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Making the case for active travel

An insight from the Department for Transport's Economists
Philipp Thiessen and Joe Gayten





Overview

- ▶ Introduction
- ▶ Existing Evidence base
- ▶ Work in Progress
- ▶ 'BCR ingredients'
- ▶ The 'BCR machine'
- ▶ 'Insider Knowledge'
- ▶ Make you own BCR – hands on session



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Introduction



Introduction

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- ▶ Cycling Delivery Plan targets
- ▶ Cycling and Walking Investment Strategy (Infrastructure Bill amendment)
- ▶ Devolution (Local Growth Fund)

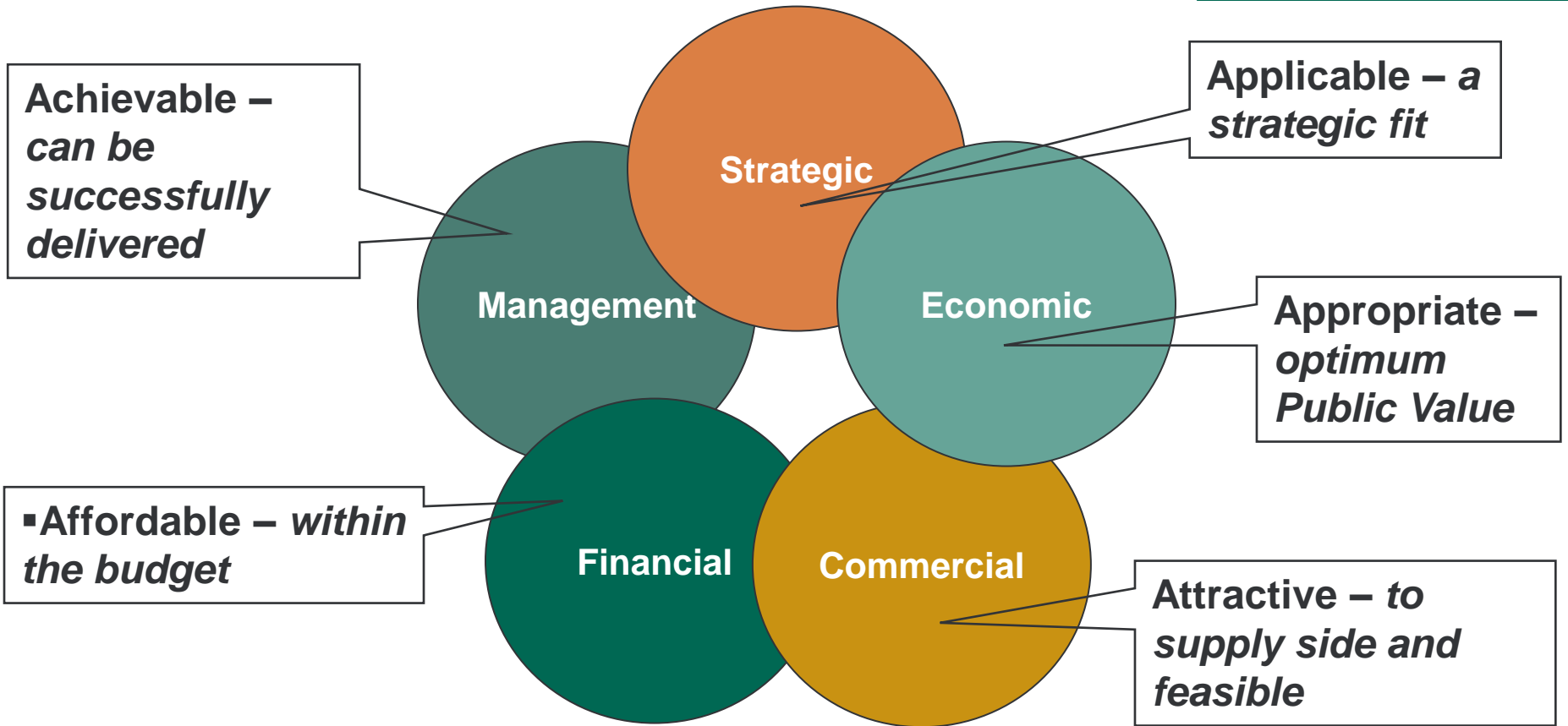
- ▶ All will rely on strong business cases made locally – by (some of) YOU!

