

A joint report

Valuing the Small: Counting the Benefits

A paper presented by Professor Phil Goodwin (UCL) for CPRE, CTC, Living Streets, Slower Speeds Initiative, Sustrans and Transport 2000



Foreword

This paper has been prepared by Professor Phil Goodwin of University of London and was commissioned by six transport and environmental NGOs – CPRE, CTC, Living Streets, Slower Speeds Initiative, Sustrans, Transport 2000. It examines aspects of transport appraisal which have been obstacles to the development of integrated transport measures (schemes for promoting walking, cycling, safety, road-space reallocation etc.). Issues covered include, what are the problems in current appraisal and other procedures which hamper the widespread take up of small integrated transport measures which offer good value for money? And how could these be tackled?

The report was the subject of a seminar with the Department for Transport (DfT) and the Number 10 Policy Unit. Since the seminar, a major piece of work, *Less Traffic Where People Live*, has shown through examination of practical demonstrations that small scale measures, especially when combined, can make a big impact on transport problems.

The DfT also commissioned a programme of work to look at what has been named 'soft factors'. This substantial piece of work which culminated in the recent report, *Smarter Choices – Changing the Way we Travel*, again shows the huge potential that exists. It concludes that a significant (but realistic) increase in the use of such initiatives could deliver a nationwide reduction in traffic levels of 11%, a reduction in peak urban traffic of about 21%, and substantial reductions in congestion, providing other demand management measures were put in place.

The commissioning groups welcome the attention which is now being made to this issue and acknowledge that in some

respects the policy environment has moved on from that which is explored in this report. Nevertheless, it raises some important challenges for how transport policy and appraisal can ensure we value the small scale measures which can deliver real benefits to people's quality of life and contribute to tackling the problems of traffic growth and congestion.

During the course of this work and in the seminar, it became more evident that in some areas departmental guidance is being interpreted almost as statute. There may well be occasions where existing appraisal methodologies act as barriers to the development and implementation of small scale transport measures. In such circumstances we encourage local authorities and transport operators to be more open to developing alternative appraisal techniques, and for the DfT to be understanding in this departure from standard practice.

We hope this contribution on transport appraisal will help with the much wider debate which is necessary to ensure that we have the skills, appraisal techniques, resources and political commitment so that integrated transport measures achieve their full potential in delivering a sustainable transport policy.

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Introduction

This paper contains *part* of a report commissioned by a consortium of organisations concerned with the successful development of sustainable transport strategies, and drafted by Professor Phil Goodwin of UCL. It follows a report, *Less Traffic Where People Live*, which, using case studies of experience here and elsewhere in Europe has demonstrated that small-scale, or ‘soft factors’ can be effective in tackling transport problems, especially when used in combination. Such examples include bus priority schemes, measures for improving walking and cycling, traffic calming, car clubs, school and workplace travel plans, and the use of personalised advice and information to assist people in reducing the congestion and pollution they cause. The DfT’s report *Smarter Choices – Changing the Way we Travel*, has also highlighted the significant potential which exists to reduce traffic and congestion, providing soft factors are accompanied by supporting measures to manage demand.

The DfT has established a unit dedicated to developing experience on soft factors, including on appraisal. Coupled with the recent report, there is a gaining momentum behind expanding the role of soft factors in transport policy. These are all initiatives which are supported by national and local government, and on which the sponsoring organisations have in recent years become active advisers as well as campaigners.

Taken together, such relatively cheap and potentially popular initiatives are not only powerful contributions to the Government’s transport strategy: they are also the leading examples of initiatives which can produce improvements swiftly – an important consideration both for political reasons, and also in order to

produce the momentum and consensus for longer term initiatives.

This attractive combination of relative cheapness, environmental advantage, demonstrated successes in good practice, and speed of delivery would – one might think – lead to such policies being very high profile indeed. However, this is not always the case. The problem this report addresses is reflected in recurrent concerns that the merits of such initiatives are overshadowed by the bigger, longer-term, much more ambitious – and often much more controversial – ‘big’ policies: especially massive rail or road infrastructure projects.

In some ways it is natural that the ‘big’ initiatives should receive more attention than the ‘small’, especially in view of a long period of inadequate or distorted investment. But taken too far, this can be counter-productive. The question this report addresses is whether there is some systematic reason, deep in the appraisal and forecasting methods, which prevents perfectly good initiatives receiving the attention and funding they deserve. The suggestion is that there are indeed some important biases of this kind, and that sorting them out will have very helpful effects in avoiding wasted opportunities and accelerating delivery.

This report addresses the following questions and is intended to be a helpful contribution to this area of work:

- > what are the barriers that prevent the small, good value-for-money schemes being taken up with greater enthusiasm than the big, poor value-for-money projects?
- > are there ways of restoring a balanced implementation process?

