



RESPONSE TO THE TO THE A14 CHALLENGE

The RAC Foundation welcomes the opportunity to offer innovative ideas to improve travelling conditions for motor vehicles using the A14 and to comment on the Department for Transport's proposals.

The RAC Foundation is a charity which explores the economic, mobility, safety and environmental issues relating to roads and responsible road users. Independent and authoritative research, carried out for the public benefit, is central to the Foundation's activities.

INTRODUCTION

1. The RAC Foundation welcomes the government's recognition of the urgency of addressing the problems on the A14 as part of the "growth agenda". It also welcomes the DfT's initiative in setting up the A14 Challenge to develop a longer term plan for the A14, alongside the £20m commitment to short term measures.

2. In this note we set out firstly our current position on what we think should be done, and why; and in appendices note some additional sources of funding which could mitigate the requirement for central government expenditure.

THE FOUNDATION'S POSITION

3. In summary, our position is that the original Fen Ditton-Ellington scheme, abandoned in the autumn 2010 as part of the CSR, is the best starting point for considering the development of a longer term plan, rather than starting again from

scratch. Further delay is damaging and at the least government should consider an immediate start on the Western (Huntingdon) segment as a matter of urgency.

4. The reasons for this are:

- It is a scheme carefully designed over a number of years to address the wide range of disparate problems over these section of the strategic road network – the environmental intrusion and deteriorating condition of the Huntingdon viaduct; serious capacity and congestion issues; the conflict of through and local traffic; the congestion at specific junctions; the safety and accident risks with consequent disruption due to the combination of high traffic flows and high proportion of heavy goods vehicles and inadequate road design.
- We understand that there is scope for reducing the cost of the original scheme by a) value engineering; b) downscoping some of the design features (especially the collector/distributor roads); more effective procurement and project management exploiting the current market conditions.
- There is scope for phasing the construction in distinct, individually worthwhile, stages (with relatively low wasted expenditure). Together with the prospective cost reduction, this will address the principal reason for its abandonment – which was affordability within a particular time period rather than its business case and intrinsic value for money.
- The highly desired additional housing development planned for north Cambridge (particularly Northstowe New Town) has been blocked because of insufficient local roads capacity: improvements based on the original Ellington-Fen Ditton scheme would provide the capacity to allow these developments to proceed – and the consequent opportunity to raise some developer contribution towards the A14 scheme cost, for example through Community Infrastructure Levy, that would otherwise not be available.

5. It has been argued that the Cambridge Guided Busway now in operation will reduce the commuting traffic using the road network to the extent that improving the road capacity and traffic management on the A14 is not needed-the DfT's study, "A14 Study Output 1" notes that the Busway could play a worthwhile role relieving some pressure on the A14. Equally it has been argued that the improvements in the

capacity and gauge of the Felixstowe-Nuneaton rail route will lead to all the growth in container traffic from the Haven Ports to the Midlands and North being carried by rail – again undermining the need and case for improvements on the A14. These arguments need to be tested but we anticipate that analysis of the data and the forecasts will show that both these improvements will provide welcome though modest relief, and they will have only a marginal effect on the need for capacity on the A14 and on the business case for the investment. Indeed, the DfT's "A14 Study Output 1" says that the increase in rail capacity would have only a small impact on HGV volumes on the A14 between Huntingdon and Cambridge.

6. Improving the A14 between Ellington and Fen Ditton is critically important for the nation as well as the locality. It contributes many benefits.

- It is the most important example of an inadequate route serving the UK's highest volume container port complex. This is one of England's major "gateways" of the kind identified by Sir Rod Eddington as vital for Britain's productivity and growth.
- It serves local traffic in an area relatively poorly provided with transport infrastructure because the sub-region has experienced considerable population growth and high value industrial growth with little consideration of the transport infrastructure needed to support it.
- Further population growth is expected, but plans for substantial new housing development are likely to be blocked without the new capacity that an improved A14 would provide.
- As a dual 2-lane trunk road (for most of its length) it is not designed to motorway standards (better junction and layby design, provision of hard shoulder, no local frontage and road access). Yet this section experiences traffic flows per lane and proportion of goods vehicles which are among the highest on the entire Strategic Road Network; together these give rise to uncomfortable driving and a high accident rate. The lack of hard shoulders makes it vulnerable to delays: one or more sections along its length is closed on average for one and a quarter hours a day.
- The good economic case for the original proposal is reflected in its estimated benefit:cost ratio of between 2.5 and 3, before any cost efficiencies. The full

scheme and all the alternative configurations set out in the November 2011 Evaluation of Scheme Options¹ fall within this range.

