unacceptable incentive to route schemes through open countryside.

Noise impacts are generally not considered beyond a narrow zone close to the road. For example, traffic on the M65 near Blackburn is audible as a continuous noise from the surrounding high moorlands some miles distant. The same is true of background noise in the Kennet Valley from the Newbury Bypass. In this instance, HGV traffic has grown sharply since construction of the scheme, with considerable noise impact across a broad zone as a result of the high speeds achieved on the bypass. The wider noise impacts are not considered in the appraisal or the evaluation process, yet noise has a major impact on the character of the countryside.

Further, the cumulative impacts of noise, road lighting associated with schemes, and visual intrusion of ‘man-made’ infrastructure can combine to reduce the remoteness and wildness of a landscape and its tranquillity. These complex and interacting factors are generally overlooked in the appraisal and evaluation processes.

M65, Stanworth Valley Viaduct – seen from valley floor
Photo: Transport for Quality of Life



Land use and development

In all the case studies new development pressures have been associated with the road construction, though these issues are seldom considered at the appraisal or evaluation stage. Green Belt land has been de-designated for development following road construction (e.g. M65 Blackburn Southern Bypass) and other sites not previously considered suitable for housing on environmental grounds have been released following road improvements (e.g. at Polegate).

Development is often used as a justification for new road building (i.e. the new road will 'serve' the development of 400 new homes) and this is scored positively in terms of 'integration' (between land use and transport) in the AST and the POPE Summary Table. However, the road itself is seldom considered a factor in stimulating new development. As a result, traffic pressures arising from new development are generally considered to be an 'external factor' affecting the road – even though the road may have been built partly to serve development in the first place (e.g. M65 and A27).

Blackburn provides a particularly worrying example, because the out-of-town industrial parks that were part of the justification for the road have both filled up the motorway itself and generated congestion hotspots on roads the M65 was predicted to relieve. Now a further employment site, this time a strategic regional site, Whitebirk, is proposed in the draft North West Regional Spatial Strategy. The Blackburn with Darwen Borough Council's second Local Transport Plan flags up the need for widening the M65 in order to service this and other sites. Only now is the council considering how it can provide non-car-based travel options to these out-of-town sites, which lie far from the nodes of its existing public transport infrastructure.

The wider experience of road building

The current POPE process does not re-examine schemes against their original objectives. If it were to do so, this research indicates that in many cases discrepancies between planned benefits and those actually delivered would become evident. In the absence of such analysis, there is continuing optimism that new roads will tackle a host of transport problems and, in most of the case studies, the pressure for further road building remains.

For example, at Polegate, the Wealden Local Plan³ continues to state the need for road improvements to the west of Polegate along the A27 to serve planned development, despite the Secretary of State for Transport having called, in 2003, for more environmentally sensitive solutions to be found. Too often the construction of a road scheme is seen as providing 'one piece in the jigsaw', with the assumption

Junction 4 on the M65
Photo: Transport for Quality of Life



that the other pieces will follow. This emphasis shapes the local approach to tackling traffic and providing realistic alternative solutions to car transport. In addition, it shapes the local land use plans, which then become 'dependent' on the delivery of further road infrastructure.

At the same time, the inertia in the appraisal and decision-making processes for new roads appears incapable of stopping the momentum of a scheme once it has been in the roads programme for a number of years. Despite the introduction of a New Approach to Appraisal and reformed methods of considering induced traffic, routes do not appear to be looked at completely afresh in the appraisal process. Rather, new arguments are found to justify the same schemes.

For example, the A27 Polegate Bypass was originally given planning consent in 1993 on the basis that it provided a strategic trunk road link along the south coast and that it would help relieve town centre traffic. However, the road was not taken forward until 2002, at which point the strategic trunk road benefits were no longer justified due to the removal of other schemes from the roads programme. When the AST for the A27 Polegate Bypass was finally presented to Ministers in 2002, part of the justification for the scheme had changed so that now the Hastings Regeneration Area was said to be dependent on the scheme.

