

## How I Learned to Love the Transport Business Case

Neil Anderson

Technical Director

Amey Consulting

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# Evidencing the Wider Impacts of Transport Schemes

- Or How I learned to Love the Transport Business Case

## Abstract

This paper sets out how transport schemes can be presented in relation to their wider impacts, including economic impacts such as agglomeration, induced investment and employment impacts, along with social & distributional and environmental aspects. The paper emphasises the importance of a strongly narrated business case which enables us to deliver the right scheme in the right place, providing the outcomes we really need. A wealth of guidance is available but often can seem onerous and contradictory. The paper covers some of the recent changes to guidance across the UK (including the latest WebTAG and STAG guidance) and shows how these can best be used to plan a proportionate appraisal. Examples are provided to show how a clear narrative approach using selected tools has helped deliver funding for schemes as diverse as tunnel refurbishment in Wales, walking and cycling investment in Liverpool and a range of highway schemes. It goes on to show how it is being used to develop sound business cases for investment in the Scottish Strategic Roads Network.

A key theme relates to the hierarchy of programme development and the appraisal process which accompanies it. Although wider economic impacts can be added as a 'bonus' at the Final BCR stage, a more robust approach involves calculating the wider benefits of an overarching programme, then using more traditional appraisal based on user benefits to select the best delivery options. This involves developing broad scenarios based on new visions for an area – transformation rather than incremental change. The wider economic impacts, social and distributional changes can be calculated – then linked to transport schemes designed to help bring about the transformation.

The core message is that we should all learn to love the Business Case and work with other sectors to develop the best approach to developing transformational projects.

## The Transport Business Case – Deep Roots in the Treasury Green Book



The roots of the Transport Business Case lie in the HM Treasury Green Book. This sets out a structured approach towards ensuring that public funds are invested wisely and that decisions on spending are soundly made. The structure is 2-dimensional, with five 'cases' and six stages, including Strategic Outline Case, Outline Business Case and Full Business Case.

Whatever Guidance we are asked to use (WebTAG, STAG, WeITAG or local variants) – I find it's always best to go back to the Green Book.



This provides a wealth of material and the latest (2018) version builds on around 50 years' experience, including a great deal of transport-specific advice. You can download the latest version from [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/685903/The\\_Green\\_Book.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/685903/The_Green_Book.pdf). The stages are set out below – and bear in mind that this is intended as a Plan-Do-Review cycle which is intended to review and evaluate results to develop new policies and schemes to reflect the impact of the previous ones and the changes to the wider environment.

- Stage 0 - Strategic Outline Programme (SOP)
  - A single SOP may result in multiple sub programmes/projects
  - Strategic Economic Plans and Local Transport Plans are good examples
  - I think this is the place to identify Wider Impacts (see later)
- Stage 1 – Strategic Outline Case (SOC)
  - Scoping the scheme using a wider range of options (not just 'build a road')
- Stage 2 – Outline Business Case (OBC)
  - Detailed option selection and preparation (generally single option)
  - The stage which involves the most work
- Stage 3 – Full Business Case (FBC)
  - All aspects of procurement and delivery complete (ready to go)
  - Some LEPs ask for FBC but mean OBC!
- Stages 4/5 – Implementation/Evaluation
  - Critically important that this feeds back into the review of Stage 0

<b>The Five Cases</b>	<b>Key Questions</b>	<b>What the Business Case Must Demonstrate</b>	
<b>Strategic Case</b>	<b>Is the Proposal Needed?</b>	<b>Does it Meet Policy &amp; Strategy?</b>	<b>Is There a Clear Case for Change?</b>
<b>Economic Case</b>	<b>Is it Value for Money?</b>	<b>Have Different Options Been Considered?</b>	<b>Does it Provide Balance of Cost, Benefit &amp; Risk?</b>
<b>Commercial Case</b>	<b>Is it Viable (Can it be Bought)?</b>	<b>Can a Supplier be Found?</b>	<b>Can a Value for Money Deal be Made?</b>
<b>Financial Case</b>	<b>Is it Affordable?</b>	<b>Are Costs Realistic &amp; Within Budget?</b>	<b>Is the Funding Available &amp; Supported?</b>
<b>Management Case</b>	<b>Is it Achievable?</b>	<b>Can the Project be Delivered?</b>	<b>Do we Have Robust Delivery Systems?</b>

