A Response to the NATA Refresh Consultation

Introduction

The SDC welcomes the Department for Transport's (DfT) decision to consult on the NATA Refresh with a view to ensuring that the NATA process supports the findings of both the Stern Review and Eddington's Transport Study. We note that the DfT is also beginning a process of review for transport strategy with the publication of the discussion document "Towards a Sustainable Transport Strategy". It will be important for the department to continue to review NATA to ensure that it is consistent with and helps to deliver the aims of the revised strategy.

1. Option generation

As is noted in Chapter 2 of the consultation document, all potential solutions need to be considered. The development of a wide range of options is an essential part of the appraisal process to allow appropriate consideration of different options.

NATA was introduced in 1998 to support the development of an integrated transport system. However, there are examples of scheme proposals which have been criticised for having one option fully developed by the scheme proposer while alternative options have been much less well developed[1,2].

This is likely to be due to either:

- Ownership – scheme proposers may not be mode-neutral and are likely to fully develop their preferred option and give less time and effort to possible alternatives.
- The amount of information and resources required to fully develop and appraise any particular option is quite large.

Often it is difficult to ensure that properly championed and fully developed schemes are available to cover all possible alternatives. For this reason **we would support the use of a two-stage process** in which stage one uses a simplified appraisal table to choose between options and stage two involves a detailed appraisal of the best available option(s).

Lessons may be learned from the Scottish Transport Appraisal Guidance (Scot TAG). This specifically states "It is an objective-led process that seeks to avoid the traditional solution-led approach and requires transport planners to identify what it is they are trying to achieve before identifying the means of achieving it."[3] It also uses a two-stage approach as we are suggesting here.

The DfT's 'Guidance on Transport Assessment' suggests an iterative approach is taken looking at the following:

- Reducing the need to travel
- Sustainable accessibility
- Dealing with residual trips
- Mitigation measures

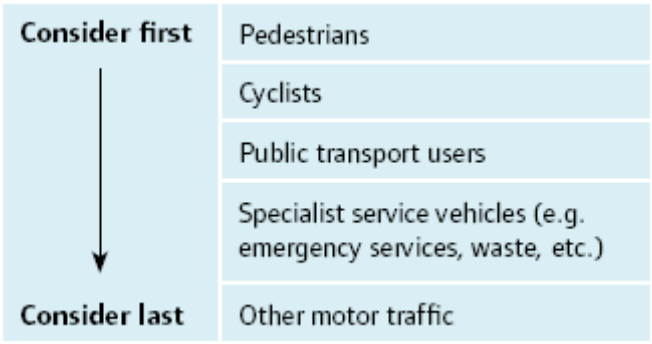
The Highway's Agency adopts a similar approach[4]:

We will seek to apply the following solutions iteratively:

- Impact avoidance through choice of sustainable location
- Impact minimisation through realistic Travel Plans
- Access management
- Capacity enhancements as last resort and only where compatible with suitable principles.

We recommend that stage one of a two-stage approach should include examination of options which cover the above solutions.

In addition we recommend that the hierarchy of consideration set out in the DfT's 'Manual for Streets'[5] should be carried over into the development of options for consideration within the NATA framework:



All aspects relevant to achieving the DfT's high-level goals must be assessed for each scheme proposal and from this analysis one or more options may be taken forward for more detailed analysis in stage two.

As appraisal of scheme proposals is currently undertaken by the proposers themselves, there is a need for appraisals to be independently scrutinised to ensure fairness in the comparison of options. Currently this is achieved to a limited extent through public inquiry; however, it is difficult for the general public to check the accuracy of modelled predictions. An alternative would be to have independent, trained scheme assessors to ensure both an appropriate range of proposals and that appraisals are unbiased.

2. Feedback of lessons learned from existing schemes

The NATA consultation document notes that "The main purpose of evaluation is to ensure that lessons are widely learned, communicated and applied when assessing new proposals."