- ▶ Today we will focus on active mode appraisal as this is most straight forward.. For more complex LSTF type programmes, more complex economic cases required...



Introduction: five case business case

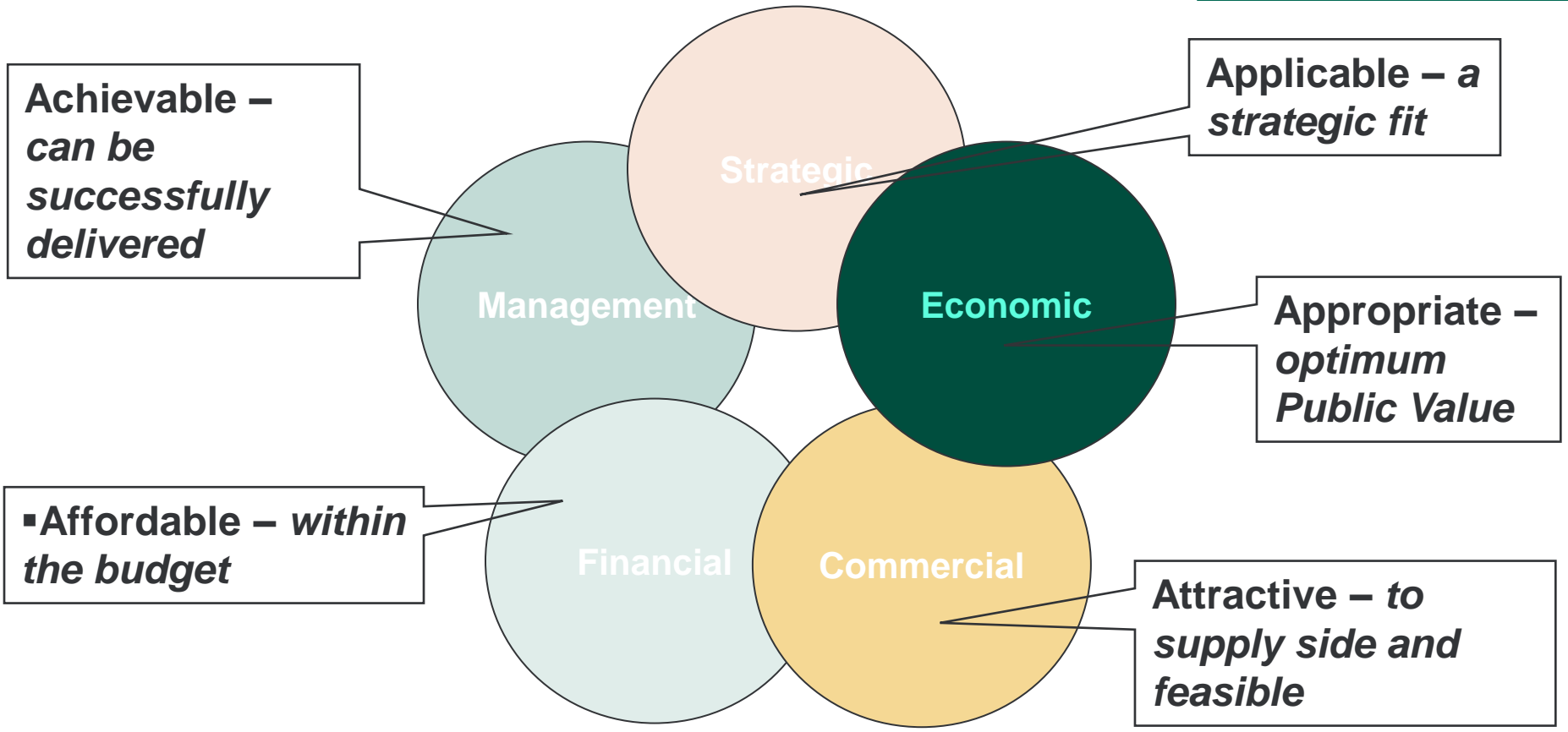
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Introduction: five case business case

