

Introduction, purpose and scope

1. This evidence is submitted jointly by the Royal Town Planning Institute (RTPI) and the Transport Planning Society (TPS).
2. The RTPI is the largest professional institute for planners in Europe, with over 23,000 members who serve in the public service and as advisors in the private sector. It is a charity with the purpose to develop the art and science of town planning for the benefit of the public as a whole. As well as promoting spatial planning, RTPI develops and shapes policy affecting the built environment, works to raise professional standards and supports members through continuous education, training and development.
3. The TPS exists to facilitate, develop and promote best practice in transport planning in the UK and to provide a focus for dialogue between all those engaged in it whatever their background or other professional affiliation. The TPS has approximately 900 individual members and corporate membership of many leading companies in the field.
4. The key messages of this joint submission are:
 - a. that the proper integration of transport and land-use planning systems is the most effective way to ensure that transport benefits the economy; and
 - b. that existing methods for assessing and prioritising proposed schemes are unsatisfactory.
5. The submission responds to all the questions posed in the inquiry terms of reference collectively.

Structure and summary of conclusions

6. The 2006 Eddington Report's strategic economic priorities for transport investment were: growing and congested urban areas and their catchments; the key inter-urban corridors; and the key international gateways. We consider that these priorities remain valid, but note that they depended upon road pricing to secure the economic benefits for the longer term.
7. The current practices used by DfT to decide investment priorities largely rely on estimates of the value of time savings derived from the sophisticated models used to plan transport infrastructure. However, the reasoning connecting such direct transport effects to economic benefits of the kind referred to by Eddington is increasingly disputed, particularly as regards the most important and longer term impacts such as economic agglomeration and urban regeneration.
8. We conclude that current methods are not a reliable means of directing the very limited transport resources now available towards economic purposes, particularly regarding the balance between road and rail, and between large-scale capital schemes and the smaller kinds of scheme often financed by revenue. We suggest other methods of appraisal that could be employed pending longer-term resolution of the more fundamental issues.
9. Transport decisions affect social structures, quality of life, car-dependency and CO₂ output as well as economic productivity. Many of these impacts feed back into economic productivity and are determinants of the longer-term evolution of cities and patterns of settlement and of their longer-term sustainability. The forces involved work at a range of geographical scales (neighbourhood, town, city, subregional and national) and we believe that the forms of local collaboration put in place following abolition of RSSs need to reflect this.

Economic priorities for transport

Eddington's conclusions

10. The terms of reference for this inquiry include the question of whether conditions have materially changed since the Eddington Report and what the priorities should now be in order to deliver growth, both nationally and regionally. It is relevant to recall Eddington's words (from his Foreword).
11. He described the UK's transport networks as "*a crucial enabler of sustained productivity and competitiveness.*" On value for money he said, "*... transport policies offer some remarkable economic returns ...*" He concluded "*Continued economic success is forecast to lead to rising demands ... Given their significance to the economy, my Study shows that the strategic economic priorities for long term transport policy should be growing and congested urban areas and their catchments; the key inter-urban corridors; and the key international gateways.*"
12. These conclusions were all placed in the context that "*... for economic reasons as well as social or environmental, all transport users should meet all their external economic, social or environmental costs: hence my strong backing for congestion-targeted road pricing.*"

Current validity

13. Since he reported in December 2006 there have been major changes with a bearing on Eddington's conclusions:
 - GDP in Britain has not grown as anticipated;
 - the balance of trade has worsened from -£7.0 billion to -£9.6 billion;
 - unemployment has risen from about 5.5% to nearly 8%;
 - public sector debt has increased from c. 37% of GDP in 2006 to over 53%;
 - potential for public investment has been replaced with fiscal retrenchment;
 - rather than introduction within 10 years¹, road pricing has all but disappeared from the public policy agenda.
14. In our view, Eddington's broad conclusions about the importance to the UK economy of transport in conurbations, on inter-urban corridors and to international gateways remain valid. However, changes in the resource context, the removal of road pricing from the policy mix and our increasing understanding of how transport influences the economy all lead to rather different conclusions as to the kinds of transport programmes and policies needed. The need for transport investment to play its part in economic development has if anything increased since 2006, but how it might best do so may well have changed.
15. The Eddington Report itself placed a good deal of reliance on DfT's conventional cost-benefit analysis (CBA) processes to prioritise schemes in the chosen areas (in and around conurbations, inter-urban corridors and gateway access). These are areas where the pressures of growth of road traffic are highest, and where (in conventional DfT appraisal) the highest ratios of benefits to costs therefore tend to attach to roads. Under Eddington's dispensation roads would dominate investment priorities, and road pricing was therefore crucial, not just to raise money but more importantly to 'lock in' the benefits of schemes, so that the additional capacity did not simply generate more traffic.
16. The failure to follow up road pricing, increasing doubts about the validity of DfT's conventional appraisal process and radically constrained resources all point to the need to reconsider Eddington's priorities.