- It offers a resolution of the problem of the deteriorating viaduct in Huntingdon which will generate considerable remedial expenditure if the A14 is not diverted to a new alignment. It would also offer environmental benefits – noise, visual intrusion and air quality – to those living and working in Huntingdon.
- A scheme has been fully designed and is “ready to go”: it was on the point of beginning the public consultation process.

7. We understand that the scheme was withdrawn during the Comprehensive Spending Review of October 2010 not because it is a poor scheme but because it was, at the time, considered to be “unaffordable”. While this is understandable in the context of the economic crisis, the fact that it is a big scheme should lead not to its abandonment if it offers good value for money per £ of the available budget relative to other schemes that are progressed. As with any scheme, there should be a focused consideration of how such a well-designed scheme can be made more affordable and even better value for public money – not only by judicious cost reduction and the phasing of expenditure but by examining the possible contribution of other sources of funding.

8. A year later, in November and December 2011 government announced its Growth Agenda, which recognized in particular the value of investment in “shovel-ready” transport infrastructure – not only to generate employment quickly but also to provide the infrastructure to make transport movements more efficient and drive economic recovery and growth. We believe that a phased, value-engineered and scope-reviewed version of the original A14 scheme would meet the objectives of the government’s growth agenda.

¹ <http://assets.dft.gov.uk/publications/a14-ellington-to-fen-ditton-information-pack/TN42.pdf>

9. We note that the current scheme has been painstakingly developed over the years since the CHUMMS study of 2001. Full consideration has been given to the phasing and management of the construction work. Value engineering can reduce the costs without detriment to the scheme. Some features of the scheme that are particularly costly could be reviewed: possibly reducing the amount of grade separation for local roads, reviewing the complex junction at Girton and reducing the extent of collector-distributor roads on either side of the through route between Fen Drayton and Girton.

10. We strongly urge that consideration be given to phasing the construction of a value engineered, slightly modified version of the original scheme in two parts – probably Ellington-Fen Drayton and Fen Drayton-Fen Ditton.

11. When considering the funding of schemes to create new strategic road capacity in general, it may be helpful to categorise them as follows:

- (1) Schemes where, with relatively minor adjustments to the conditions of use of the neighboring (competing) roads, there is a credible prospect that revenue from charges to users would be sufficient fully to service the capital and operating costs, including a sufficient premium to remunerate private capital for the risks as the markets perceive them.
- (2) Schemes that are like the first category, except that they can only be expected to be commercially viable if they have additional funding support from contributions from local land owners, commercial interests and local taxation.
- (3) Schemes that will require a degree of conventional national or regional funding support, in addition to a useful contribution from revenues from charges to users and from local interests.

12. The question is which of these categories does the A14 fit? If it is the third then the A14 will only be delivered if the Exchequer finds additional funding for it.

13. Appendix 2 below considers tolling prospects and Appendix 3 considers new sources of funding not from users. But first we emphasise in Appendix 1 that this note is about funding, not financing.

CONCLUSION

14. The conclusion in Appendix 2 is that it appears that tolling revenues would be able to make a substantial contribution to the construction costs of the Ellington to Fen Ditton scheme although there would probably remain a requirement for substantial funding from other sources. Appendix 3 identifies a number of potential sources of funding from sources other than charges to users. However in relation to the A14 they all suffer from a couple of difficulties. First they rely on successful coordination between local authorities with jurisdictions smaller than the overall area influenced by the scheme. Whilst this is achievable it remains challenging. Secondly, the amounts of money likely to be yielded are limited and will be subject to strong competition from many alternative local authority schemes.