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Existing Evidence base



Recently Published material

As on reading list...

- ▶ Published in November (CDP consultation)
 - ▶ Claiming the Health Dividend
 - ▶ Value for Money analysis of the large LSTF schemes
 - ▶ Value for Money analysis of the cycling grants
- ▶ Published in March (CDP consultation response)
 - ▶ LSTF employment impacts
 - ▶ Cycling and Walking – The economic case for action
 - ▶ The economic case for action – toolkit
 - ▶ Finding the Optimum: Revenue / Capital Investment Balance for Sustainable Travel

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Summary of the Economic case (BCRS)

Typical BCR's from these studies		
Sustainable Travel Towns	4.5:1	Decongestion benefits only
Cycling Demonstration Towns	2.59:1	Health benefits only
Local Sustainable Transport Fund	5.1:1	Based on 12 large schemes business cases
Cycling Ambition Grants	5.5:1	Based on business cases for 12 funded schemes
Linking Communities Fund	10:1	Based on eight representative schemes
Literature Review	5.6:1	Average BCR for UK case studies, overall average 6.3:1
Transport for London Cycling Vision	2.9:1	Very large programme - conservative BCR





LSTF employment impacts

- ▶ Employment impacts part of the **strategic case**
- ▶ Impacts not additional to those covered in the BCR – the economic case
- ▶ But can be a useful additional dimension for presenting a scheme where in **competition with other ‘local growth’ proposals**
- ▶ Paper demonstrates a methodology that should be relatively easy to apply to derive direct, supply chain and induced employment from public spending.

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Table 2.1: Local Sustainable Transport Fund employment impact

Step		Total
1	Central & Local Government investment (£m)	1,076
2	Direct spending on LA employment	130
3	Other revenue spending (1-(4+2))	253
4	Capital spending	693
5	Average proportion of total costs accounted for by labour	26%
6	labour costs (£m) (5×(3+4))	247
7	Average employment costs (£)	£38,225
8	direct employment (in full time equivalent years (FTE years)) (6÷7)	6,461
9	Local Authority jobs (from annual output reports)	4,037
10	Total direct employment (8+9)	10,498
11	Supply chain multiplier	1.14
12	supply chain employment (FTE years) (11×8)	7,374
13	Induced multiplier	0.2
14	Additional induced employment (FTE years) (13×(10+12))	3,521
15	Total Supported employment from investment (FTE years) (10+12+14)	21,393
16	Total employment impact per year during LSTF (FTEs)	5,348
17	Cost per job (£LSTF funding / FTE year)	£50,315