Deficiencies in current economic appraisal

The conventional appraisal process

17. The Standing Advisory Committee on Transport Appraisal (SACTRA) undertook a major inquiry into the connections between transport and the economy, published in 1999². While noting that the scope for transport improvements to deliver economic benefits in advanced economies with mature transport systems may be limited, the SACTRA Report identified the following possible chains of causation linking transport and economic growth:

- i. Better transport links allow rationalisation of locations for production and distribution, thus reducing costs and increasing competitiveness;
 - ii. Access to wider labour market catchments, reducing labour costs and increasing choice;
 - iii. Higher productivity (from both the above), increasing output and market share;
 - iv. Stimulation of inward investment by creating internationally attractive locations;
 - v. Unlocking inaccessible sites for development; and
 - vi. Multiplier effects on all of the above leading to further growth in supply chains and dependent services.
18. The scale of these effects can be estimated, but only with some difficulty and uncertainty: in general such estimates are only used where the *local* incidence of economic benefits is of particular importance (eg in a Regeneration Area – see below). Normally the economic benefit is estimated from the direct transport effects as calculated by the models used in transport network design and planning. The main such benefits are:
- i. Time savings to users of the network (business and leisure) compared with doing nothing;
 - ii. Reductions in vehicle operating costs (VOC) through quicker or smoother journeys);
 - iii. Accident savings (through better sight lines, etc).
19. These benefits form part of a broader appraisal framework which includes other kinds of effect (such as landscape, natural environment, air quality, noise, etc): this is known as ‘the new approach to transport appraisal’ (NATA) even though it is now some 10 years old. However, the majority of impacts that are assigned a monetary value are user time-savings with smaller contributions from modelled VOC and accident savings. Benefit/Cost Ratios (BCRs) are calculated by comparing the value of monetised benefits with scheme costs (both discounted over time). These BCRs are the determining factor in DfT’s investment priorities.
20. DfT has a highly sophisticated system of guidance for the application of these principles. The web-based Transport Appraisal Guidance (WebTAG) currently runs to over 100 detailed ‘Units’, many of them lengthy and complex. Compliance with the Treasury Green Book standards is claimed and in practice this claim appears to be accepted.

Economic impact in conventional appraisal

21. Transport improvements tend not to have lasting effects on the performance of the transport system itself – journey times, congestion, etc. Rather, the benefits are taken in the form of a wider choice by households and businesses of places to live, work, locate and visit. The original transport improvement is thus transformed into a new pattern of settlement, activity and movement, and this in turn drives further physical development. Although this increases transport demand (and so reduces transport benefits), such changes are a path to the economic benefits listed earlier (para 17). The SACTRA report concluded that “.. *in general, the value of direct transport benefits must decline if indirect economic benefits are to grow*”.³
22. The rationale for using the value of initial time-savings as the main measure of economic benefit is that, *in a perfect market*, the ultimate economic benefit will be equal to the initial user benefit, however tortuous the path between. Thus time savings, a by-product of scheme design, seem to offer a quick and convenient means of estimating economic impacts. For most of its existence DfT has focused on reducing congestion (particularly on roads). Because time-savings directly measure reduced congestion, there is an obvious attraction in using the same metric for economic benefit⁴. This simplification has been the foundation of DfT practice for over 40 years⁵ and is the main principle embodied in WebTAG.
23. In recent years there has been an increasing interest in indirect and longer-term economic and social effects arising from *imperfect* markets. The added competitiveness that comes from concentration of activity (agglomeration) is one such effect, and the differential impact of transport on housing prices and choices (social polarisation) is another. SACTRA pointed out that effects of transport change on such processes could be either positive or negative, and might be on a significant scale (though it offered no means of estimating their size). Eddington’s emphasis on agglomeration as an economic force has led to a renewed interest such wider and longer-term effects, and WebTAG now offers units on adjusting the conventional time-savings results to take this into account.