15. It seems likely, therefore, that the A14 improvement will fall into either category (2) or (3), above. Even if the total of these contributions were considerably less than the cost of the scheme they would make it more likely that the government would be willing to fund the difference from conventional sources. This type of joint funding and risk sharing between national or regional government and a private enterprise is to be found with major road schemes overseas² and it is essentially how HS1 and many other rail schemes have been funded. It is probable that it will also be the model proposed to fund HS2.

16. Considering innovative funding mechanisms—whatever their merits—will take time and cause further delay. It is possible that they will fail to remove the need for some Exchequer contribution. More than twelve months have already elapsed since the scheme was halted in the Spending Review 2010. This particular scheme would meet an urgent national need and meets many of the criteria for a good contribution to the “growth agenda”: the economy needs it and, crucially, it is close to being

² See RAC Foundation and ARUP, *Providing and Funding Strategic Roads*, <http://www.racfoundation.org/research/economics/131735>

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“shovel ready”. The government should consider whether, in this particular instance it would be better to reinstate the scheme (with any easy cost-saving adjustments) on a conventional funding basis whilst developing policies on innovative funding arrangements for use with other schemes in the future.

17. At the least it should consider an immediate start on the Western (Huntingdon) segment as a matter of urgency, if it wishes to take the necessary time to investigate value engineering and innovative funding arrangements for the Eastern segment.

Stephen Glaister, 31 January 2012

Director, RAC Foundation

89—91 Pall Mall

London SW1Y 5HS

Appendix 1. Funding vs financing

1. It is important to distinguish between ‘financing’, by which we mean borrowing cash in the form of debt and equity to pay for construction of projects, and ‘funding’ which, sooner or later, provides the resources to remunerate the debt and equity, A simple example is: in buying a house a mortgage from a bank or building society provides the cash (financing) but the subsequent stream of regular payments by the mortgagee provides the funding of the purchase.

2. Under “shadow tolling” a private provider is paid under a long term Private Finance Initiative contract to provide, maintain and operate a road in return for periodic payments from government. This is associated with Design, Build, Finance and Operate (DBFO) contracts for new and improved roads (and other forms of highway infrastructure). They reduce the public capital outlay of procuring the scheme and the private concessionaire is paid in relation to the traffic carried, availability and the quality of service provided – the concession period usually being of the order of twenty five to thirty years. This transfers some of the cost and performance risk to the concessionaire and allows trade-offs to be made, for example between initial costs and frequency of maintenance, which are sometimes not achieved with conventional procurement. The private contractor has to raise and service the capital needed (which will usually cost more than government borrowing) and make provision for performance and traffic volume uncertainties. When well-conceived and executed these can be more cost effective than conventional procurement; but this is not guaranteed.

3. Such schemes are common for roads in England and in other parts of the world. There have been well-publicised problems with PFI and PPP schemes in information technology, health and transport. Yet in the UK roads sector they have worked well and do seem to have played a useful role, perhaps because roads are technically relatively simple and it is relatively easy to specify the output

requirements in enforceable contracts³. The present government is reviewing the future use of PFI and PPP, but they should be considered for the A14 improvement. However, since they are just one of several available methods of borrowing (financing) and procurement of work, if government continues to take the view that the A14 improvement is “unaffordable” for the general taxpayer these techniques do not solve the problem of where the funding is going to come from.

³ See RAC Foundation and ARUP, *Providing and Funding Strategic Roads*, <http://www.racfoundation.org/research/economics/131735>