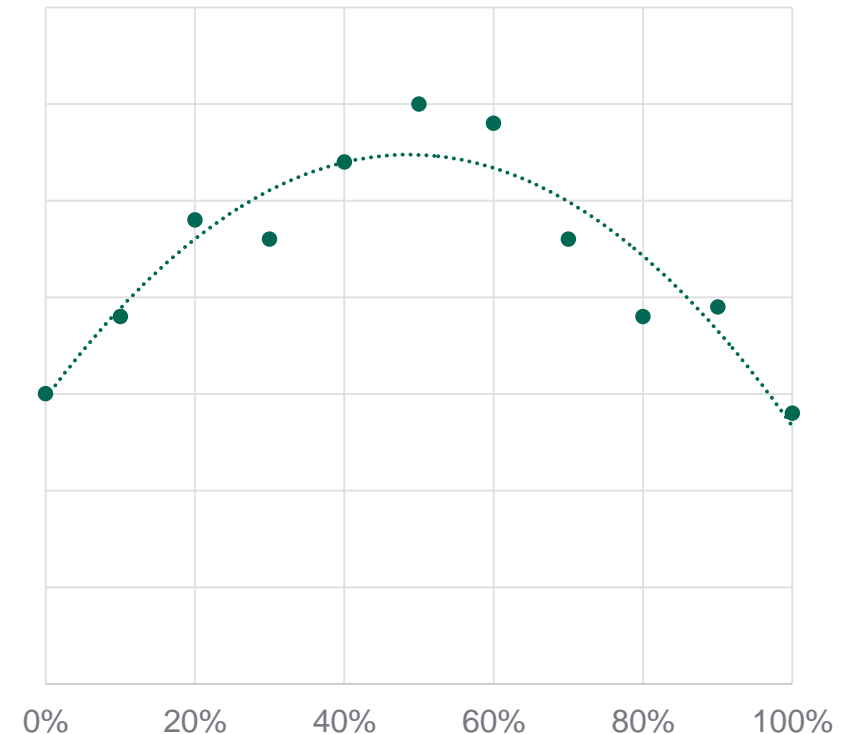


Optimal Revenue / Capital Investment Balance for Sustainable Travel

- ▶ Review of a large number case studies and existing evidence
- ▶ Main results: **different ratio required** in different circumstances
- ▶ Overall no optimal balance – but **extremes are suboptimal**
- ▶ There is some evidence for an **inverse U relationship**
- ▶ **Optimal changes over time** – e.g. build infrastructure first, then advertise it, then build more.

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BCR v Capital ratio





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Work in Progress



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Revisiting Sustainable Travel Towns

- ▶ Understanding how travel behaviour and habits have developed over the period following the initial investment (informing the 'decay' of benefits)
- ▶ Research currently underway, to be published later this year.

Social and Economic impacts of Cycling

- ▶ Topics include 'where do new cycling trips come from' (the 'mode shift'), impact of cycling on the high street etc. (the 'local growth impact')
- ▶ Evidence reviews and recommendations for evaluation frameworks underway



Propensity to cycle

- ▶ Micro-simulation model of the English Population
- ▶ Will allow policy makers to test where the largest cycling potential lies
- ▶ Should focus investment on areas with the largest 'quick wins'
- ▶ Allows achieving cycling targets in cost effective way
- ▶ Will provide heat-maps of where the latent demand is largest

LSTF – annual reports and meta-analysis

- ▶ A wealth of case studies and success stories are already coming out from the LSTF annual reports
- ▶ Meta analysis of the interim reports from 12 large schemes is underway, soon to be published

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Databank of case studies

- ▶ Both DfT and TfL have identified the benefit of sharing best practice and publishing existing evidence from previous scheme evaluations and making them available in 'one-stop-shop'.
- ▶ This is likely to be coming out later in the year.

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BCR ingredients



Cost Benefit analysis: Horses for Courses

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The image shows a screenshot of a complex spreadsheet or software interface, likely used for cost-benefit analysis. It features a grid with multiple columns and rows. The top row is a header with various labels. The main body of the table contains numerical data and text descriptions. There are several colored bars (orange, green, blue) highlighting different sections of the table. The interface also includes some navigation elements like arrows and a search bar at the top.