### ‘Once Upon a Time’ – Telling the Story

We all find it easier to understand something if it is described in narrative. Even complex maths proofs contain a narrative – a start, middle and an end. The whole of the Business Case should follow a consistent narrative throughout all five cases.



I've heard feedback from the DfT and from Local Enterprise Partnerships that it is all too common for the different parts to be presented totally separately with no links between them. And we all know that this often stems from the client writing the Strategic Case, consultants being employed to prepare the Economic Case and procurement and financial people doing the Financial, Commercial and Management Cases. With no overarching narrative.

Each Case should contain a coherent argument as to why a particular route is being taken – whether that be scheme options, procurement types or delivery governance.

In my experience, it really helps if one person takes overall charge of the script! Like the Director of a film. They can ensure a consistency of approach which is all geared to achieving a coherent set of objectives.

### What is it for? – The Need for Clear Objectives

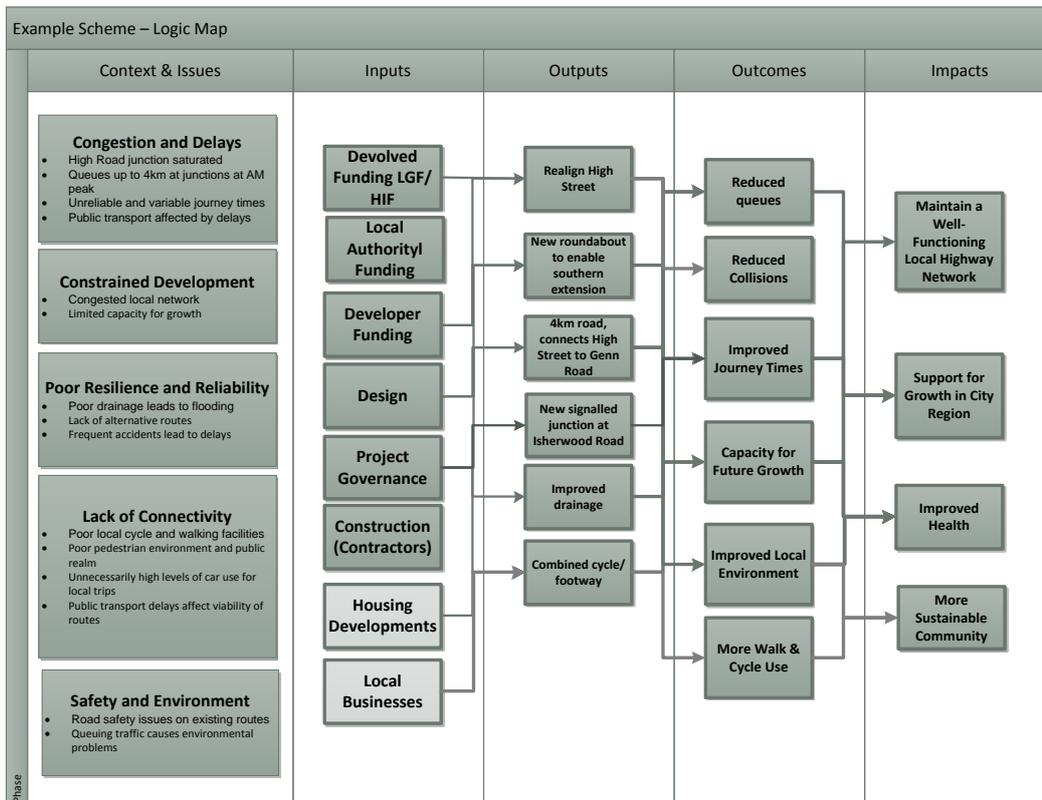
All too often we are asked to prepare a Transport Business Case for something which is already decided. The danger with this is that we might well lose sight of the purpose of the investment, delivering a scheme which does little to tackle the real issues. The Green Book (and virtually all the rest of the guidance available to us) stresses that there must be a strong Strategic Case which focuses on establishing a case for change. This in turn relies on setting clear objectives. They don't have to be quantified at the early stages – and should only be used to establish targets as we start to develop a clear approach.