The continuous improvement of the appraisal process itself through feedback of lessons learnt is essential for two reasons:

a. Since appraisals are of necessity based on estimates of likely outcomes, it is essential that the accuracy of these estimates is checked against results and any errors in the appraisal process are corrected for future appraisals.

b. The existing evaluation processes (e.g. the 1st year and 5th year after Post Opening Project Evaluations) seem to be given low priority and there is limited evidence of findings being used to improve the appraisal process.

Webtag unit 1.1 – Introduction to Transport Analysis includes a flow diagram showing the 'transport study approach'. The final step is shown as monitoring and evaluation, but does not include any feedback into future appraisals or development of future transport options. By contrast, the Scot-TAG process shows a flow diagram in which monitoring and evaluation are shown as an essential part of the process, feeding back into the 'pre-appraisal' section at the head of the process.[6]

The SDC considers it essential that the feedback process is given high priority in the NATA refresh.

In situations where modelled predictions have been shown to be inaccurate, the substantial amounts of data available for traffic modelling should be used to update and validate the models used. It is good practice to ensure that traffic models are validated using existing 'before and after' data from schemes which have already been implemented to check whether they are able to reproduce known results. There are many other attributes for which this can apply, including noise, accident rates, land use changes etc.

This process of capturing and learning from the results of existing schemes can be used to guard against exaggeration of predicted benefits by a scheme proposer. It is also the only way that the Dft can ensure that its current policies and processes are working to achieve its stated objectives. Any appraisal process is going to have shortcomings in its ability to deduce the best possible option. This is why feedback and periodic improvement is essential.

There also appears to be evidence of Post Opening Project Evaluation reports being written in a way that presents the scheme as being successful even when the results are very different from the appraisal estimates and do not appear to be meeting department objectives.

As an example, the 5 year after Post Opening Project Evaluation Report by ATKINS on the Newbury bypass reports that traffic levels on the bypass were 38-43,000 vehicles per day in 2003 compared to the "high growth" predicted flows for 2010 of 27-36,000[7] i.e., actual traffic flows exceeded predictions 7 years early. The report asserts that the primary reason for the substantial underestimate in traffic volumes is due to reassignment from local roads. However work by the Council for the Preservation of Rural England suggests states that "it is highly likely that the bypass has resulted in substantial induced traffic."[8] One likely reason for the increased traffic volumes is that 14 substantial new developments were built in the five years after the bypass was opened. However, the current process of the NATA appraisal does not include predictions of new developments in the modelling (see next section).

The evaluation does not refer to either the increases in CO_2 as a result of the increased traffic or that the numbers of crashes causing deaths and serious injuries rose by 50% in the five years after the bypass opened compared to the five years before, whereas the original appraisal for the scheme had predicted lower accident rates. It also shows traffic increases on the A34 corridor were 44-67% higher than regional rate increases but suggests that this is "not dissimilar" to regional rate rises. The report goes on to highlight

the economic benefits of the scheme being substantially higher than predicted (owing to journey time savings aggregated over much higher levels of traffic than predicted).

The key point is that the original predictions for traffic volumes, accident rates and economic benefits used to assess this scheme turned out to be significantly different to the results. There is disagreement as to the reasons why but the data should be used in order that better predictions can be made and better understanding of results obtained. This may require improved modelling and data collection procedures.

3. Actions to address shortcomings of the existing appraisal system

There are several important respects in which the current NATA appraisal system seems to be creating a bias towards schemes which result in increased private vehicle usage. These shortcomings have been covered in more detail in *'Decision Making for Sustainable Transport'* by Keith Buchan[9], but the key points that should be addressed in the NATA Refresh are:

- Increased fuel use is counted as a benefit due to increased fuel duty revenues to HMT, while mode switching from car to public transport is counted as a cost due to the loss of fuel duty and the lack of VAT on public transport fares. This means that the appraisal process is biased in favour of car journeys and against other modes.

- The value of trips made during the working day in which mode is switched from car to bus, cycling or walking is reduced which further biases the appraisal results in favour of car journeys and against these other modes.