- ▶ The standard transport appraisal covers up to 24 sub-objectives.
- ▶ Depending on the scheme nature, transport models of varying complexity are required.
- ▶ In general there is no one size fits all

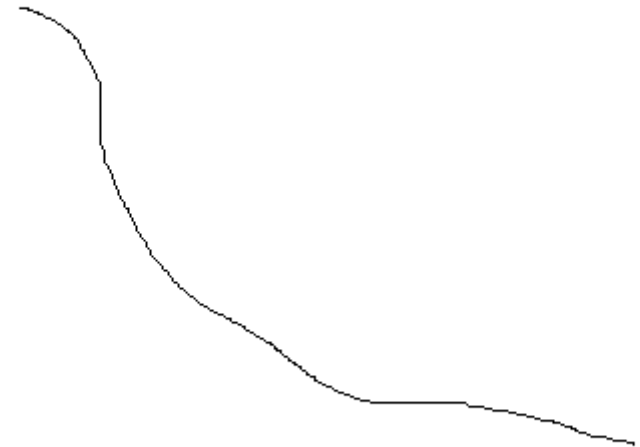




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1st Ingredient: Current use

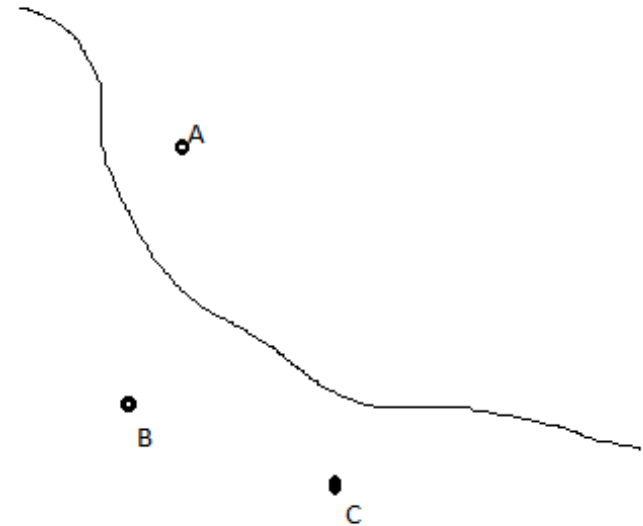
- ▶ The more people make use of a scheme, the better.
- ▶ A 'wider audience' will mostly give 'more bang for your buck'..
- ▶ Current use data can come from
 - ▶ Local Survey
 - ▶ Automatic/Manual counts
 - ▶ NTS, Census
 - ▶ Active People Survey
- ▶ E.g. starting from from Census data:
 - ▶ Imagine you plan a cycling route...





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 - ▶ NTS, Census
 - ▶ Active People Survey
- ▶ E.g. starting from from Census data:
 - ▶ Person Living at A...

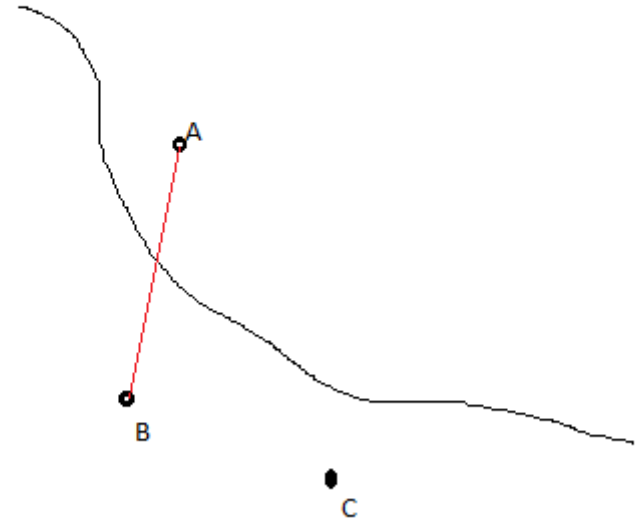


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1st Ingredient: Current use

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- ▶ A 'wider audience' will mostly give 'more bang for your buck'..
- ▶ Current use data can come from
 - ▶ Local Survey
 - ▶ Automatic/Manual counts
 - ▶ Or derived from combination of sources – e.g.:
- ▶ Starting from from Census data:
 - ▶ Person Living at A and working at B will not use your route...



