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Better Transport 



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# Getting transport right

Proposals for better decision-making

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#### **Endnotes**

- <sup>1</sup> The Climate Change Bill will set a long-term framework to cut total UK domestic CO<sub>2</sub> emissions by 26-32% by 2020, and by at least 60% by 2050.
- <sup>2</sup> Office for National Statistics, Environmental Accounts, Greenhouse gas emissions, UK, 1990 - 2003
- <sup>3</sup> Department for Transport, October 2007, *Towards a Sustainable Transport System: Supporting Economic Growth in a Low Carbon World*
- <sup>4</sup> Department for Transport, October 2007, *Towards a Sustainable Transport System: Supporting Economic Growth in a Low Carbon World*
- <sup>5</sup> Rt Hon Ruth Kelly MP, 2007, Labour Party autumn conference speech
- <sup>6</sup> Department for Environment, Food and Rural Affairs, January 2008, *A Framework for Environmental Behaviours*
- <sup>7</sup> As reported in the *Guardian*, 22 December 2007
- <sup>8</sup> NATA webtag unit 2.1, paragraph 1.2.1
- <sup>9</sup> Department for Transport, 1999, *The Value of Travel Time on UK Roads*, Accent Marketing and Research Consulting Group
- <sup>10</sup> Department for Transport, 2007, *Towards a Sustainable Transport System*. Paragraph 2.4 states that the goals are "Maximising the overall competitiveness and productivity of the national economy, so as to achieve a sustained high level of GDP growth; Reducing transport's emissions of CO<sub>2</sub> and other greenhouse gases, with the desired outcome of avoiding dangerous climate change; Contributing to better health and longer life-expectancy through reducing the risk of death, injury or illness arising from transport, and promoting travel modes that are beneficial to health; Improving quality of life for transport users and non-transport users, including through a healthy natural environment, with the desired outcome of improved well-being for all; Promoting greater equality of transport opportunity for all citizens, with the desired outcome of achieving a fairer society."

# A better NATA is possible

**The government is currently reviewing the method by which it judges whether or not to approve transport projects. Green Alliance and Campaign for Better Transport have a few suggestions for the government.**

Decisions taken today about our transport infrastructure will determine how we travel for the next 60 years. The process that helps decision-makers decide which transport schemes go ahead and which are assigned to the waste bin is called NATA, the New Approach to Appraisal. This process is crucial for shaping our travel habits and providing us with alternatives to car and air travel.

The Department for Transport (DfT) is currently revising NATA – and high time too. In its current form, NATA promotes schemes that increase carbon emissions, damage important sites and go directly against government objectives. It even favours schemes that result in longer car journeys or encourage people into cars and away from public transport.

As welcome as the review is, it also sets some worrying precedents for putting a monetary value on environmental damage. For example, the current appraisal framework put a monetary value on noise pollution. The new, draft appraisal framework proposes extending this approach, putting a price on landscape, health, biodiversity and ecosystems. We definitely need to value these aspects, because they have been externalised from decision-making for far too long. But the price that they are assigned will be critical in determining how well they fare in a process of cost-benefit analysis. And can they ever really be assigned an adequate monetary worth? Shouldn't getting a night's sleep or being able to talk in the street be factored into decision making as standards that cannot be broken?

Let's make sure the revised appraisal framework benefits society and let's talk about how to shape this appraisal system.

It's time for a good NATA.

## Will the government's good words be matched by good actions?

With the Climate Change Bill<sup>1</sup> due to come on to the statute books this year, the government will set the UK on the path towards becoming a low-carbon economy. Currently transport is one of the few sectors where CO<sub>2</sub> emissions are rising, with an increase of 48.4% between 1990 and 2003<sup>2</sup>. In total, transport contributes about 23% (by source) of UK domestic CO<sub>2</sub> equivalent emissions.<sup>3</sup>

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For transport to contribute to the emission reductions set out in the Climate Change Bill, any decision-making process on new transport infrastructure or programmes has to be made with climate concerns as a primary factor.

The DfT recognises the importance of climate change, reflected in its recently published transport strategy<sup>4</sup>. Clear amongst its objectives is “reducing transport’s emissions of CO<sub>2</sub> and other greenhouse gases, with the desired outcome of avoiding dangerous climate change”, which commits the DfT to reducing its emissions profile. Transport Secretary Ruth Kelly has also committed the DfT to developing a dedicated carbon-reduction strategy<sup>5</sup>.

In addition, transport behaviours are being looked at by other departments: three of the twelve behaviours that the Department for Food, Environment and Rural Affairs is concentrating on under its new behavioural change strategy to reduce emissions are transport related, including to “reduce car use for journeys of three miles or under.”<sup>6</sup>

And just before Christmas 2007 Gordon Brown announced that all government decisions should take into account an adequate cost of carbon.<sup>7</sup>

But the government’s good words will fail to reduce emissions in reality if it does not provide adequate public transport infrastructure and prioritise low-emission transport. And for this we need a transport approval framework that promotes these.