It is obvious that such barriers will include political and ideological considerations, and the role of vested interests, but they are not the focus of this report. Rather, the concern is that there may be weaknesses in the *process of appraisal and assessment*, preceding any implementation, which produce a bias against the small schemes. This process is intended to resolve practical questions of design, economic questions of value for money, planning questions of consistency, and the relationship between short and long term objectives: it depends on a set of formal procedures and practices – surveys, models, forecasts, appraisal frameworks – built up over many years, and originating in the economic cost-benefit analyses whose principles and basic features were established in the 1960s and 1970s.

The suggestion is made that there are some *in-built biases* in current appraisal techniques – developed, as they were, in a different time and for a different agenda – which discriminate against some of the best measures, and for some of the least effective.

Problems for Small Schemes Caused by Current Procedures

Key features of current official appraisal methods

Official transport appraisal consists of a series of assessments of an initiative, grouped under formal headings and subheadings. The criteria evolve over time, and the official written guidelines coming from DfT sometimes lag behind the Government's own practice. Explicit criteria currently used include 'economic' (both in terms of transport efficiency and potential wider economic benefits), 'environmental', 'safety', 'integration', 'social exclusion', 'accessibility'. Other criteria – manifestly important though not usually included in the explicit list of criteria – are 'popularity among voters', 'popularity among organised stakeholders', 'effects on public sector borrowing requirement', 'suitability for public-private partnership', 'consistency with European regulations and directives', and on occasion 'consistency with previous statements and promises'.

The list and its treatment changes from time to time in accordance with Government priorities and scientific knowledge. There is always a procedure for forecasting the effects of an initiative for the more easily measured of these quantities, and judging the effects qualitatively for the less easily measured. The forecasting and calculations are usually done by professional consultants, working to 5-7 figure budgets (for schemes with 6-9 figure costs).

At the heart of transport appraisal is a set of calculations putting a cash value to the savings in travel time, accidents, and operating costs forecast to arise as the result of a scheme, and comparing these

with the cost of introducing it. These are generally felt to be the most reliable, being the longest established, though cases are known of estimates being extremely wide of the mark. Environmental impacts are increasingly calculated by reference to advanced scientific research, requiring specialised expertise and staff.

Assessments under headings like 'integration' or 'social inclusion' are usually done with the support of some tables and statistics of a descriptive kind, but without formal forecasting, and sometimes as an add-on – almost an afterthought – to the cost benefit calculations. Where issues of financing and organisational structure are included (e.g. in public-private funding arrangements) a different sort of expertise is used, from management consultants and accountants whose traditional charging rates are several times higher than transport consultants, which for big projects produces very large invoices, often for reports which, for reasons of 'commercial confidentiality' fail to reach the public domain are therefore not subject to public processes of scrutiny and criticism.

Schemes which are likely to go to a public enquiry, or are otherwise controversial, are likely to produce many volumes of evidence, often highly technical, or poorly written, or both, so that not only producing the evidence, but also reading and understanding it, can be a major and costly undertaking.

The conflict between proportionality of effort and bias against small schemes

The cost of undertaking such a comprehensive appraisal is not proportional to the size of an initiative.

Consider a major road proposal, costing £10 million, whose appraisal has cost, say, £250,000. To produce *comparable* evidence, with the same level of statistical confidence, for a local scheme reallocating existing road capacity for bus lanes and wider pavements would cost less, but not much less – say £100,000. But the scheme itself could cost little more than that: nobody would sensibly want to spend as much on consultants' reports as on implementing the initiative they are proposing.

So – quite rightly – such a major assessment is not done. Instead, a more sketchy outline assessment is carried out, with two major difficulties.

a) The work *looks* less impressive. It has not engaged and extended the professional expertise of the appraisers. It is given to junior staff and does not offer much in the way of career enhancement. Anybody who objects is facing an apparently easier target in terms of the impressive documentary evidence.

b) Worse, the short cuts used may actually bias against exactly such a scheme. This happened especially – in very many local authority areas – when using a short cut method of calculating the effects of such reallocation of road capacity on traffic conditions in a surrounding area, resulting in showing such a scheme at its worst and exaggerating the forecasts of 'traffic chaos'¹. The result has been that the short cut methods, chosen for legitimate reasons of proportionality, then wrongly showed the scheme to be unworkable, and it was abandoned without ever getting a fair hearing or a

fair trial. (A full-scale calculation would certainly have reduced this problem, perhaps even solved it, but taken more time and money).

The dilemma has therefore been:

- > choose a full-scale appraisal method, whose cost is out of all proportion to the initiative under discussion, the budget available therefore getting eaten up by studies rather than on-the-ground improvements; or
- > choose short cut methods, which are likely to show the initiative in a bad light (either technically or in terms of public relations).