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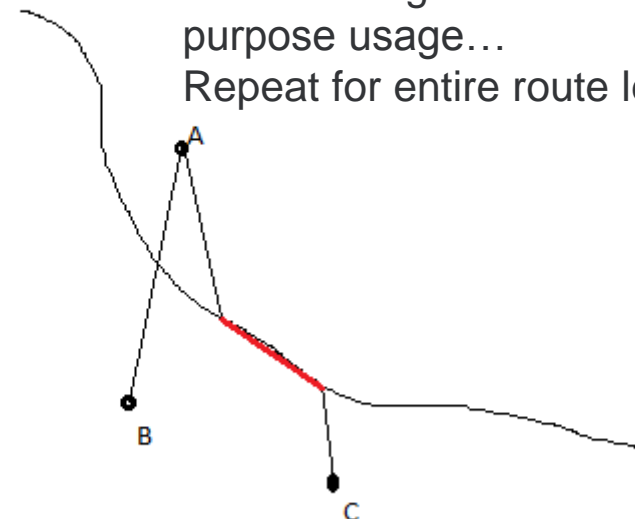


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- ▶ A 'wider audience' will mostly give 'more bang for your buck'..
- ▶ Current use data can come from
 - ▶ Local Survey
 - ▶ Automatic/Manual counts
 - ▶ Or derived from combination of sources – e.g.:
- ▶ Starting from from Census data:
 - ▶ Person Living at A and working at C is likely to use part of your route for part of their journey...

That estimate for commuting use can then be extended based on e.g. NTS data to all purpose usage...
Repeat for entire route length!





2nd Ingredient: Future use

- ▶ Introduction
- ▶ Existing Evidence base
- ▶ Work in Progress
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- ▶ Another factor of success is how many additional users might be encouraged to take up walking/cycling as result of the scheme.
- ▶ Encouraging more physical activity in the population can have significant health benefits, not least future NHS savings!
- ▶ Several ways for forecasting future use in WebTAG – most popular:
 - ▶ Evidence from existing study
- ▶ Need to consider transferability
- ▶ Example: Cycling Demonstration towns, Sustainable Demonstration towns and Cycling Cities and Towns all show ~+25-30%



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3rd Ingredient: Quality Valuation

WebTAG databook shows values users place on different types of infrastructure

Need to reflect on the part of the average trip is made on the route and the counterfactual.



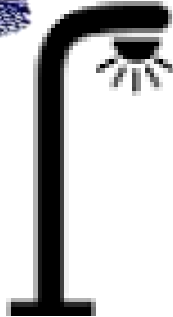


3rd Ingredient: Quality Valuation



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WebTAG databook shows values users place on different types of infrastructure





Other Ingredients:

- ▶ Introduction
- ▶ Existing Evidence base
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The 'BCR Machine'





- ▶ Introduction
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Please answer the following questions with your best estimates to obtain a benefit cost ratio of your scheme. By varying your answers you can test the importance of the input data on the overall value for money of your scheme. The answers provided are for the example case study from Appendix B of WebTAG unit A5.1. This case study provides further helpful commentary that users of this tool might want to refer to.

Scheme details

When would the scheme be likely to open?
 What is the last year of initial funding?
 Decay rate (starting from last year of funding)

WebTAG A5.1 explains - the impacts especially of revenue funded initiatives such as cycle training or personalised travel planning are likely to diminish year by year following the investment. For the case study here this is likely to be conservative.

Appraisal period (should be the expected asset life, maximum 60) yrs

Do Nothing scenario

This is what is most likely to happen if the scheme is not implemented. The data could for example be from automatic or manual traffic counts.

Number of cycling journeys per day, average length km and speed kph
 Number of walking journey per day, average length km and speed kph

Ideally the data is taken from 'average weekday' in spring or autumn to avoid seasonal bias. A return trip involves two journeys and would need to be counted as such. To identify how many individual users this implies, please estimate the share of journeys that form part of a return trip here:

Do Something scenario

Once your scheme has reached it's full impact (ignoring any initial build up here), how would these figures have changed (due to the intervention)?