## The problems with NATA

**NATA ends up making transport projects that are bad for society look good because of four major failings: it includes fuel duty revenue, puts a monetary value on some things that can't be monetised, greatly exaggerates the time-savings a new project would bring and values some people less than others.**

NATA, introduced in 1998, is a form of cost-benefit analysis used to assess a proposed transport scheme's value for money, deliverability and strategic fit. It is intended to promote schemes that align with government objectives to improve safety, support economic activity, protect the built and natural environment and improve access to everyday facilities for people without a car.<sup>8</sup>

The broad economic principle behind NATA is that 'winners' from a transport scheme indirectly pay any 'losers' for their discomfort or loss. A rough example of this is the London congestion charge, which prices some motorists out of their cars and on to public transport, walking or cycling. The remaining motorists pay to move around the city faster, and that income is used to support the alternative modes, which indirectly benefits the ex-motorists now using them.

NATA aims to factor the environment into decision making. It puts a monetary value on most costs and benefits of a particular transport scheme, from the carbon emissions caused to the human cost of a fatal accident to time-savings gained. This information is summarised in an appraisal summary table (AST); this AST is designed to provide most of the information the decision maker needs to decide whether to go ahead with the scheme.

Yet, in practice, NATA often discriminates against the very behaviours the government is trying to encourage. And furthermore it even discriminates against reliable motoring. It is bad for the environment – and for the motorist.

### **Fuel duty revenue skews appraisal**

Fuel duty is part of the NATA cost-benefit analysis, which means that any money raised by fuel duty is deducted from the capital cost of a scheme. As a result, NATA makes schemes which would cause higher fuel bills more attractive and makes schemes which would reduce fuel use less attractive. Public transport, cycling and walking schemes often fare poorly for this reason and so do schemes that make driving more efficient, for example 'green wave' schemes that sync traffic lights. This runs counter to government objectives to reduce carbon emissions. The value that NATA assigns to damage caused by carbon emissions is far too low to counteract this effect – currently calculated at around 5-6p per litre compared to fuel duty and VAT on fuel, which is around 55-60p per litre.

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For example, let's imagine a proposed green wave scheme which would cost £50 million to implement. The project might be assessed as having benefits equal to £100 million – a benefit-to-cost ratio of 2. But if NATA calculates the project would save people £10 million in fuel duty – perhaps because they won't be stuck in traffic – then NATA will change the benefit-to-cost ratio to reflect both the benefit to people (£10 million saved) and also the cost to the treasury (£10 million in lost taxes). The new benefit-to-cost ratio would be 1.83, making the project less attractive and less likely to go ahead.

In another example, let's imagine a bus project is being proposed to encourage car-drivers to switch to the bus. NATA would review the benefits of the scheme against the costs and consider the reduced fuel duty and VAT revenue as 'costs', which could make the bus scheme look like poor value for money.

### **Not everything can be monetised**

Not everything should have a price tag put on it. Certain items have an infinite value; they cannot be adequately assessed or traded against – a person's life for example, avoidance of injury, the habitat of an endangered species or the protected landscape of a national park.

Other items don't have a stable value and their price goes up the more they are removed. Like a night's sleep – lose one night and you might not cost it so highly, but if given the prospect of hardly ever having an undisturbed night's sleep you would likely assign it a far higher value.

NATA currently puts a price on some of these items in a way that systematically undervalues them and misses important social and ethical considerations – and the DfT wants to do more of this; for example it wants to put monetary values on landscape.

In effect, things that ought to have an absolute value are being traded off against time-savings for motorists.

### **Time-savings get distorted**

Time-savings used in NATA are averages, taking no account of size or length of journey. However, this does not reflect the reality for most drivers. The government's own research shows that savings of less than a few minutes are, unsurprisingly, barely valued at all by most drivers.<sup>9</sup> But NATA puts the aggregated, total time-savings into the AST (for example, 24,000 minutes saved), distorting the value of these savings. If this is actually one minute saved on 24,000 separate journeys, the monetary value of these savings should be almost zero and the time-savings should not be used to justify more carbon emissions or more accidents. Often more important to people (and GDP) is the reliability of a journey time rather than average time saved.

### People aren't valued equally

NATA avoids any audit trail of who changes transport mode. This is an issue because individuals are given different time-values depending on which transport method they use. Car drivers during their working day are deemed to be of higher value (to national GDP) than bus passengers because they are assessed to be higher-earning people. If a car driver switched to the bus, NATA would view that negatively because of the loss of fuel duty; and in addition their time would be considered as being of lower value. This double effect makes it very hard for a switch to public transport to score well in NATA, despite its desirability from an environmental point of view.