Hence we can derive the first criterion for an improvement: *A method of appraisal must be used whose cost in money and resources is a suitably small proportion of the cost of implementing the scheme and which is not in itself biased against the scheme.*

The problem of 'speed' dominance

In the formal part of most cost-benefit analyses, especially of road schemes, a large – sometimes overwhelmingly large – part of the assessed benefit is the economic value of the very large amounts of time the scheme is expected to save road users, because the new capacity will enable them to travel faster. Not only does this constitute a majority of the assessed benefits to travellers, but it is also the driving force behind any other wider benefits which are hoped for, such as regeneration of local economies. Without some millions of hours of time savings, few road schemes would pass a value-for-money test.

This presents three different obstacles for small initiatives trying to capture their share of attention.

Obstacle 1. As we now know, many of these time savings for big schemes have been grossly exaggerated, due originally to omission, and now more often the underestimation, of extra traffic², induced by the scheme, which slows everybody down and reduces the benefits expected. Faced with a big project which promises big speed benefits – even if implausibly – and a small scheme which does not make such promises, there will be a tendency to go with the promise.

Obstacle 2. Ironically, even in the biggest projects, the promised millions of hours of time saved typically may be re-interpreted as a rather different promise, rarely if ever spelled out. What is actually offered, at best, is *not* ‘millions of hours’ saved, but ‘billions of seconds’³. For example, in the Government’s current *Ten Year Plan for Transport*, it forecasts that the entire effect of all the proposals in the plan would lead to an increase of traffic speed on inter-urban trunk roads from 81.6 k/hr to 81.6 k/hr, or about a half of a second per kilometre travelled. This is very much less than the average day-to-day variation in traffic speed due to random events, weather, etc, and therefore would not be noticed even if the forecasts are successfully delivered. In principle, for this reason conventional appraisal methods ought to favour those small local schemes which save an appreciably large amount of time for a smaller number of people – e.g. bus lanes – but paradoxically the opposite often seems to happen: a bus lane will be described as saving a few hundred people a minute or two each, and it sounds small, whereas a road

scheme will *not* be described as saving a few thousand people a second or two each, and the comparison is not made.

Obstacle 3. Promised or forecast time savings are converted to a cash value by application of a ‘value of time’ which is – by assumption – expected to grow in proportion to income in the future⁴. This tends to offset the principle that promises distant in the future, should be discounted (by application of a discount rate) which would otherwise more swiftly discount the long term benefits. So distant time savings are, to some extent, protected from the discounting process which would apply to non income-related benefits. This tends to reduce the relative advantage that small schemes would otherwise often offer, of being able to produce benefits more swiftly.

Obstacle 4. Possibly a much more important issue is that many small schemes of interest to this report do not actually try to make time savings. That is not their objective. They may actually do the opposite – not as an accidental unintended side effect, but because they are concerned to improve safety, or the perception of safety, or the quality of life in a residential area where traffic is made less intrusive, and to do so may involve *deliberately* making vehicle speed less. A related case is where a speed limit is reduced – for example for a home zone where pedestrian movement takes priority over vehicle movement, or on motorways during times of very high flow where speeds are anyway unstable – in order to smooth out the flow and actually increase the effective quality of movement on the road⁵. The problem here is that the travel time losses are then included in an appraisal as a measured, well-understood, ‘scientific’ calculation which enters into the

benefit-cost result, whereas the *objectives* of the whole exercise may get lost in the qualitative, unmeasured, 'unscientific' parts of the appraisal. Reliability, for example, is never accorded a money benefit, even though many people think that it should have a higher benefit than speed per se. And pedestrian time savings – although they should always be given a value in cases where this is the main point at issue, e.g. trading off vehicle delays and pedestrian delays waiting for green phases at traffic signals⁶ – can only do so if pedestrian journeys are as fully included in the analysis as vehicle ones, which is rarely if ever done for big road projects.

The answer here, it has to be said, may involve down-ranking the dominance of 'time savings' for both small and large schemes. This would be achieved by the following changes.

- a) *Whenever* total time savings are reported, for whatever type of scheme, it should always be accompanied by a table or chart showing how many people's door to door journey time is being changed (plus or minus) by less than 1 second, 1-5, 5-10, etc. Without this, it is almost impossible to assess what the figures really mean.
- b) Assessments of time savings for road users in general should always include allowance for changes to pedestrians and cyclists: calculations from a model excluding them are likely to be biased.
- c) But where the actual *objective* of a scheme is to slow traffic down (or to enable people to choose to walk more slowly for pleasure) this should not be expressed as a time 'loss' to be offset against the benefits, but as a benefit.⁷

It may be added that this is not only an issue for small schemes. Appraisal of big schemes also should take a more nuanced approach to speed and travel time savings. It has been noted that the overall amount of travel time spent per person, on average, has not changed much over the years, and the implications of this have not been taken into account in forecasting more generally.