Appendix 2. A14 tolling prospects

1. The scheme for improving the A14 between Ellington and Fen Ditton would provide substantial additional, physically distinct highway capacity and is a candidate for direct tolling. The length of about 40kms and average traffic flows in the order of 60 thousand vehicles per day mean that a significant volume of traffic is within scope (circa 800 million vkms/year). If only half of this were subject to tolling the gross annual receipts would be £4m per 1p/vkm.
2. If the Cambridge Northern by pass were excluded the average flow would be about 64 thousand vehicles/day over a shorter segment and the annual total 580 million vkms.
3. The present journey time of about 40 minutes could be reduced to around 22 mins - a saving of 18mins with free flow speeds. A charge of 8p/km would result an end to end charge of £3.20. With time costs alone amounting to around £15/hr. this would be substantially less than the £5.50 value of time saved. This yield of circa £30m/year could fund a substantial part, but by no means all, the capital cost of the scheme. Depending on the technology used the net receipts would be lower than this but could be expected to exceed £20m/year.
4. The tolling system would offer the most advantage to through traffic and especially HGVs but it may well be necessary to include traffic management measures in the scheme to ensure that most heavy and through traffic used the new through link and that local traffic had reasonable non-tolled options.
5. There is an issue about how tolls would be collected for a scheme of this kind. The technology of tolling is developing rapidly and over the period it would take to complete the scheme there is a good prospect that a solution to this problem would be found. We think it is both important and possible to rule out any consideration of large “toll plazas”. (Walker for the RAC Foundation surveys a number of technically

successful schemes currently in operation round the world⁴). Regular and local users could be billed using Tag and APNR technology but remote and infrequent users, of which there would be significant numbers would be more difficult and an arrangement where no or minimal physical 'gates' would be needed. Infrequent users would be less of a problem if there were a number of schemes of this type across the country all using a compatible charging mechanism.

6. It appears that tolling revenues should be able to make a substantial contribution to the construction costs of the Ellington to Fen Ditton scheme although there would remain a requirement for substantial funding from other sources. A tolling scheme should be designed with these requirements in mind:

- it should be attractive to most through and heavy traffic
- local movements should have a non tolled alternative
- it should be capable of installation without substantial modification to the existing layout
- the tolling technology should provide 'frictionless' transactions for the overwhelming majority of movements and, as this route in on the trans-European road network accord with EETS requirements.

⁴ <http://www.racfoundation.org/research/economics/road-pricing-acceptability>

Appendix 3. New sources of funding not from road users

1. Our rough calculations suggest that the A14 improvement scheme may fall into category (2), above. So the question is whether there are additional funds to be had from local interests in addition to the traffic using the road.
2. The inadequate performance of the present A14 implies that if it were to be improved there would be a number of interests that would benefit. It is natural to ask whether there are practical mechanisms under current legislation that would allow the collection of funding contributions.

Section 278 Agreements

3. Agreements for the private-sector funding of works on the strategic road network can be made under section 278 of the Highways Act 1980⁵, as amended by section 23 of the New Roads and Street Works Act 1991⁶. These agreements provide a financial mechanism for ensuring delivery of works identified and determined as necessary for planning permission to be granted for the proposed development. The works to be funded are either in relation to access to/from a trunk road or to mitigate traffic impacts arising from the development. Whilst they can help fund the easing of local problems, they cannot provide a source of major finance for general inter-urban road improvements.

Community Infrastructure Levy

4. This is a charge which local planning authorities in England and Wales can levy on most types of new development in their area. Community Infrastructure Levy (CIL) charges are based on simple formulae which relate the size of the charge to the size and character of the development paying it. The proceeds of the levy can be spent on local and sub-regional infrastructure to support the development of the area.
5. Where spending by the Highways Agency (and Transport Wales) is essential to unlocking development at a local level it could be eligible to receive funding from

⁵ Highways Act 1980 c.66.

⁶ New Roads and Street Works Act 1991 c.22.

CILs - provided this is part of a wider process of infrastructure planning⁷. Quite how much might be provided by CILs is not known, but the principle is that it should be set to cover the cost of consequent infrastructure needs not funded from other sources, suggests that significant sums for inter-urban roads are only likely to flow where there are major new developments in the vicinity of congested trunk roads. There is the difficulty that in two tier areas the authority receiving the funds (the local planning authority) is not the same as the authority which may want to spend them (the local highway authority).

6. We note that in 2011 the Chancellor made a commitment that CIL could be used to help fund the extension of the Northern Line to redevelop the Battersea Power Station site.