Table 4, on the following page, summarises the detailed case studies.

Table 4: Case study summary

	<i>A27 Polegate Bypass</i>	<i>A34 Newbury Bypass</i>	<i>M65 Blackburn Southern Bypass</i>
<i>Date of opening</i>	<i>2002</i>	<i>1998</i>	<i>1997</i>
<i>Length</i>	<i>2.8 km</i>	<i>13.5 km</i>	<i>21 km</i>
<i>Nature of scheme</i>	<i>Strategic trunk road improvement; Bypass</i>	<i>Strategic trunk road improvement; Bypass</i>	<i>Strategic trunk road improvement; Bypass</i>
<i>Main objections at time of inquiry</i>	<i>Landscape damage by junctions/roundabouts</i> <i>Loss of land to development</i>	<i>Damage to landscape, ecology and archaeology</i> <i>Loss of land to development</i>	<i>Damage to landscape and ecology</i>
<i>Main case study findings</i>	<i>76% total traffic increase in the Polegate corridor one year after opening – of which up to 27% may be generated traffic</i> <i>Casualties across the area increased</i> <i>Major development planned in wake of bypass</i> <i>Cophall Roundabout remains intrusive in the landscape</i>	<i>A34 traffic growth far above both predictions and national average</i> <i>Peak-time congestion in town back to original levels</i> <i>Traffic relief to old road is being eroded by development-generated traffic</i> <i>Development towards bypass so far less than feared, but growing pressure for more</i> <i>Landscape impacts as bad as predicted</i> <i>Noise impacts worse and more widespread than predicted</i>	<i>M65 traffic in excess of predictions, leading to pressure for road widening</i> <i>Traffic generation by developments omitted from appraisal process</i> <i>Landscape impacts of developments omitted from appraisal process</i> <i>Noise impacts extend much wider than the appraisal</i> <i>Destruction of rural landscape at Stanworth Valley</i>

Recommendations

While evaluation may be recognised as a key process in public policy, the post-construction evaluation of road schemes currently has little priority or impact at national level. The DfT acknowledges that evaluation attracts little attention within the department, although this may change for the better in future once the national programme board for POPE is established in the light of Oxera’s recommendations.

In view of the substantial investment planned by national Government in the future expansion of the road network, it is crucial that more attention is given now to learning from the evaluation process and to understanding its implications for appraisal and decision making. These interactions between evaluation, appraisal and policy making are illustrated in Figure 1, below.

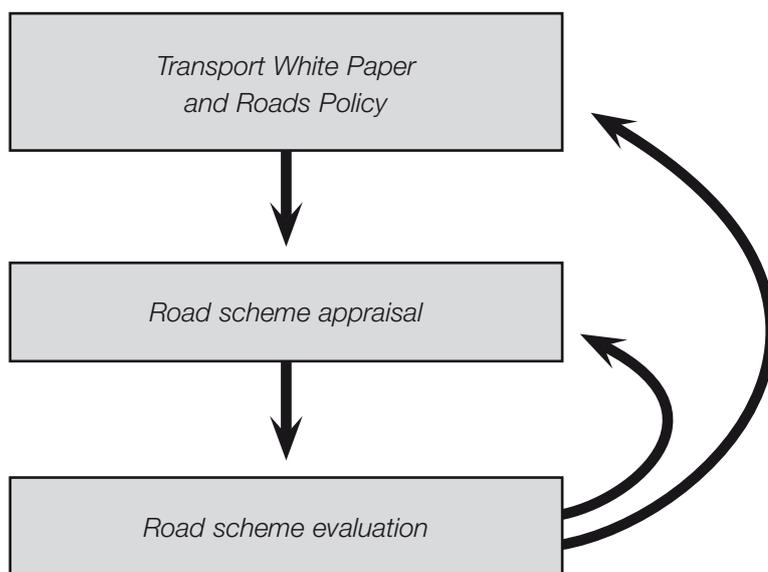
In light of this research we make the following recommendations for national roads policy and the future evaluation of road schemes:

- > The appraisal process should be improved to include a more detailed assessment of accessibility and integration impacts, and the likely CO₂ impacts of a scheme;
- > Greater weight should be given to landscape and environmental impacts in the decision-making process for road schemes. This should help balance the current emphasis placed on the theoretical benefits derived from savings to drivers’ time and provide a fuller picture of the likely impacts;

At national level

- > The Government should accord a higher importance to the outcomes of road evaluations. This requires increased resources being dedicated to the process, with a commitment to ensuring that the evaluation process becomes a learning process, with clear feedback into policy making, as opposed to simply ‘box ticking’;
- > DfT should commission a strategic study of the traffic generation resulting from all road schemes completed in the last ten years. This should review ‘before’ and ‘after’ traffic levels, and should be sufficiently detailed to enable an evaluation of the additional CO₂ generated as a result of the roads programme;

Figure 1: The potential impact of evaluation on policy



- > There should be a presumption against schemes that are likely to stimulate unsustainable, car-dependent development patterns and increased car use; and
- > More attention should be paid to the development of alternative solutions in areas where traffic congestion is a problem. The appraisal process should be changed to require that road scheme promoters show that they have considered whether a smart choice transport programme, coupled with small-scale capital investment, might obviate the need for the road scheme altogether.

At regional and local levels

- > Regional planning bodies and local authorities have an important role to play in managing future built development and road space in the wake of new road construction. There is a need for informed spatial planning decisions that avoid inappropriate infill development, and work with road schemes to provide 'cleaner, safer, greener' places for people to live and work, in line with Government policy; and
- > Local authorities should strive to manage the de-trunked network to resist new traffic generation and to ensure appropriate reallocation of road space in favour of journeys by public transport or to encourage walking and cycling. Many authorities are seeking to provide better facilities for these modes, and are creating a wide range of good practice to learn from.

For the Post Opening Project Evaluation Process

In proposing that the POPE process be expanded to consider a range of issues in greater detail, we recognise the resource implications of this extra work. It is therefore recommended that the ongoing POPE process is maintained for all schemes, with more detailed studies being carried out on a substantial proportion of new projects.

In all cases, it is important that reports are written in plain English, published on time and made widely available. In addition, more attention should be given to ensuring that historic information on road schemes – from initial appraisal and inquiry documents through to evaluations – is recorded and kept in an accessible form for future reference.

In taking forward these more detailed studies, the following issues should be addressed:

- > Improving the analysis of induced traffic in One-Year After and Five-Year After reports. Comment should be made in these reports on whether actual traffic levels experienced are higher than predicted, and what the causes of this are;
- > Including analysis of the effects of the road construction and traffic on CO₂ emissions. At present, One-Year After reports do not seem to consider the issue at all. We also suggest that there is a need for a cumulative assessment to be made of how much CO₂ is being generated by the entire trunk roads programme, based on annual 'after' data of the type collected through

the POPE work. This would build on the information on transport-related emissions currently contained in the Government's updated Climate Change Strategy;

- > Comprehensive consideration of the effect of road schemes on integration and land use. This should take account of the impacts of road construction on a range of issues affecting integration (e.g. community severance, physical connections between different types of transport; impacts on other policy areas, as well as land use/transport interaction). In terms of evaluating the impacts on land use and development, a much more sophisticated approach is required which recognises the two-way interaction between the provision of road infrastructure and new development;
- > Improved assessment of the impact of road schemes on the landscape and tranquillity. This should move beyond considering whether impacts were 'as expected', to draw lessons on how such impacts can be reduced in future. The experience of the cumulative impacts from road schemes in terms of increased noise, landscape damage, associated development and road lighting combine to have a serious detrimental impact on the countryside. Such impacts are not easily quantified in monetary terms, but nevertheless must be more effectively accommodated in evaluations in future;
- > Consideration of the actual regional and local economic effects of road schemes – especially in the Five-Year

After studies – as an alternative to the current emphasis on the theoretical economic benefits arising from schemes;

- > Better evaluation of safety. This should include a breakdown of 'before' and 'after' casualties by severity (fatality, serious injury, slight injury). The evaluation should also include a breakdown of 'before' and 'after' casualties by: location; type of road user (pedestrian, cyclist, driver, etc); and causation factors. This evaluation is particularly important for the Five-Year After report, by which time sufficient data should be available to draw meaningful conclusions; and
- > More in-depth treatment of accessibility, which is largely superficial at present and takes reduced in-town traffic levels as a proxy for improved accessibility.