However, they must be things which can be measured and are important to stakeholders. For example, number of miles of cycleway is meaningless if they don't join up. A better objective would be 'increasing number of cycling trips' - which can be built into a Logic Map which contains inputs (funding), outputs (schemes), outcomes (more cycling; linked to objectives) and wider impacts (eg better health).

Another real help can be setting Critical Success Factors (CSFs) linked to the scheme objectives and the five cases. An example is that spending must be within the funding envelope – eg by March 2022, otherwise the project fails as the funds are lost! If this happens, then the objectives will not be met – hence the word ‘critical’.

If the Green Book process is followed consistently, starting with setting out the issues, establishing objectives and CSFs, taking an open and inclusive approach towards developing and sifting options and setting out the results of not changing, it is possible to establish a Case for Change and alternative approaches which can be appraised. What is also important is establishing the true impact of ‘do minimum’. If the town centre is not improved, the impact is not ‘stays the same’ – it might be rapid decline!

The ‘appraisal’ bit tends to be the aspect all transport planners would probably consider a strength! But to avoid getting complacent, it’s worth us all revising on the many tools set out in the Green Book. For example, in my experience, causal chains and logic maps are crucial aids to developing the Business Case.



So what about these ‘wider impacts’? I want to explore an example before discussing the technicalities.

### Wider Impacts - Øresund Bridge; It’s not Just Scandinavian Noire!



Those of us who watched *The Bridge* will be familiar with the link between Malmo and Copenhagen.

What it demonstrates to me is that the ‘traditional’ approach to appraisal is totally inadequate in dealing with transformational schemes. If we’re improving a junction, it’s relatively straightforward to demonstrate user benefits – and to use TUBA to quantify and monetise these.

But *The Bridge*? If you had tried to base the case on journey time improvements for the few people who used ferries, you would not have been able to justify the scheme. I’ll show later how the reduction in Generalised Cost of a transport scheme can generate wider

economic impacts. But in the case of the Oresund Bridge, this just would not have worked. What this scheme has done is to bring Malmo and Copenhagen together as a single journey-to-work area – providing massive productivity/agglomeration and employment benefits.

So, the driver for this is wholly in these wider impacts. You would not do it otherwise. If you could achieve a similar link between Edinburgh and Newcastle you would do the same thing – create a single economic unit which functions as one. Edinburgh-Glasgow is rather more nuanced – there is already a lot of traffic between the two, so calculations based on user benefits, with an additional factor to allow for wider impacts, is probably reasonable. But we must always bear in mind that this would not be true with something transformational. Having set that challenge, I'll set out some of the mechanics of Wider Impacts, referring to the latest guidance.

### Wider Economic Impacts – A Summary

Productivity	Investment	Employment
		
<p><b>Clustering improves productivity</b></p> <ul style="list-style-type: none"> <li>- Easier travel OR</li> <li>- Relocation</li> </ul> <p><b>Greater Competition</b></p>	<p><b>Transport Investment enables development to take place</b></p> <p><b>Dependent Development</b></p>	<p><b>People enter employment and/or travel to better jobs</b></p>
<p><b>TAG Unit A2.4</b></p>	<p><b>TAG Unit A2.2</b></p>	<p><b>TAG Unit A2.3</b></p>
<p><b>Transport Investment Improves Accessibility, Reducing Generalised Cost</b></p>		
<p><b>But beware – would some have happened already, maybe somewhere else? Or will somewhere actually get worse?</b></p>		

This table summarises the Wider Impacts and points to the Web TAG Guidance which sets out the 'rules' of how these can be applied. There are lots of formulae – and bear in mind that the WITA (Wider Impacts in Transport Appraisal) tool has not yet been released in a working form.

