

# Measuring transport impacts

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# Introduction

- Identifying transport impacts
- Defining a baseline
- Estimating and quantifying transport impacts



# Identifying transport impacts

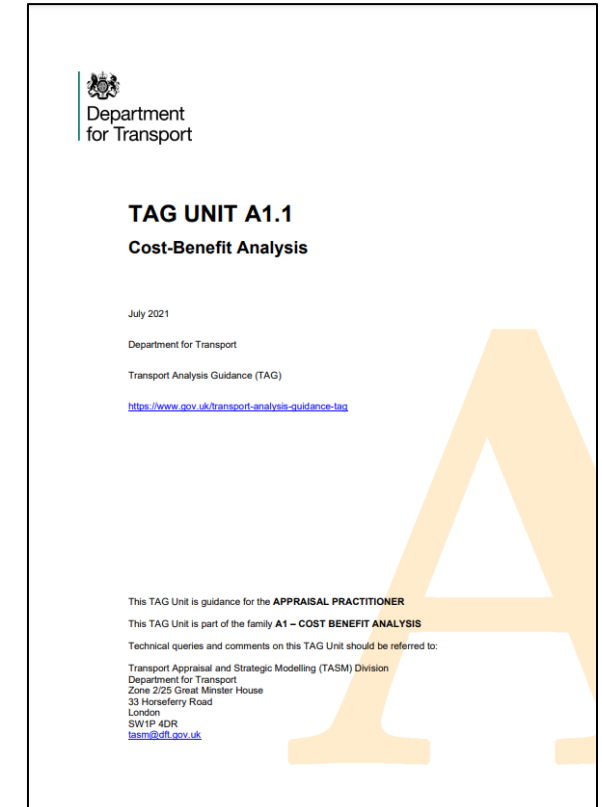
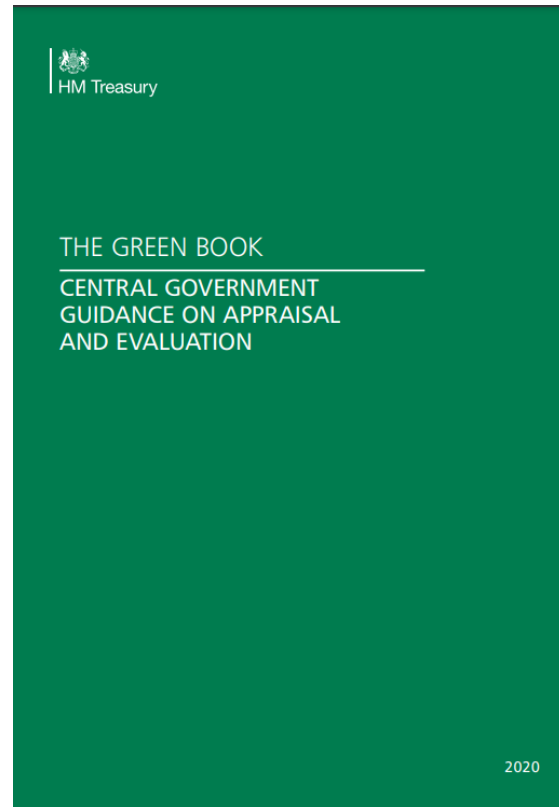
# What impacts can transport schemes have?

- Use theory of change to help identify impacts that the scheme will bring about
- Refer to TFDP guidance
- Explore TAG

Type of impact	Examples
Direct user impacts	<ul style="list-style-type: none"><li>• Journey time benefits</li><li>• Vehicle operating costs</li><li>• Journey ambience</li></ul>
Impacts to wider society	<ul style="list-style-type: none"><li>• Safety</li><li>• Environmental</li><li>• Other mode shift impacts</li></ul>
Wider economic impacts	<ul style="list-style-type: none"><li>• Agglomeration</li><li>• Land value uplift</li><li>• Employment impacts</li></ul>