The problem of safety values

There is a long established practice to ascribe an economic value to the loss of human life, and to injury and damage to property, resulting from accidents. Some people find this offensive, on grounds of morality or simply taste, a view which is recognised here but is not the main focus of this report. The question is – given that reduction in accidents is an important objective of transport initiatives, how does one ensure that there is a level playing field between small and large schemes.

It is a particularly telling point, because recent research repeatedly shows that fairly cheap local traffic management procedures – reductions in speed by traffic calming design or revised limit, better enforcement, simple changes to layout and design, etc – produce many times larger 'accident benefits' than big schemes expected to reduce accidents by encouraging more people to use relatively safer motorways than relatively less safe slower roads. In this case, we can say that the case for such schemes is already well-made by the present appraisal methods, and the task is not a different sort of appraisal, but implementation of the results of present appraisals.

However, there would still remain two problems. First, the economic values are accorded to calculation of actual death, injury or damage avoided. No similar values are accorded to improvements of the *feelings* of safety, and consequential effects on behaviour. Thus each accident avoided by building an impenetrable barrier preventing pedestrians from getting anywhere near a road is accorded the same value as if the same accident were avoided by changing the design into a pleasant streetscape with slower vehicles – and the same for publicity which scared pedestrians so much that they stayed in watching television instead of daring to venture out into their local streets, as for publicity which successfully encouraged more skilful driving. The ‘value’ in each case is simply the reduction of an accident. Yet clearly, the effects on behaviour, activities and indeed happiness and social well-being would be very different in these three cases. Logically, accidents prevented in a way which enhances the quality of life ought to count more highly in the calculation than accidents prevented in a way that reduces it: otherwise, what is the point of the calculation?

Secondly, there is an important exception to the practice of giving the same value to similar accidents, no matter how prevented. In recent years, there has been a practice to treat railway accidents as more highly valued than road accidents. This has a paradoxical effect, the opposite to what one might think. Railways – already very much safer than roads – are required to become relatively even more safe, which increases rail’s cost of operation considerably, and may perversely encourage more people to use road, at the danger of an increase in accidents. (It would be the same if any traffic calming

scheme in a residential area was required to adopt design standards which were so much more stringent than other schemes that hardly any of them could be afforded: the best is the enemy of the good.)

A problem of environmental assessment?

By and large, the type of schemes under discussion in this report are inherently expected to be better for both local and global environmental impacts than traditional infrastructure schemes, and there is not a systematic problem of bias. Rather, the problem is that the cost of proving this to be the case is out of proportion to the scale of the scheme, so tends not to be done, so *looks* like special pleading without the dignity of big appraisals or the career opportunities to professionals of carrying them out.

The problem of ‘effects on the wider economy’

There is little firm factual evidence⁸ of the effects of transport initiatives on economic growth, regional regeneration, or the competition between neighbouring towns, areas or countries. There are many theories, many of which are expressions of hope or intention rather than achievement. It is required that assessment is made of wider economic impacts of major transport schemes, though such assessments have yet to command widespread respect or consensus.

Two main approaches may be contrasted, of which the second, in modified form, may be helpful to small schemes.

- a) It is still not uncommon for local

authorities, and some national governments, to *assume* that any major transport improvement must almost by definition improve the economy in the area where it is placed. That assumption is then converted into the appearance of appraisal by suitably technical discussion, but at heart it is still an assumption. There is no point in extending this mistake to small schemes – rather the task is to discourage its use for any schemes.

- b) SACTRA's report *Transport and the Economy* proposed a different, and more subtle approach. In summary its key components, relevant for this discussion, are as follows:
- (i) where the local economy is not distorted by monopoly, excessive subsidy or uncharged external costs, the initial economic benefits calculated in a cost benefit analysis are a reasonable approximation to any wider economic impacts that may occur subsequently, and no extra allowance should be made;
 - (ii) where there are such distortions, causing local economic problems, transport improvements may make things better or worse (depending on the nature of the distortions) and transport initiatives may not be the best instrument to solve them;
 - (iii) where transport initiatives do provide additional wider economic benefits, they may not accrue to the target area, but to a different area, depending on their relative competitive strengths;
 - (iv) the decisive condition determining the outcome of these three conditions is

the degree and nature of imperfections existing in the local economy, which are most directly identified by the prices charged (for transport and for other markets) compared with their marginal social costs.

The DfT has published guidance, *Economic Impact Reports*, setting out how an EIR should be produced. Meanwhile the *Planning and Compulsory Purchase Act 2004* now provides powers for the Secretary of State to require an EIR to be published for major development projects. This is an area of particular interest to some NGOs, such as CPRE, which produced briefings on the subject.