Although walking, cycling and travel plans – sometimes called 'smarter travel choices' – are emphasised as being critical choices when dealing with transport problems, often there is great reluctance to represent these initiatives in a transport model. There are very few examples of smarter travel measures being worked up under a NATA assessment. For example, projects involving more people working from home should give increased working time an economic value (the saved travel time is often used for increased working) but this is not reflected in the appraisal, whereas any fuel duty lost from people's drive to work is.

Lastly, there has been insufficient consideration of the reality of transport decisions. An individual may choose to walk to a closer shop rather than drive to an out-of-town shopping centre; changing modes might therefore also change demand for infrastructure.

### In practice, NATA is rarely implemented adequately

The government says it wants the NATA process to be as transparent and consistent as possible. Unfortunately reality bears little resemblance to its own guidelines.

The ASTs are often inconsistent both internally and between schemes. The social and environmental impacts are described without a clear context and with highly variable levels of detail. Underlying analysis is often obscure and incomplete and modelling poorly explained. There appears to be little training or scrutiny of the AST process to ensure the ASTs are accurate.

Outcomes of NATA are significantly influenced by the type of transport model and other analytical tools which are used. Just as prevalent is a half-hearted preparation of alternatives so that in some cases they are not assessed at all; in others they perform badly simply because they are badly prepared; and in others, 'alternatives' are of the same type of infrastructure as the main proposal.

## Recommendations

**The government should take the opportunity to revise NATA so that it benefits society and achieves the government's own objectives.**

### **Assess against new government objectives**

NATA objectives should be revised to include the goals in the new DfT strategy, *Towards a Sustainable Transport System*. Schemes should then be assessed to evaluate whether they contribute towards these goals.<sup>10</sup>

Most importantly, this will include an additional emphasis on climate change rather than the environment as a whole. Inclusion of a health objective will mean that encouraging frequent travel by car is seen as counter-productive – and the appraisal system will need to be adequately able to assess the benefits of walking and cycling. The current economic objective will need to move beyond a simple approach to time-savings and operating costs to one that values reducing the need to travel, demand management and relocation. Accessibility should be a key driver. This will mean it is likely that schemes will need to be bundled together so they can be assessed in order to deliver objectives.

### **Change the treatment of taxes in the appraisal**

Tax changes should be removed from the economic efficiency balance sheet. This would remove the current tax anomaly which produces a bias against schemes which reduce fuel use and which would increase the impact of the carbon price. It would restore the use of resource costs in the cost-benefit analysis which is a familiar concept in economics.

### **Stop monetising everything**

NATA should move away from the obsession with overall monetary values and simple evaluation figures. The pursuit of monetary values obscures the actual impacts of transport schemes. The AST should be revised to describe impacts more accurately and by context – for example, if time savings are included then they should be broken down to show savings per person as well as the overall total of minutes saved. Noise should be put in the context of achieving humane conditions both at home and in the places people want to be.

### **Set some standards**

The DfT should create standards in NATA against which trade-offs cannot be made.

There are some criteria which are simply not tradable. We should avoid the social and ethical difficulties of theoretical trading by establishing some basic standards:

- The transport schemes we assess should not reinforce and 'lock in' CO<sub>2</sub> emission rises above the downward curve that the climate bill commits us to. This should be a very simple pass/fail criterion
- Noise should have an absolute level above which it is simply unacceptable to go to preserve daytime conversation and night-time rest
- Some unique landscapes should simply not be built upon, such as Sites of Special Scientific Interest (SSSIs), Areas of Outstanding National Beauty (AONBs) and national parks. The habitats of endangered species should be preserved
- No scheme should go beyond an agreed level of local pollution

### **Consider alternatives properly**

Alternatives to any proposed scheme should be considered in full. Alternative schemes should be properly developed and assessed to ensure that the decision-maker has options against which to appraise the preferred project. An AST should be prepared both for the scheme being assessed and the best performing alternative. An independent vetting process should ensure this is done.

### **Make pros and cons more transparent**

A new version of the AST should be introduced to incorporate the recommendations above. We have prepared a suggested new AST; it and the current AST are on the following pages.