Critique of conventional appraisal

24. There is an emerging consensus of experts in the field that DfT's current methods are no longer a safe guide to transport choices to support economic priorities, for two reasons:
 - i. Increasing concerns about the validity in detail of the conventional process, even its own terms as a representation of effects within a perfect market; and
 - ii. Increasing disquiet about treating the larger and longer-term processes in imperfect markets merely as adjustments to the conventional, perfect market assumption.
25. The focus of existing methods on time-savings allows a conceptually simple prioritisation process to be consistently applied to a wide range of scales and types of scheme. However, the penalty is that wider and longer-term impacts are either ignored or treated only as adjustments. This may have been acceptable when reduction of congestion was the dominant policy objective, but will not do now that economic recovery and climate change have precedence.
26. Eddington's remarks about the benefits of transport investment appear to have been based on applying the conventional system, but achieving the economic aims he recommends requires a wider approach. It is arguable that over-investment in roads and under-investment in public transport has resulted from the dependence of conventional appraisal methods on time-savings, and that this has undermined the economic and social well-being of cities in the UK in significant ways – particularly when compared with many similar continental cities⁶.
27. Annex 1 deals with the background to these concerns in more detail.

Alternative methods of prioritising transport investment

Need for fundamental overhaul

28. Given the present pressures on limited resources, and the importance attached by decision-makers to achieving positive economic impacts, the serious concerns raised here about the inadequacy and potential bias of conventional appraisal matter a good deal. Ideally transport appraisal should include the wider economic and social consequences that are relevant to economic competitiveness. It was noted as long ago as 1997, in connection with conventional transport appraisal that *"The extraordinary consequence is that the largest and most important effects of transport play little or no part in the appraisal of transport projects"*.
29. While Land-Use/Transport Integration (LUTI) models offer ways of exploring some of these consequences, they bring with them increased complexity and uncertainty. Credible precision about value for money is unlikely to be the output of a transport model any time soon⁸.
30. Given that little in the way of major new commitments is likely to be feasible for some time, the time is ripe to carry out a more fundamental review of appraisal than DfT has so far attempted. We do not pursue this issue further here as there are other concerns which are more urgent (though not more important).

Balance between small and large scale, revenue and capital financing

31. The emphasis on time-savings tends to work in favour of large schemes, particularly roads, which are typically financed by capital borrowing. Annex 2 sets out the background to perverse incentives from the financing system that tend to reinforce this bias:
 - i. Local, small scale 'smarter transport' interventions are often financed (inappropriately) from capital, and so are first to go as capital budgets are cut – whether or not this makes sense in terms of effectiveness;
 - ii. Capital funding for major schemes continues to be sought even if the original rationale for a project has weakened, because once the scheme is abandoned, staff and other revenue costs can no longer be charged against it, and must compete for limited revenue money.
32. A recent study from the University of West of England⁹ suggests that, even using the existing appraisal system, large projects and projects in categories where most has been spent in the past do less well than small local schemes of the 'smarter choices' kind.

Interim methods

33. The means of exploring wider and longer term impacts are complex and poorly developed, so a short-term expedient is needed pending development of better alternatives. Elements of this could include:
- i. employing an interim pass/fail filter, using the criteria put forward by the Government in July and relating to existing NATA tests¹⁰;
 - ii. reworking existing appraisals to reduce the influence on CBRs of distant, uncertain and short time-savings by shortening appraisal periods, raising discount rates and discounting very short time-savings;
 - iii. using transport model outputs to estimate 'indirect' economic impacts instead of relying on conversion of 'direct' time-saving. The approaches currently employed in 'wider economic impact' reporting on regeneration areas could be more widely applied;
 - iv. constructing a common 'points' system to place CBR alongside other NATA factors rather than it being the single dominant factor. This would accord better with Green Book advice than present methods which neglect non-monetary impacts.
34. Such actions would be better than nothing, but only a short-term fix. For the future a more integrated and strategic approach could include the following:
- i. The wider impacts of larger scale policies and projects (such as road pricing, a national High Speed Rail network or extensive provision of rail-based local transport beyond London) should be informed by LUTI modelling;
 - ii. Planning concepts and processes should foster a more integrated relationship with other aspects of economic and spatial policy-making, to realise the potential for mutual reinforcement ('win/win') between agglomeration, quality of life, reduced transport demands, and reduced vulnerability to fossil fuel supply and price.
 - iii. Devolution of more responsibility for such plans to a more local level, at which the relationships between transport and other factors is more meaningful;
 - iv. Retention of central government responsibility for strategic national decision-making as cannot effectively be undertaken at a lower level – such as the balance between regions.