Various attempts are underway to develop procedures which can convert these axioms into models and quantitative estimates, but they do not currently exist in a worked up and validated form suitable for off-the-shelf application either to large or small schemes. It is probably fair to say that this will continue to need to be a developing area of appraisal. Producing off-the-shelf reliable quantitative estimates, whether for large or small schemes is some way off. But there are some questions for which a qualitative estimate can probably be made fairly, in many locations, which would give an indication of whether such wider effects, if they exist, are likely to be generally positive or negative. Of these the most tractable would be: *Are conditions in the local economy such that transport prices are mostly lower than social marginal cost (due to uncharged congestion, environmental damage and other externalities) or higher (due to monopoly power or protected markets)?*

So the question is about the relative

importance of undercharged or overcharged resources in the transport sector – on which an assessment may be sometimes apparent even if the precise figures are lacking. If uncharged external costs predominate, then it is likely that policies to increase transport prices (e.g. by road pricing) – *or, by extension, restrictions and demand management with similar overall results to road pricing* – are more likely to have a beneficial wider economic effect than a harmful one. This applies even if it is not possible to make an accurate assessment of the actual values of environmental damage, monopoly power etc. If excessive prices predominate, the opposite may apply.

There is an equivalent question in relation to the price structure of the local economy as a whole (i.e. not transport, but all the other goods and services produced). It is unlikely that convincing evidence on this could be gathered in the context of small schemes, though if major studies in the same area were to answer the question, the conclusions could be transferred to other initiatives. If, on the other hand, consensus on the answer cannot be gained, it may be better to agree to ignore the issue entirely, since the theory and evidence is likely to go in either direction.

The problem of the ‘other factors’

To some extent, the level of commitment of resources, quality of analysis and back-up evidence often applied to issues of social inclusion, and transport policy integration, is poor for both large and small schemes (except in relation to bulk of paper), both often tending to rely on qualitative judgement in the case of social inclusion, and anodyne statements of reassurance in

the case of ‘integration’, which is not well-defined as an operational objective suitable for unambiguous statements.

There is no reason why appraisal of small schemes should not perform technically as well as large schemes on these grounds, and their origin and type will often (though not always⁹) be based on an equitable and environmentally sustainable thinking which influences their design throughout.

However, there is an opportunity for strengthening the definition and role of ‘integration’, which could be of great benefit. This concept has been poorly defined, and therefore much maligned, but it should be understood that this is partly because the same word has been used, over recent history¹⁰, for rather different concepts. Thus it has referred at different times to (a) integrated state ownership structures for different modes within the British Transport Commission, (b) co-ordination of bus and train timetables, and (c) interchangeable tickets. In the context of the 1998 White Paper *A New Deal for Transport* however, it had a different and, in current circumstances, more useful implication, i.e. referring to the need for many different instruments of transport policy (pricing, regulation, infrastructure investment, land-use planning, etc) all to reinforce each other for the same long-term strategic objectives, rather than to offset or neutralise each other in incompatible initiatives. That strategic objective is in turn defined entirely in terms of environmental, social and economic sustainability, essentially in providing efficient use of resources, improving ability to participate in employment and social activities (i.e. ‘accessibility’ rather than the traditional ‘mobility’) but without increasing damage to the environment.

This definition of integration lends itself more easily to some specific questions at the heart of the strategy, but not included explicitly in any appraisals, of which the following most sharply pointed one is suggested: *Does the initiative tend to increase or reduce car dependence?*

The problem of information

All standard methods of appraisal assume that individuals' travel choices are made on the basis of reliable and up-to-date information. We know this not to be true, and the result is that provision of better information can often be a method of producing benefits very cheaply: but the value of those benefits do not square with the original assumptions of the model, and therefore remain ambiguous. The complication of modelling a world in which bad information is allowed for, and of the complicated behavioural responses to true information,¹¹ and of how to interpret the 'value' of benefits in an economy which does not follow the usual presumptions of perfect information, raise difficult analytical problems which are not formally solved for big schemes, and are unlikely to be progressed for small ones.

Therefore even when there is confidence, from experience, that better advice and information can produce desired and beneficial results, applying the concept of value to that is not straightforward.

The problem of dynamics and disequilibrium

The view of the world which is embodied within formal modelling and appraisal techniques is one of equilibrium, stable 'end-states', which will be rapidly achieved. Albeit 'how long' is a question

that is rarely if ever asked for big schemes, since for a project whose main benefits are assessed for a design year 20 or 30 years away, it does not really matter much whether its effects will take one year to settle down, or five. But for a project which can be implemented this year, and will be subject to public scrutiny well before the next local or national election, it may matter very much whether its effects will take one or five years. But the pace of behavioural change is not necessarily swifter just because a scheme is small. Therefore there is much more attention in small schemes on early results, which may appear to show them at a disadvantage for the bigger, more distant schemes where the same problem logically applies, but is ignored.¹² A related issue is that, in some circumstances, theoretical considerations suggest that ignoring dynamic effects acts differentially on the assessment of some types of benefit as compared with others – including a tendency to exaggerate the apparent benefits of road construction schemes.