There are also three 'levels' which reflect the relative degree of certainty amongst the Government Economists on the validity of these Wider Impacts – including a concern that many will be double-counted if built into an appraisal. These levels are set out below:

Land Use Status	Level 1 (Initial BCR)	Level 2 (Adjusted BCR)	Level 3 (Sensitivity Analysis & Final VFM Category)	TAG Unit
Fixed Land Use	User Benefits		→	A1.3 (User Benefits)
		Static Clustering	→	A2.4 (Productivity Impacts)
Implicit Land Use Change		Output Change in Imperfectly Competitive Markets	→	A2.2 (Induced Investment)
		Labour Supply Impacts	→	A2.3 (Employment Effects)
Explicit Land Use Change			Dependent Development	A2.2 (Induced Investment)
			Move to More/Less Productive Jobs	A2.3 (Employment Effects)
			Dynamic Clustering	A2.4 (Productivity Impacts)
			Supplementary Economic Modelling	M5.3 (Supplementary Modelling)

*NB – Arrows signify previous levels analysis required – ie, process is additive*

There is some strength in the narrative which says that reduction in Generalised Cost will lever in these impacts. In the 'perfect market' these would take place anyway as the user benefits will cascade through to the wider economy. Since these perfect markets (including elements such as 'perfect knowledge') don't exist, we have a further set of 'rules' which take account of market imperfections – enabling use of the formulae which add some 'icing' to the TUBA benefits.

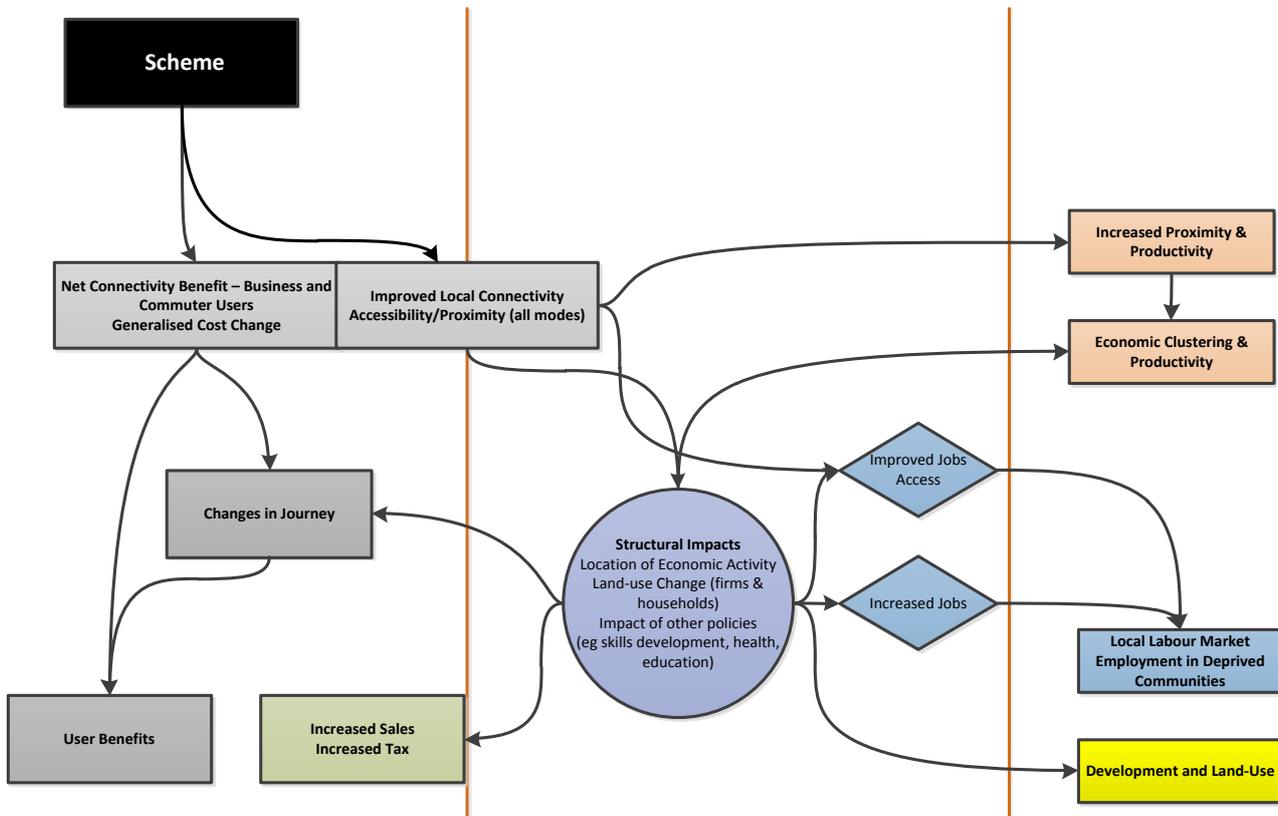
But is this really valid? It might add a bit to the BCR – but I suggest that we build in these benefits at Programme level (Stage 0 in the Green Book model) where we set out an overarching agenda for change. A visionary approach which does something more akin to Oresund than just increasing the capacity of some roads and junctions. This would include transformation of the economy as a whole, with the transport links being an important enabler. This is where the wider impacts can be introduced at a 'transformational' level, using visioning and benchmarking to help clarify the outcomes. Then the individual schemes can be assessed against the user benefits achieved with the 'policy on' (ie high-growth scenario). Sensitivity tests can be used to determine the impact of large shifts – affecting the value for money of scheme components and the programme as a whole.