Number of cycling journeys per day, e.g. from automatic or manual cycle count.
 Number of walking journey per day

For simplicity it is assumed that the length and speed of journeys is largely unaffected by the intervention.

Costs

Please provide estimates for upfront costs as well as future maintenance costs in the table below. Please enter the full costs of the scheme in the first column and any private sector contribution to those costs in the second. All other funds are assumed to be from local or central Government.

Please use a constant price base and specify the year here
 Please refer to WebTAG unit A1.2 to set Optimism Bias

Year	Total scheme costs '000£	3rd party contributions '000£
2009		
2010	201	
2011	19	
2012	19	
2013	19	
2014	19	10
2015	19	
2016	19	
2017	19	
2018	19	
2019	19	
2020	19	
2021	19	
2022	19	



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Journey Quality impacts

WebTAG units A5.1 and A4.1 provides guidance, the Databook provides suggested values that users might place on the improved infrastructure your scheme provides. The values are shown in the WebTAG journey quality tab. The improvement over the 'do nothing' scenario should be valued, rather than the absolute level.

For cyclists pence per minute pence per trip (e.g. shower facilities)
 For pedestrians pence per km

As demonstrated in the case study, these values should take account of the proportion of the average journey that would be made on the improved infrastructure.

Decongestion benefits

What proportion of new users would most likely be using a car in the do nothing scenario?

for cyclists
 for pedestrians

Which area type from the drop down is most similar to the area your scheme is located in?

Additional information

Background Growth

If you have an estimate of the growth in background use (in both scenarios), please set the annual growth rate
 the period over which this applies years

Number of days in the year that you would expect the above usage figures days p.a.
 In the case study this is assumed to be the typical number of working days - but might more appropriately be set to the number of weekdays.

2023	19
2024	19
2025	19
2026	19
2027	19
2028	19
2029	19
2030	
2031	
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'Insider Knowledge'



Some tips and hints – The Narrative

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- ▶ Tell the story
 - ▶ What are the local issues and problems
 - ▶ Why and how is your scheme solving this?
 - ▶ What does it look/feel like, what are we buying with the funding?
- ▶ Don't assume we know anything about your scheme
- ▶ Don't underplay the Strategic case





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Some tips and hints – Transparency

- ▶ Tell the story behind the economic case:
 - ▶ Data Sources
 - ▶ Assumptions and Evidence base
 - ▶ Sensitivity tests
- ▶ Be open on limitations and missing data or evidence
- ▶ Submit workings and spreadsheets, show benefits by driver and link back to strategic case – how does your scheme cause this impact?
- ▶ If we get a simple *'My BCR is 100'* without supporting evidence or explanation, all we can do is **reject**
- ▶ Extremely frustrating having to reject the most wonderful schemes because of some details missing.
- ▶ **If anyone knows, its you, so tell us!**



More tips: read the question...

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- ▶ Especially in competitive funding allocations...
- ▶ We are trying to minimise work for you and ourselves when we
 - ▶ Ask for specific data
 - ▶ Ask you to fill in an Excel form
 - ▶ Ask for an economic appraisal or evidence report
- ▶ We do that in order to avoid unnecessary/expensive work for you!
- ▶ So please
 - ▶ Don't submit the PDF version of the Excel form
 - ▶ Try not to add rows or columns
 - ▶ Make it obvious where you answer the questions
 - ▶ Clearly point us to the supporting evidence
- ▶ Return the favour and make it easier for us to fund your scheme!
- ▶ **Really frustrating to only find that hidden appendix when its too late!**



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DIY - Hand on session



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Examples

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- ▶ The toolkit is available on <https://www.gov.uk/government/publications/cycling-and-walking-the-economic-case-for-action>



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Any other Questions?

- ▶ Do not hesitate to contact us

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