The problem of relevant data

It is extraordinary that it should still be the case, but even now transport surveys expect to collect data on vehicle trips with more detail, care, completeness and differentiation than they apply to walking and cycling – even to the extent sometimes of omitting trips by these modes entirely, or only collecting them for journeys to work, or occasionally collecting them as a single method of transport called 'walk/cycle' thereby making it useless for both. This is simply bad practice. It is obvious that it will result in an impoverished source of information for policy development and answering questions and criticisms.

What is to be Done?

The general approach

The logic pursued above leads to the recommendation that the present techniques should be developed and *improved both for large and small initiatives*, with the routine and widespread use of methods which:

- > include both walking and cycling, as two separate (not combined) modes of transport whose data and modelling is treated absolutely as seriously as is done for vehicles;
- > allow for a wider range of travel behaviour changes – not just the traditional four responses of trip generation, distribution, mode choice and assignment – but with recognition of changes in driving style and household behaviour due to psychological factors not just ‘economic’ ones;
- > distinguish the timescale of implementation and response in order to identify those initiatives able to produce results very swiftly;
- > do not treat ‘time-saving’ as the most important of all indicators, especially where it is unlikely to be delivered, or is indeed not the objective of an initiative;
- > allow for the synergetic combination of various different small initiatives to produce a total effect which is greater than the sum of its parts.

Research already carried out, by the then DTLR and others, has already contributed substantially to knowledge in these areas, but we recognise that to synthesise the results into a usable, tried-and-tested

framework of appraisal suitable for widespread application in the field will require a much greater and more focussed attention than the rather desultory way such matters are often treated, as ‘blue sky’ or ‘long-term’ research. We propose an accelerated and practical expansion of DfT’s attention to these developments.

We recognise that there are some quite substantial issues to be resolved. The problem of using comparable measures breaks down if the objectives are different – and, as pointed out, in practice the use of short cut methods is likely to leave unchallenged the technical biases which will continue to give, in some cases, exaggerated benefits for the big projects. There is no point in trying to solve this by devising similar ways of exaggerating the benefits of small ones, because this will distort decision making, raise unrealistic expectations – and be found out quite quickly.

What to do meanwhile?

Taking ‘integration’ seriously

One obvious short-term solution, while waiting for the results of the bigger changes, would be to aim for a simple ‘fast track’ simplified method for assessing the small schemes that are not adequately treated in current methods.

However, the argument above has tended to steer from a simplified form of appraisal for small schemes – using the same sort of quantities as for big schemes, but calculated using cheaper and quicker methods. This is for three reasons.

- a) Some of the methods used for big schemes are unreliable even in those cases, for which they have been

designed, and it would do more harm than good to apply them to small schemes (e.g. presumption that wider economic impacts are always positive, or dominance of time savings in appraisal). A more important task is to modify their use for big schemes.

- b) Some of the methods apparently suitable for big schemes would not be suitable for small schemes, because they measure the wrong quantities (e.g. time losses in an initiative explicitly intended to reduce speed).
- c) Some of the available off-the-shelf shortcut methods, widely used for small initiatives, have properties that are biased against the schemes they are assessing (e.g. fixed trip matrix assignment models).

Now in many cases the results of such appraisals will actually be available, as spin-offs from other work or because of established practice, and in that case the information, with due caution and caveats (including reinterpretation to allow for the effects of biases such as those mentioned) can be used. In other cases, schemes will be too new, small or isolated to make use of such back-up information.

For these reasons a rather different course is suggested. It is intended to identify those small, cheap initiatives where confidence is *sufficiently* strong that they will work to enable them to be put on a fast-track for implementation (on a permanent or trial basis, depending on the degree of confidence). This would be by two changes to current appraisal practice.

First, we suggest a substantial expansion of what is sometimes the 'empty box' in

current appraisal, namely 'integration'. Following the argument of the 1998 Transport White Paper, it became apparent that this was an important part of the Government's strategy, and should be reflected in the new appraisals. However, the idea was criticised by some professionals, who pointed out that 'integration' was not an end in itself, but a means to other ends – reductions in congestion and environmental damage, enhanced social inclusion, economic growth etc. – which would be treated separately. This on occasion led to 'integration' being seen as a narrow concept concerned with (for example) through-ticketing or timetable co-ordination.

These are certainly useful improvements, but we suggest substantially extending the concept. It is the 'integration' box in current appraisals which most usefully lends itself to consideration of important but ignored appraisal issues such as:

- > does the initiative tend to increase or reduce car dependence?
- > are the separate arms of the strategy – prices, road management, investment, education etc – self-reinforcing or self-defeating?
- > are there synergetic effects of a number of small initiatives which taken together can produce an enhanced outcome?
- > are there rapid short-term results which are *consistent* with the longer term objectives?