Business Rate Supplement

7. Business rates generate about £20bn a year and the Lyons Inquiry into local government finance recommended that the 150 upper tier local authorities should be allowed to levy a Business Rate Supplement (BRS) to spend on projects in their area. The yield from a 1p supplementary rate was estimated to be £400m/year nationally⁸ and service ten year loans of up to £3bn. The Business Rate Supplements Act 2009 makes provision for county councils, unitary district councils and the Greater London Authority to levy a supplement on the National Non-Domestic Rate (or business rate). Authorities will be able to use the proceeds to fund additional investment aimed at promoting the economic development of local areas. The guidance for local authorities includes⁹

“Business Rate Supplement could provide a useful tool in facilitating the investment required to bring forward physical infrastructure projects, such as transport schemes. This accords closely with the Eddington Transport study, which found that a high performing transport system is an important enabler of sustained economic prosperity.”

⁷The Community Infrastructure Levy, para 2.23.

⁸ Place-shaping: a shared ambition for the future of local government, section 8.

⁹ http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/d/business_rate_supplements_localauthority_guidance.pdf

8. Given the upper limit of 2p with small business exemptions the maximum yield would be £600m/year supporting loans of up to £4½bn and much of this would be in the larger urban areas where there are few inter-urban trunk roads.

9. The scale of contribution to inter-urban road schemes is likely to be small. At least half would arise in the main conurbations and for the remainder there would be strong competition from other projects. 30% of the total would be raised in Greater London¹⁰ and the Mayor has already devoted this to funding Crossrail. But if one third on the non metropolitan BRS revenue were available this would amount to £100m a year, which could support loans of £¾bn.

Regional Growth Fund

10. The Regional Growth Fund (RGF) is a £1.4bn fund operating across England from 2011 to 2014. It supports projects and programmes that lever private sector investment creating economic growth and sustainable employment. It aims particularly to help those areas and communities currently dependent on the public sector to make the transition to sustainable private sector-led growth and prosperity¹¹. The awards announced so far indicate that this will not be a source of funding for strategic roads such as the A14.

LEP Transport Funding

11. On 10 January 2012 *Local Transport Today* reported that

The DfT has given the first indications of how much funding Local Enterprise Partnerships could get to prioritise on local major transport schemes when the budget is devolved from April 2015... The funding would cover the six local authority areas in the [South East Local Enterprise] Partnership: East Sussex, Essex, Kent, Medway, Thurrock and Southend. The DfT is to consult shortly on its plans to devolve the major scheme funding to local transport consortia—single LEPs or alliances of neighbouring LEPs—from April 2015, the start of the next Spending Review period.

¹⁰ Business Rates Supplement: A White Paper, table 3.4.

¹¹ <http://www.bis.gov.uk/RGF>

Tax Increment Financing

12. Core Cities describe TIF as follows¹²

The UK TIF model is based on reinvesting a proportion of future business rates from an area back into infrastructure and related development. It applies where the sources of funding available for a scheme to deliver economic growth and renewal cannot cover the cost of infrastructure required by the scheme. Often this will be a regeneration project, and although UK TIF could be used more widely, it will not be suitable for all schemes.

A lead agency – a local authority, private sector partner or some combination – raises money upfront to pay for infrastructure, on the basis that the increased business rate revenues generated by the scheme can be used to repay that initial investment. The upfront funding may be borrowed from public or private sources, or it may be provided by the developer from capital available to it.

European Funds

13. The A14 is part of TEN-T network. The October 2009 Economic Assessment was “cofinanced by EU; TEN-T”.

14. There is a range of funding sources from the European Union. The Structural Funds (European Regional Development and European Social Fund) and Cohesion Fund are the European Union’s main instruments for supporting social and economic restructuring across the EU. They are used to tackle regional disparities and support regional development through actions including developing infrastructure and telecommunications, developing human resources and supporting research and development.

15. These funds have three basic objectives – Regional Convergence (targeted at regions with the lowest economic performance) Regional Competitiveness and Employment (targeted at better performing regions which nevertheless need some

¹² <http://www.corecities.com/what-we-do/publications/rough-guide-tax-increment-financing>

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assistance) and European Territorial Co-operation (targeted at promoting co-operation between regions for mutual economic, environmental and social benefits). The precise deployment varies with the Operational Programme agreed for each qualifying region or regions.