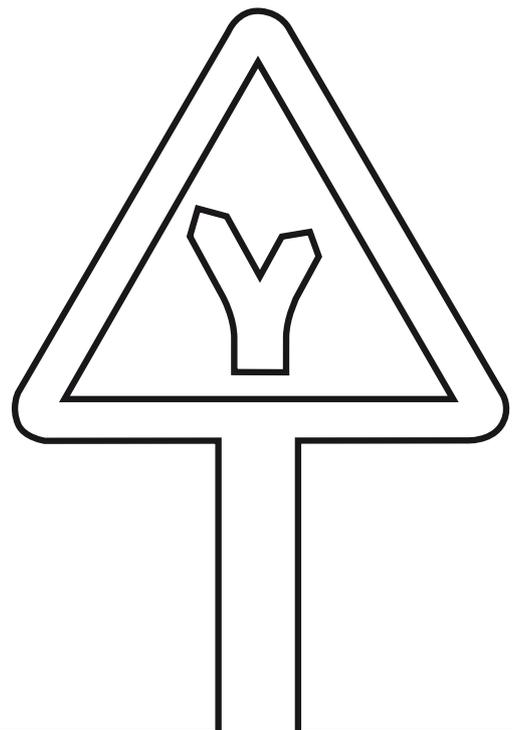
There are important lessons to be learnt from the evaluation of road schemes. The research findings set out here in summary have helped highlight some of them. It is crucial in future that national roads policy is better informed by what has actually happened as a result of the schemes that have been built.

End Notes

¹All figures are AADT, two-way Average Annual Daily Traffic. Forecasts are from *The Newbury Bypass Study Report, July 1995*. The relevant prediction is 30,000 because it uses the low growth national road traffic forecast of 1989, which most closely tallies with the subsequent actual national traffic growth

²All figures are AADT, two-way Average Annual Daily Traffic. Forecast is from *Inspector's Report of public inquiry 1990*. The relevant prediction is 41,000 because it uses the low growth national road traffic forecast of 1989, which most closely tallies with the subsequent actual national traffic growth

³Wealden District Council, *Wealden Local Plan Review: Revised Draft, November 2004, Para 17.16*





Campaign to Protect
Rural England

The Countryside Agency's Landscape, Access and Recreation Division aims to help everyone to respect, protect and enjoy the countryside. Our objectives are to:

- > conserve and protect our natural landscapes and all their characteristics;
- > encourage awareness of, access to and enjoyment of the countryside and green spaces;
- > achieve the sustainable management and use of the countryside.

Our mission is to ensure that an increasingly attractive and sustainable countryside is well understood, highly valued and widely enjoyed. The work of the landscape, access and recreation division of the Countryside Agency is concerned with protecting our landscapes for present and future generations whilst also encouraging respect and enjoyment of our beautiful countryside.

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The Campaign to Protect Rural England exists to promote the beauty, tranquillity and diversity of rural England by encouraging the sustainable use of land and other natural resources in town and country. We promote positive solutions for the long-term future of the countryside to ensure change values the natural and built environment. Our Patron is Her Majesty The Queen. Our President is Sir Max Hastings.

Much of what CPRE has achieved has only been possible due to financial support from people who care about our countryside. To find out how to support CPRE, please ring supporter services on 020 7981 2870, email supporterservices@cpre.org.uk or visit us online: www.cpre.org.uk/support-us.

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