In some cases it will be necessary to address these with judgement, both professional and stakeholders, in the

absence (yet) of formal methods for doing so. We propose that guidelines interpreting the integration element in this way, and requiring a higher attention to them, will help to compensate for the low profile of such schemes in the official appraisal methodology.

The 'yes list'

To reinforce these results, we envisage a fast-track system for processing such schemes, a set of questions where if all answers are 'yes', formal forecasts and evaluations may be bypassed, hence avoiding the need to use inappropriate techniques.

The 'yes list' procedure would be designed – like mortgage applications – to identify a fast track of relatively problem-free initiatives to proceed without needing to pass the same type of assessment hurdle.

This is a series of questions designed to be answered yes or no – mostly on the basis of informed judgement rather than on formal modelling – where the test would be the degree and type of consensus around those answers. Following a formal statement of the objectives sought, the questions would be about the clarity of confidence that those objectives are actually met by the scheme, and address the relevance and direction of effect under a wide list of criteria. (The questions are deliberately intended to be simple in language and answer, but challenging in content, including the ability to reveal – more swiftly than is sometimes done in mainstream appraisal – weak points in the underpinning).

The general form of the assessment is somewhat similar to the appraisal

framework used for road schemes, but with significant differences, as shown below.

Monitors

An obvious concern in the above recommendations would be the fear that enthusiasm will displace caution, and there needs to be some sort of check on this. One possibility would be to use a low cost but skilled professional alternative to the independence and formal analysis of the best large-scale consultants reports. These would be a pool of monitors, with direct professional experience of successfully implementing schemes elsewhere, whose job is to say 'yes, that sort of design works' or 'no, we tried that and it failed'. In general this would be provided by highly motivated, experienced local government officials, from a different authority, whose own career track has been marked by success in such initiatives. It is possible that a few consultants or academics, of a suitable frame of mind, would be attracted also to perform at this task. The work would be rewarded, but the number of days, indeed sometimes hours, involved would be kept at a minimum, and the individuals concerned would be laying their judgement on the line, not extensiveness of evidence and reports. These people would have a powerful influence: they should be drawn from a designated and approved list (as individuals, not organisations) on the basis of their CV, with a DfT or Professional Institute selection process, renewed from time to time by reference to the action initiatives they had supported and helped to succeed. Their role would in part be a form of audit intended to compensate for the reduced production of forecasts and paperwork: the role of monitor would be a

The yes list – first draft example			
Scheme Objectives:			
Question	Answer	Who says so?	Unanimous?
Eligibility 1. Does it cost less than £_____? 2. Can it be implemented within one year? 3. If unsuccessful, can it be removed or adapted?			
Suitability for Purpose Have you considered experience that the instruments proposed will produce the objectives as stated?			
Econ1 Travel times Are travel time effects positive/neutral, or (if negative) intended?			
Econ2 Safety Are safety impacts positive/neutral?			
Econ3 Travel prices Are effects on travel prices neutral/intended? If prices increase, do you assess that they were lower than marginal social costs?			
Integration Does the scheme tend to reduce car dependence? If complementary measures necessary, are they in place?			
Social inclusion Who benefits? Who doesn't?			
Have you considered danger of unintended consequences?			
Recommendation Permanent Trial/Experiment			

high level professional accolade awarded to an experienced person whose judgement is widely respected. In the first stage, a relatively small number of people might appear as monitors for a high number of schemes (as is the case, say, for some of the better known QCs in cases of legal advice) but over time, as skills become more widely available, this would become more broadly based.

Endnotes

- 1 The problem arises because the short cut methods often use a technique called fixed matrix traffic assignment, in which the total volume of traffic is assumed to be the same, with the scheme or without, and a computer model then calculates how much of this traffic will use each road. If the total traffic is fixed, **all** the traffic diverted from the road with a bus lane (say) must reappear on the surrounding streets which, typically, will not be able to cope with such extra traffic and will grind to a halt. But the real-world experience of such schemes is that the total volume of traffic is not the same with and without such a scheme – there is often a small but important reduction in the total volume of traffic, enough to keep the surrounding streets functioning as normal. The ‘chaos’ does not occur at all, or only for a short period while traffic patterns adjust. A ‘variable matrix traffic assignment’, if well done, would solve this bias, but at the expense of needing more data, more complex modelling, and a higher consultants’ budget than would be merited. If fixed matrix assignment has been carried out, and says that the off-scheme traffic effects will be manageable, this will increase confidence that there should be no problem because the bias is in the opposite direction. If it says the effects are bad, however, this will be exaggerated.
- 2 Technically this is the mirror image of the ‘reducing traffic’ whose omission biases against reallocation of existing road capacity. Here, omission of induced traffic biases in favour of road building. The reason is similar: if the total volume of traffic is fixed, any extra capacity is used to increase speed – but the total volume of traffic, we now know, is not fixed. Both problems can be resolved by similar methods, which are, however, more complex and more expensive. (And, it should be said, even the best methods available are subject to strong technical criticism).
- 3 There has been a long-standing technical controversy among transport evaluators and academics about whether 3600 people saving one second, and 60 people saving one minute, and one person saving an hour, should all be given the same value – as they are at present – or whether the very small time savings should be discounted in value because they are inherently less useful. Nearly all surveys of opinions or stated choices in such circumstances tend to show that time savings of less than 10 minutes or so (and certainly less than one minute) are treated as proportionally less important, but this causes problems of logic, consistency and ease of calculation, which have been the dominant reason for sticking with the current assumption. (I have mostly been in favour of this, for logical reasons, although find it more and more difficult to do so when considerations of fractions of a second are at stake). It may be that the Government’s choice of a congestion target ‘percentage change in congestion’ is partly influenced by the fact that it converts invisibly small changes in journey time to apparently useful changes in ‘congestion’ – the half a second per kilometre travel time saving on