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### Current AST template

OPTION		DESCRIPTION	PROBLEMS	Present Value of Costs to Public Accounts £m
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE ASSESSMENT	ASSESSMENT
ENVIRONMENT	Noise			Net population win / lose NPV £m
	Local Air Quality			Concentrations weighted for exposure
	Greenhouse Gases			PVB £m
	Landscape			Score
	Townscape			Score
	Heritage of Historic Resources			Score
	Biodiversity			Score
	Water Environment			Score
	Physical Fitness			Score
	Journey Ambience			Score
SAFETY	Accidents			PVB £m
	Security			Score
ECONOMY	Public Accounts		Central Govt PVC, Local Govt PVC	PVC £m
	Transport Economic Efficiency: Business Users & Transport Providers		Users PVB, Transport Providers PVB, Other PVB	PVB £m
	Transport Economic Efficiency: Consumers		Users PVB	PVB £m
	Reliability			Score
	Wider Economic Impacts			Score
ACCESSIBILITY	Option Values			PVB £m
	Severance			Score
	Access to the Transport System			Score
INTEGRATION	Transport Interchange			Score
	Land-Use Policy			Score
	Other Government Policies			

NPV: Net present value; PVB: Present value benefit; PVC: Present value cost.

## Proposed new AST template

OPTION		DESCRIPTION		
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE ASSESSMENT (before and after)	ASSESSMENT (before)
ENVIRONMENT	Noise	Active street Home Day Home Night Open space	population above threshold population above threshold population above threshold area affected above threshold	Changes in affected populations and areas
	Local Air Quality	List all pollutants	Areas exposed above threshold	Population affected & level of achievement or failure
	Greenhouse Gases	Total transport emissions in scheme area	Total emitted over 60yrs less total if 1990 levels achieved	Amount in tonnes CO2 equivalent + PVB £m
	Landscape	Description of site + any special status	Sight line based area of change + effect on rights of way	Description, inc. direction of change*
	Townscape	Description of area	Specific effects including individual buildings + on footfall	Description, inc. direction of change*
	Heritage of Historic Resources	Description of area, type and scale of resource	Effect on individual resources	Description, inc. direction of change*
	Biodiversity	Description of area + specific resources	Effect on individual resources	Description, inc. direction of change**
	Water Environment	Description of context and specific resources	Effect on individual resources	Description, inc. direction of change**
	Physical Fitness	Degree to which scheme creates additional exercise	Person hours per individual by person type (not aggregated)	Estimation of health benefits
	Journey Ambience	Separate entries for each mode including walk & cycle	Refer to environmental and congestion entries & any other relevant factors	Description of changes
SAFETY	Accidents	Description of current pattern and problems	Estimate of changes by casualty type and location	Description of changes
	Security	Separate entries for each mode including walk & cycle	Refer to fear of accidents, isolation & intimidation, walking route audits	Description of changes
ECONOMY	Scheme Cost	Description of scheme/package	Optimism bias + description of risk assessment	PVC £m
	Transport Time and Operating Costs: Business	Description of total time savings by type and size	Users PVB OPEX, Transport Providers PVB OPEX, Other PVB	PVB OPEX £m
	Transport Time and Operating Costs: Consumers	Description of total time savings by type and size	Users PVB OPEX, Transport Providers PVB OPEX, Other PVB	PVB £m
	Reliability	Proportion of travel in congested conditions	Measured day to day variation in journey time	Description of changes
	Wider Economic Impacts	Description of local employment	Description of centralisation and labour catchment effects	Description of changes
ACCESSIBILITY	Option Values	Description of non-scheme modes affected		
	Severance	Include all non-motorised modes	Describe impact and location	Description of changes
	Access to the Transport System	Change current formula to PT only + create equivalent walking & cycling accessibility measures		Description of changes
INTEGRATION	Transport Interchange	This should draw on the impacts above which will include interchange and refer to them.		Description of changes
	Land-Use Policy	This should draw on the impacts above, especially Accessibility and Wider Economic.		Description of changes
	Other Government Policies	Description of areas and populations for the above impacts will enable an overall distributional analysis. Other policies can be included. Estimates of tax revenue changes could be included here, distinguishing between general taxation and environmental charges.		

\* Specific note of relationship with noise and air pollution entries

\*\* Specific note of relationship with air pollution entries

# Why is the government giving the green light to bad transport projects? Because the way it assesses these projects is flawed and makes bad projects look good. The government should change its assessment processes so that we end up with transport projects that benefit society and achieve the government's own objectives.

This leaflet summarises some of the main points of a larger piece of research we commissioned from Keith Buchan of transport planning consultancy MTRU; that research is available from either Green Alliance or Campaign for Better Transport.

## **Green Alliance**

Green Alliance is an independent charity. Our mission is to promote sustainable development by ensuring that environmental solutions are a priority in British politics. We work with representatives from the three main political parties, government, business and the NGO sector to encourage new ideas, facilitate dialogue and develop constructive solutions to environmental challenges.

## **Green Alliance**

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## **Campaign for Better Transport**

Campaign for Better Transport works to secure transport policies and programmes that improve people's quality of life whilst reducing environmental impact. Working nationally and locally, collectively and as individuals, through high-level lobbying and strong public campaigning we make good transport ideas a reality and stop bad ones from happening. We rely on the support of thousands of people around the country – with your help we can do even more. Please join us today.

## **Campaign for Better Transport**

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