Other implications

Wider consequences of transport investment

35. Transport problems arise as much outside the transport system as from within it, and the effects of transport measures are felt far beyond the transport system itself. Long-term UK data show that *increased trip lengths* (implying changing locational choices) account for most of the observed growth of personal travel¹¹. A more diffuse pattern of locational choice by families and businesses, leading to increasing trip lengths for all purposes, is thus the major strategic cause of growing transport demand, and of related increases in car-dependency.
36. In the long term, land-use and transport have a symbiotic relationship, expressed through long-term, indirect processes. This point has been summarised by Peter Hall¹² as follows:

*"... at least since the first industrial revolution, two hundred years ago – the growth of cities had been shaped by the development of their transport facilities. But these in turn were dependent on the evolution of transport technologies. For each successive development of the technology, there was a corresponding kind of city. However, the relationship was more complex than that: it was a **mutual** one. The transport system shaped the growth of the city, but on the other hand the previous growth of the city shaped and in particular constrained the transport alternatives that were available. So the pattern of activities and land uses in the city, and the transport system, existed in some kind of symbiotic relationship."*

37. Peter Hall identified four major episodes of divergence between transport technologies and urban form over the last 200 years. The current crisis arises because agglomeration advantages in a knowledge economy depend on offering *both* an attractive quality of life *and* concentration of activity, while high current levels of car-dependency undermine both. In this connection we note that continental cities with integrated modern transport systems have

significantly better productivity than their UK equivalents (relative to their national context)¹³. London, with its extensive underground and suburban rail systems, is the exception that demonstrates the point.

Implications of abolition of RSS

38. The experience of national and regional plans (like RSSs) that attempt to commit to targets and measures that are too specific has not been happy, and transport has been particularly prone to producing this kind of 'end-point' plan. Unexpected events can render such plans redundant, and to the extent that their continued existence inhibits a flexible response to new problems and opportunities, even damaging. Any replacement within the localisation agenda needs to employ a style of planning that offers a clear sense of direction, but at the same time is more robust and more flexible¹⁴.
39. Transport planning in the UK comes from a tradition that plots a path towards a desired (and stable) end, and is therefore vulnerable to disruption by unexpected changes, such as those experienced with increasing frequency in recent years. Planning processes for all purposes and at all levels need increasingly to *manage uncertainty* rather than seek to eliminate it. The longer-term and more strategic the purpose, the more important it becomes to test alternative economic and social scenarios and responses to them. Such an approach might also help bridge the serious and persistent gap between strategic transport and spatial planning in the UK¹⁵.