- interurban trunk road converts into '5% reduction in congestion', which sounds worth having.
- 4 If income is assumed to grow by say 3%, then so will the value of time, offsetting a significant part of the discount rate which will be in the range 5-8%. Note that the proportionality of value of time with income is not very well based empirically – partly because it does not seem to be true, and partly because even if it is, it is partly or wholly due in fact not to a genuine increase in the economic utility of time savings as people get richer, but due to a reduction to them of the 'value' of a given sum of money.
 - 5 This is different from the special case whereby reducing the speed limit, traffic can actually move faster, by avoiding the disruption and breakdown due to interaction of vehicles trying to travel at inappropriate high speeds. Those cases do not suffer from the same technical problems of assessment, but a different problem of intuitive credibility, as people often find it difficult to believe.
 - 6 Where this is done, it will tend to favour more frequent pedestrian green phases because there is much empirical evidence that savings in 'walking time' and 'waiting time' are valued more highly than savings in 'in-vehicle time'. However, walking time does not always follow the same behavioural rules assumed to apply to vehicles: for example, it would be absurd to count as a 'benefit' the time saving made by pedestrians who are forced to run across the road instead of walking, due to an inadequate pedestrian phase. Similarly, it is a matter of observation that pedestrians shopping in calm, tranquil, well-designed traffic-free areas *choose* to walk more slowly than those in hectic and noisy conditions. Again, it would be absurd to count the extra time spent as a 'loss' to them.
 - 7 This may cause difficulty for some cost-benefit economists, who would intuitively always count extra time as a 'loss'. But there is a precedent. In principle – and sometimes in practice, although the point is sometimes forgotten – it is *not* counted as a benefit in cost-benefit analyses if road users obtain a time saving through travelling faster than the legal speed limit. (It is a benefit to them, but not to society, and the saving should be excluded from the calculation. Similarly one would not think that it is a 'loss of welfare' if property stolen by burglars is confiscated from them, reducing their enjoyment of the proceeds of their crime.) Therefore once a legitimate decision is taken, by a proper authority, to define a new speed limit, time losses to vehicles obeying that limit should not be counted as losses. Making this practice more explicit and more prevalent would help to offset the domination of time savings in cost-benefit analyses, for small and large schemes alike. Currently, the point is sometimes concealed by the use of average speeds which appear below the speed limit, but include a proportion of vehicles who are travelling above. This is a disguised bias.

- 8 Though what there is tends to support at least some environmentally friendly transport policies, notably town centre pedestrianisation, which if well done leads to an increase in the number of people attracted to shop in a town centre, and its commercial success.
- 9 Cyclists on pavements, for example, or motorcyclists and taxis in bus lanes, or electric vehicles in pedestrian areas, or design features suitable for some forms of disability but not all, raise genuine questions of impact on specific groups, equity, and integration which merit serious and careful assessment on a case-by-case basis.
- 10 Especially due to the evolution of Labour Party transport policies, which have always been in favour of integration but for changing reasons. However, note that comparable shifts have occurred also within Conservative Party thinking, albeit often using a different language, notably 'balanced' instead of 'integrated'.
- 11 For example, provision of true information about how long queuers will have to wait for a bus may cause some of them to decide to walk instead, which is a retrospective benefit to them, but a loss to the bus company, and perhaps encourage more car use and consequent congestion. That is no reason for not providing it, but difficult to assess in cost-benefit terms. Conversely, the case where car users are encouraged to use buses by information which makes them realise buses are better and easier to use than they thought ought to be an unambiguous benefit, though some claims for the scale of benefit from such initiatives are so huge that, if true, they undermine much of accepted appraisal practice for all purposes.
- 12 A related issue is that, in some circumstances, theoretical considerations suggest that ignoring dynamic effects acts differentially on the assessment of some types of benefit as compared with others – including a tendency to exaggerate the apparent benefits of road construction schemes.

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