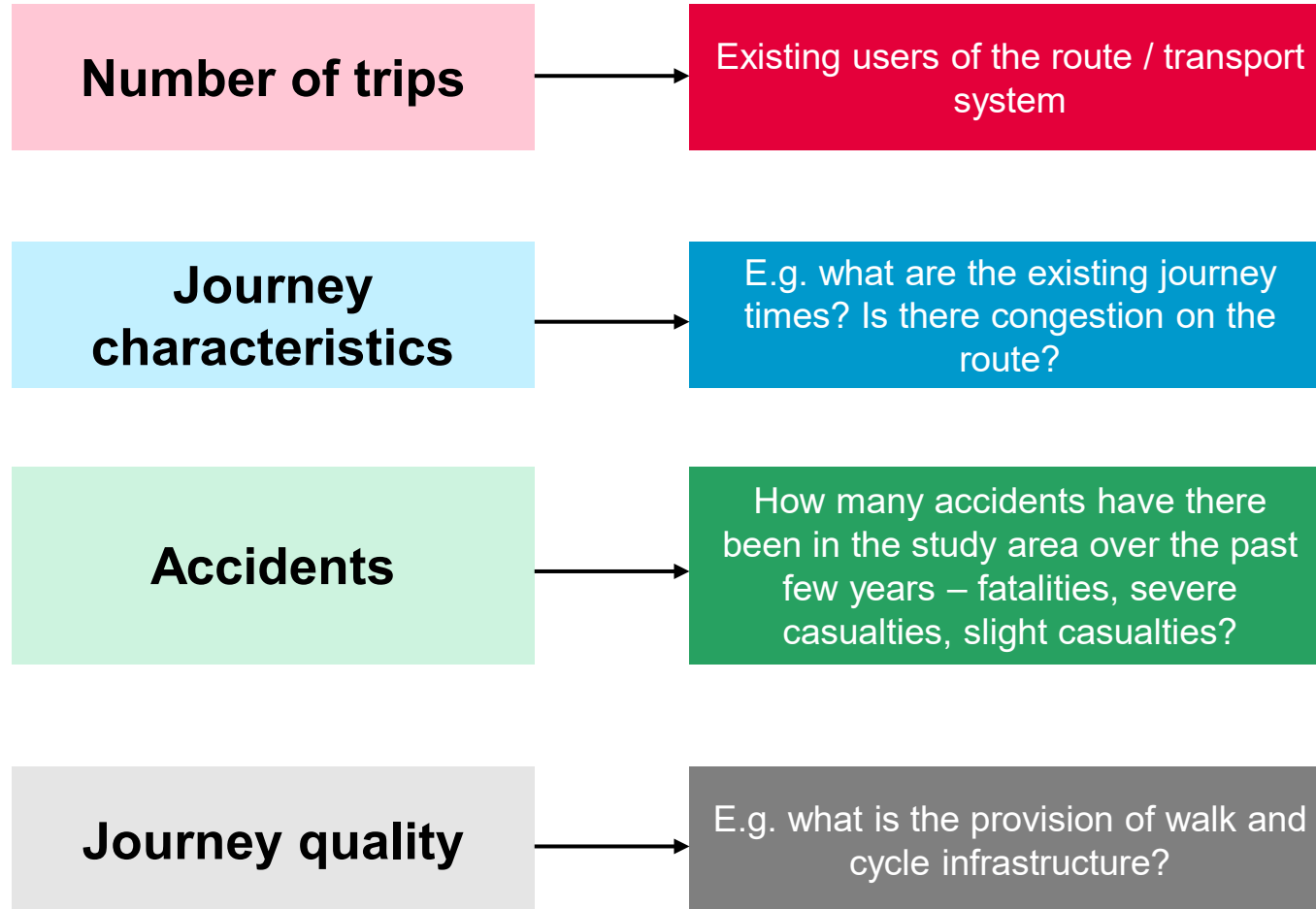
# Which impacts to measure?

- Is the required data/input available?
- How robust is your data/input?
- If you need to apply assumptions, how robust are they? Can they be supported by evidence/benchmark case studies?
- Which methodologies are available? How robust/established is the methodology?
- Is the methodology to be adopted recommended by the Green Book and supplementary guidance?