- The current NATA appraisal uses fixed values per minute of time saved. Even very short journey time savings, when aggregated over large numbers of travellers, over the long lengths of time used for appraisal assessments (up to 60 years) result in very large figures for predicted economic benefits. However, the original report used by the DfT to establish journey time saving values shows that the "value of time saved per minute" should be higher for large time savings than for small ones and that small time savings were sometimes of negligible value[9].

- The treatment of land use currently works on an assumption that this remains fixed in the before and after scenarios for appraisal. This means that pressure for new buildings following implementation of a transport scheme is not currently considered in the appraisal.

As a result of these anomalies, schemes which generate increased levels of traffic and consequently increased CO_2 emissions are likely to be promoted while schemes that promote public transport, walking and cycling with their associated equality of access and health benefits are likely to be under-valued. Schemes can also be introduced which lead to further 'out of town' developments, and the associated increases in car dependency and generation of significant further traffic, without any of this being recognised during the appraisal process. The current NATA appraisal process can result in decisions which are inconsistent with Dft's Climate Change and Equality of Opportunity objectives.

To address these issues, the following recommendations are made:

1. Fuel duty revenues should be removed from the cost benefit analysis. This will remove the bias towards promoting schemes which generate traffic and/or result in mode switching away from public transport.
2. The value of time calculations should be simplified such that a standard non-mode specific value is used for all calculations (rather than the mode specific values currently used during the working day).
3. Appraisal of any scheme should include the likely consequences in terms of land-use changes, based on previous experience from other schemes.

4. Monetisation of impacts

The SDC notes the view that "impacts that are not monetised and included in the cost benefit analysis do not get sufficient attention in the decision making process"[10]. However, there are also significant issues associated with trying to identify monetary values for considerations as diverse as landscape, biodiversity and health.

The SDC supports the move to increase the number of impacts for which monetary values are included. However, a qualitative description should also be included in the Appraisal Summary Table to ensure transparency and understanding of the issues is maintained. Since Defra's work on Ecosystem services is not yet developed to a point where it may be used in the appraisal process, this may best be done by a continuation of the existing Environmental Capital Approach alongside the introduction of monetary values as they become available.

Nevertheless, social cost benefit analysis has many potential issues that complicate its effectiveness[11]. The SDC believes that increased use of monetised values must also take place within an overall policy framework that respects environmental limits in line with the UK Government's own sustainable development principles. Achieving sustainable development requires an integration of social, environmental and economic objectives to find the optimum solution.

The SDC welcomes the use of a cost of carbon in the appraisal and recommends that DfT works towards monetisation of other emissions (e.g. NO_x and particulate matter). In view of the importance of achieving CO_2 reductions in line with the forthcoming Climate Change Bill, it is recommended that the overall impact on CO_2 is highlighted in the Appraisal Summary Table as a separate figure showing the saving (or increase) in tonnes of CO_2.

We welcome the inclusion of the health benefits of cycling and walking, and would recommend that health becomes a separate objective rather than a sub-heading under the environment objective, reflecting the extent of the costs to the economy (£76 billion/year due to mental health problems and £3.7 billion/year due to obesity)[12]. There is increasing evidence that higher levels of walking and cycling can make significant reductions to levels of obesity and improvements in mental health as well as reducing CO_2 emissions.[12] Additional health costs associated with transport are from air pollution, which is estimated to reduce life expectancy by about seven to eight months and to cost up to £20.2 billion per annum, and accidents resulting in more than 250,000 road casualties a year, of which more than 3,000 incidents result in death.[12]

5. Increased transparency and open dialogue

The Webtag guidance is both a useful resource and a step forward in making the process of appraising transport proposals transparent. This should be developed further to ensure that it supports a truly multi-modal approach including options for demand management and better use of existing facilities as well as schemes to promote cycling and walking.

As with any complex process, changes can sometimes result in unintended consequences. Often these can be resolved through detailed changes and fine tuning but this requires expert and detailed understanding of the process. For this reason, as mentioned earlier, it is essential that learning from the results of schemes which are implemented is fed back into the appraisal process. However, an additional way to guard against unintended consequences is to ensure that open dialogue is maintained with those involved in using the NATA process after the Refresh.

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