To be honest, the tools we have to help us in this are not well developed. I think we have a role in working with the Economic Regeneration teams and with academics to develop an approach we can understand and control. LUTI models, which have been described as 'random number generators' are perhaps not the answer!

### Economic Narrative and Economic Transmission Diagrams

One tool which is set out in the Guidance is the use of an Economic Narrative which sets out the logic of the way in which economic impact will be achieved through the scheme. This links the Strategic Case with the Economic Case and is in my view an important part of the overall narrative in the Business Case. It sets out how the economic objectives set in the Strategic Case are reflected in the Economic Appraisal.

It should include an Economic Transmission Mechanism – which is probably best set out in a diagram.



It is also worth noting that the DfT have changed their mind as to how to present Wider Impacts in the Business Case. The original argument was that only 'Welfare' benefits should appear in the Economic Case. These are those calculated using TUBA, whereby the positive time-saving benefits are balanced by negatives, such as environmental impacts. Productivity benefits tend to be measured through GDP and GVA and don't have balancing negatives. Originally the proposal was that these Productivity benefits should appear in the Strategic Case, then reflected in the Value for Money Statement as Level 2 of Level 3 (adjusted or final Value for Money). All should now be reported in the Economic Case, with the Economic Narrative in the Strategic Case setting out how it will work – and with a clear differentiation of Welfare and Productivity benefits in the Economic Case.