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References

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- ¹ DfT White Paper (2004), *'Managing our roads'*
 - ² Standing Advisory Committee on Trunk Road Assessment (SACTRA) (1999) *'Transport & the Economy'*
 - ³ SACTRA (1999), *ibid*, para 23
 - ⁴ and of course some time-savings may remain uncovered, and of value as such
 - ⁵ since it was used in the case for the Victoria Line in the mid-1960s
 - ⁶ M Parkinson (2006) *'The State of UK Cities'* Report to ODPM
 - ⁷ A Wenban-Smith (1997), submission to SACTRA (*ibid*), quoted at para 10.10
 - ⁸ A Wenban-Smith and T van Vuren (2009) *'Using transport models in spatial planning: issues from a review of the London Land-use/Transport Interaction model'*, European Transport Conference, Amsterdam
 - ⁹ Phil Goodwin (2010) *'Improving value for money in the context of transport expenditure cuts: feasibility study'*
 - ¹⁰ see Keith Buchan (Viewpoint, LTT 550, 23 July 2010).
 - ¹¹ Department for Transport (2008), *'Transport Statistics GB'*. Analysis shows 70% of increase in motorised personal surface travel is due to longer trips (A Wenban-Smith, Committee on Climate Change workshop, 2009) http://downloads.theccc.org.uk/CCC_land_use_transport_report.pdf
 - ¹² Hall, P (1994) *'Squaring the circle: can we resolve the Clarkian paradox?'* Planning and Design **21** 579-594
 - ¹³ M Parkinson (2006) *ibid*
 - ¹⁴ J Robinson (1986), *'Paradoxes in planning'*, Long Range Planning Journal, Vol 19, No 6, pp21-24: a pertinent discussion by a former Shell UK executive
 - ¹⁵ Department for Transport (2004), *'The integration of regional transport strategies with spatial planning policies'*, report by MVA (especially Chapter 6)

Annex 1: critique of current appraisal methods

A1.1. A vigorous discussion has been going on over the last year or so about current appraisal processes. Starting with issues raised at national and European conferences and seminars, this has continued in recent months in the technical press¹⁶, in an e-mail group of experts (practitioners and academics). While there is no single viewpoint, it is clear that there is widespread disquiet about the 'fitness for purpose' of an appraisal system dominated by time-savings. This Annex summarises the main strands under three headings: modelling time-savings; valuing time-savings; and converting time-savings to economic benefits.

Estimating time-savings by modelling

A1.2. Criticisms of the models which are used to estimate time-savings included:

- i. The convention in standard transport models of representing dynamic processes as a series of equilibrium states may produce a systemic bias in favour of large schemes that support the continuation of past trends (particularly therefore roads);
- ii. Techniques that allow full dynamic modelling tend to be rejected because of unfamiliarity and because appraisal rules require comparisons between (artificial) equilibrium states;
- iii. Complex, diffuse, non-equilibrium processes (involving transport but extending well beyond it) may be responsible in the longer-term for larger consequences than the transport choice processes that are conventionally modelled. Adjustments for imperfect markets may not capture these effects;
- iv. LUTI models which can explore some of these wider processes in a dynamic manner are complex and difficult to calibrate or verify. They may help examine strategic alternatives, but do not produce the kinds of results that can be used to appraise schemes.

Valuing time-savings

A1.3. Having arrived at an estimate of initial time-savings, what is their value (both at the start and over time)? Difficulties here included:

- i. The validity of some or all of the following:
 - a. the valuation of business time-savings at wage costs, justified because this a market rate. However, time spent travelling may be productive (eg as a rail passenger), and it is not clear whether the market would really value very short time-savings at the standard hourly rate;
 - b. the valuation of all time-savings at the same rate, regardless of how short they are (business and leisure). A study of leisure time showed no value for savings less than 5 minutes;
 - c. the appraisal period is currently 60 years, while transport projections rarely look ahead more than 15. This means that the (untestable) assumptions made about the rest of the appraisal period are likely to have a major influence on the scheme benefits: modelled time-savings are of dubious validity over these time-scales;
 - d. the discount rate is currently only 3-4%, which was intended to add to the influence of longer-term environmental impacts, but has the perverse effect of increasing the influence of long-distant time-savings;
 - e. the unknown proportion of time-savings converted to economic benefit over the appraisal period (or remaining as time-savings).
- ii. Indicating the possible scale of these causes for concern, there are cases where an independent estimate of economic impacts has been made (because a Regeneration Area is involved), where independently identifiable economic benefits have been only ~10% of the value of time-savings over essentially the same area.

Conversion of time-savings to economic benefits

A1.4. The lossless conversion of time-savings depends on the assumption of a perfect market, which all are agreed does not exist. The present approach is to adjust for imperfection, but this may not be satisfactory if imperfect market effects (eg agglomeration) are of high policy importance:

- i. the uncertainties of modelling time-savings even 10 years ahead does not inspire confidence in their conversion to economic value over much longer periods
- ii. in the longer-run time-savings are transient – benefits are taken in the form of increased access, and it is the value of these that should be the focus of attention
- iii. even if perfect convertibility is accepted, the distribution of economic benefits between significant groups such as employers, employees, rentiers and travellers is important to decision-makers and requires a broader approach
- iv. the real economic value of time-savings may be further compromised by their measurement relative to a base case - 'time-savings' may merely be lower time-losses than would otherwise occur. These may not self-evidently be of equal value in the eyes of the public or decision-makers.