16. The EU makes grants for transport projects through its Trans European Network (Transport) TEN-T programme (see table the table). Between 1983 and 2004 grants for British road projects amounted to €59m –less than €5½m a year on average. This was 1% of the total TEN-T spend over this period. From the location of projects it is clear that the lions' share of funding tends to have been provided for links to international gateways rather than the core network.

EU TEN-T Grants for Road Projects¹³ in Britain 1983 – 2004.

YEAR	PROJECT	EU SUPPORT (€million)
1985	M-25 Section : 'LEATHERHEAD-REIGATE	3.5
1985	M-25 section : M-4/M-40	6.2
1985	Road in SIDCUP	9.0
1986	A-120 : BRAINTREE	3.5
1986	M-20 : MAIDSTONE-ASHFORD	9.0
1987	PEN-Y-CLIP (E22) Route Management	2.1
1987	A-2070: ASHFORD	1.5
1987	A-260: FOLKESTONE - CANTERBURY	1.5
1989	A-20/M-20 : MAIDSTONE-ASHFORD	2.8
1989	A-20/M-20 'Section FOLKESTONE-DOVER	2.0
1992	A-5/A-55: PEN-Y-CLIP tunnel	10.0
1993	A5/A-55: RHUALLT 'HILL	4.0
1993	A-55: ABER	3.0
1995	A75 Stranraer to Gretna	1.3
1998	Harwich International Port - Access and Interchange	0.5
2000	Northern Ireland Transportation Infrastructure	0.5
2001	A120: Stansted Braintree	5.0
2002	A120: Stansted Braintree	2.5
2003	A120: Stansted Braintree	5.0
2004	Loughbrickland, NI-Beech Hill	1.5

Source: List of Actions Supported Under TEN-T 1983-2004.

¹³ This excludes grants for studies.

17. In 2005 a new TEN-T Priority Programme was agreed¹⁴. This estimated the need for investments in TENT-T to be €600bn and identified 30 priority axes requiring improvements costing £252bn by 2020. One of these involves the routes between Felixstowe and Holyhead/Stranraer (and on through Ireland) and it is expected that EU funds could fund up to 5% -6% of the construction costs, although this includes monies from the Structural and Cohesion funds which have tended to benefit peripheral and recent accession states rather than the core of the UK. However, the greater part goes to rail: roads received less than three percent 2007-13¹⁵.

18. On 10 January 2012 the following report appeared:

The European Commission launched today a Call for Proposals under the Trans-European Transport Network (TEN-T) annual programme, making €200 million available to co-finance projects in several specific priority areas. The Annual Call will complement the funding already made available in June 2011 through the multi-annual programme in order to speed up the completion of the TEN-T network and will help prepare the ground for future TEN-T policy developments.

This year's calls focuses on five distinct priorities:

- Priority 1: Promote the development of an integrated and multi-modal transport system (indicative budget: €25 million)
- Priority 2: Promote infrastructure development contributing to mitigation and adaptation to climate change and reducing transport's impact on the environment (indicative budget: €35 million)
- Priority 3: Accelerate/facilitate the implementation of TEN-T projects (indicative budget: €100 million)
- Priority 4: Support Public-Private Partnerships (PPPs) and innovative financial instruments (indicative budget: €15 million)

¹⁴ TEN-T Priority Axes and Projects 2005, page 8.

¹⁵ TEN-T Mid Term Review, 2007-13, p8.

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- Priority 5: Support the long term implementation of the TEN-T network, in particular the development of corridors that enable a coordinated implementation of the network (indicative budget: €25 million)

The TEN-T Executive Agency (TEN-T EA) manages the overall technical and financial implementation of the TEN-T programme, on behalf of the Commission's Directorate-General for Mobility and Transport. This means the Agency is responsible for the management of the calls for proposals as well as the external evaluation of project proposals submitted.

The deadline for submitting proposals is 13 April 2012. Proposals will be evaluated on the basis of their relevance to the TEN-T priorities and policy objectives, their maturity, their impact – in particular socio-economic and environmental – and their quality in terms of completeness, clarity, soundness and coherence.

End