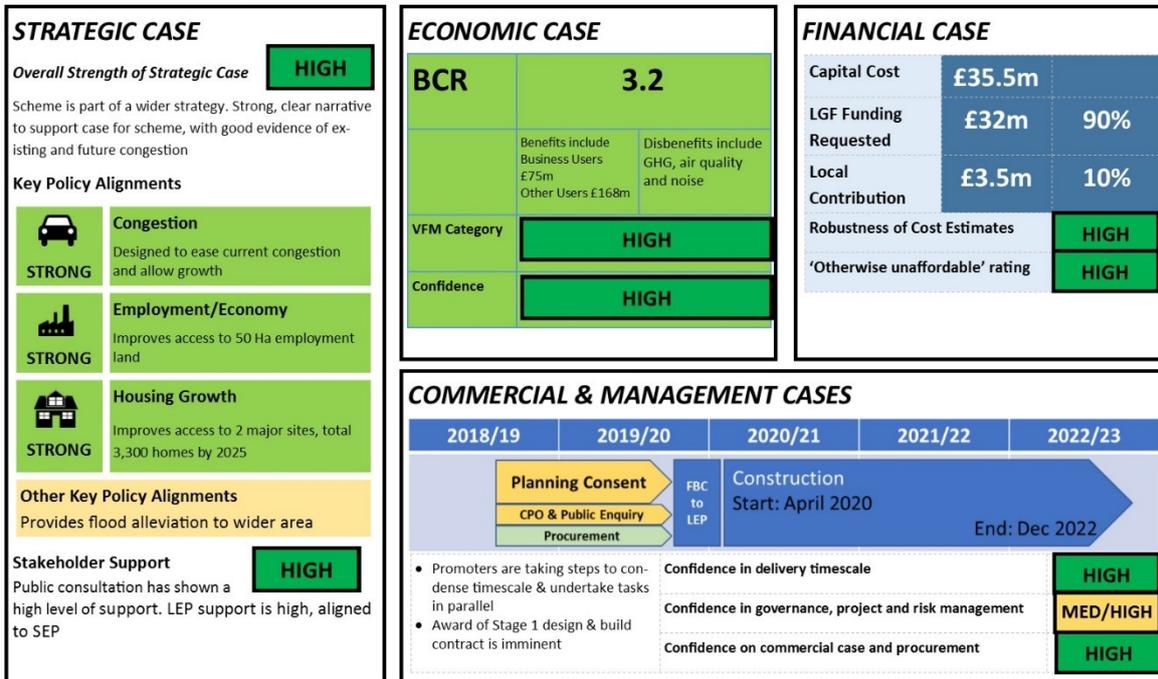
### Demonstrating Value for Money

Although we often focus on the BCR, the Guidance from both the Scottish and Westminster Governments is that 'BCR is not all'. As strong Strategic Case may make a sound argument for something which does not achieve a high BCR. The Summary below is in my view a good way of communicating this to stakeholders.

# A999 Relief Road

Gloucestershire County Council

*New relief road to reduce congestion for traffic entering town centre and to provide access for development sites to enable growth*



## Project Examples

My team at Amey has applied these principles to a wide range of schemes, enabling us to build a strong narrative for a wide range of schemes. These include:

- Liverpool City Centre Connectivity

*This involved a £44m scheme to transform connectivity across the City. This included new cycle routes, improved public realm, reduced traffic dominance and bus routing and standing changes. Amey used TRL PERS software, linked to VURT (Valuing the Urban Realm Toolkit) to monetise the benefits of improved public realm and pedestrian connectivity, with an Economic Narrative which showed how this would make the City Centre more attractive and more economically successful.*

- A55 Tunnels Refurbishment

*The three tunnels did not meet modern standards and needed to be substantially upgraded. Working with our Road Safety specialists, we developed an approach towards economic appraisal based on accident rates and attendant disaster scenarios based on European benchmarking. This enabled us to demonstrate that the capital costs of the scheme were far outweighed by the cost of rebuilding the tunnel in the event of a major fire – an approach justified shortly after implementation when a fire destroyed a similar tunnel in Norway.*

- Highway Schemes Linked to Housing Growth

*Although the Wider Impacts toolkit includes Dependent Development, we have generally found that the Business Case can be made through a combination of user benefits analysis linked to sensitivity tests and a strong Strategic Case. This avoids the relatively expensive modelling required for a Dependent Development analysis. However, the argument above for a 'programme level' approach is still valid*

## Conclusion

And this really brings me to my conclusion – what is the Business Case for? Well, in my view it's all about communication:

- Aiding communication with stakeholders in deciding what to do;
- Providing dialogue with funding bodies on evidencing value for money; and
- Presenting the scheme once we are clear of the best approach

Which brings me to the conclusion that we should all learn to love the Transport Business Case!