Annex 2: Capital and revenue in local authorities

The revenue / capital distinction

- A2.1. Local authority revenue expenditure means the day-to-day running costs of the transport planning function (e.g. staff wages and other operating costs incurred by a local authority). Revenue spending is financed via a combination of Government grants, non-domestic rates, receipts from sales, fees and charges (eg car parking and planning application fees), housing revenues and Council tax receipts.
- A2.2. Capital expenditure results in a fixed asset, such as investment in new or extended infrastructure. At present, central Government pays local transport capital to local authorities in two blocks (Integrated Transport Block and Highways Maintenance Block). These are paid by two means:
- **Capital Grant**, paid to authorities quarterly by DfT; and
 - **Supported Borrowing**, where allocations published by DfT are added to the notional debt for the authority and use by DCLG to distribute Formula Grant.
- A2.3. Capital can also be funded from a wider range of other sources (eg revenue, borrowing, other grants from central government, grants and contributions from other organisations such as the National Lottery and private developers through §106 planning agreements, or proceeds from the sale of land, buildings or other fixed assets).

Balance between capital and revenue

- A2.4. The line between revenue and capital expenditure these has become somewhat blurred in recent years. Historically, it has been easier to receive money for spending on transport in the form of capital grants, and local authorities have tended to prefer this form of support. This is primarily because it is easier to account for, and removes some of the uncertainties that occur because the Formula Grant is unhypothecated and 'damping' is used to limit fluctuations.
- A2.5. However, a consequence is that there has been an increase in the use of capital funding for purposes that ordinarily would be funded through revenue. This is particularly the case with measures to support 'smarter travel', such as the use of capital grants to fund posts for travel plan co-ordinators. This has the perverse effect that as capital budgets are cut, such posts tend to be first to go, whether or not this makes sense in terms of the direction or effectiveness of transport policy.
- A2.6. The converse is that local authorities can charge preparation and land acquisition costs for major schemes against prospective capital finance (including transport modelling, scheme design and appraisal which would otherwise be defined as revenue). This creates another perverse incentive: to carry on seeking capital funding even if the original rationale for a project has weakened, because once the scheme is abandoned, staff and other revenue costs can no longer be charged against it, and must compete for limited revenue money.

Future prospects

- A2.7. The relative ease with which capital funds may be secured, and the general preference for this approach to funding within local authorities will no doubt change as the financial constraints aimed at reducing the budget deficit become increasingly onerous. However, at the same time, it may also be the case that any new or innovative funding arrangements (for example from the private sector via Local Enterprise Partnerships) for spending on transport is likely to be continue to support capital expenditure rather than revenue.
- A2.8. The current economic circumstances do provide a means by which a shift could, and perhaps should, be made from capital spending on large infrastructure schemes to revenue-funded spending on more modest measures aimed at changing people's travel behaviour. It will still be the case that some new infrastructure should continue to be developed through capital expenditure, with contributions (usually maintenance-related, but also in infrastructure from §106 contributions) from revenue funds.

A2.9. However, the issue remains that the balance between capital and revenue expenditure will be determined separately by each local authority, and inconsistencies may subsequently arise. Certainly, in terms of encouraging walking, cycling and the use of public transport one of the biggest problems is the lack of adequate funding for maintenance. If maintenance is properly funded there might be little left for any other activity – capital or revenue.

A2.10. Overall, there appears to be a case for moving the present balance of funding further in favour of revenue spending. This not only would appear to be more relevant to the type of investments that local authorities will be making in transport going forward, but also would encourage a move towards a more prudent and cost effective approach transport measures that are relevant to local conditions and support economic growth. This will require action to counter the vagaries of the current system for calculating and allocating funding streams.

¹⁶ See Local Transport Today, Issues 552, 550, 549, 547, etc (thread from http://www.transportxtra.com/magazines/local_transport_today/news/?id=23860&StartRow=1)