# Defining a baseline

# What do we need to consider for the baseline?





# Understanding baseline trip numbers

- Determine the number of trips for a base year using available data
- Need to then account for future growth – impact of changes to population, employment, development etc

Source	Comment
Trip counts	Manual counts of number of people / vehicles
Transport model	If available
Surveys	Own-commissioned or published
Estimate using data	E.g. census journey to work data

# Other baseline factors

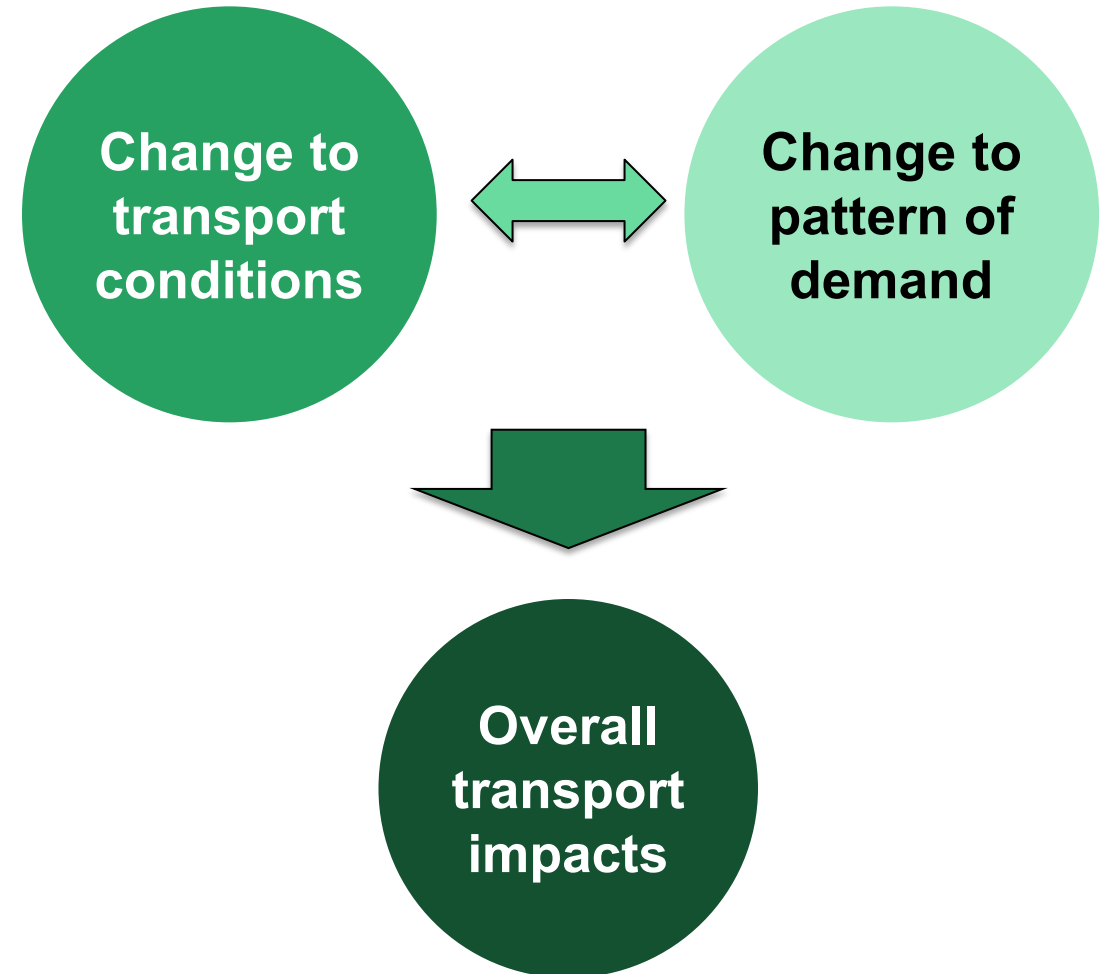
- General principle is to ensure that sources are as robust / evidence-based as possible

Baseline factor	Possible source
Journey characteristics	- Transport model - Observed data
Accidents	Published / collected data
Journey quality	- Observed information - <u>PERS</u>

# Estimating and quantifying transport impacts

# Determining the scale of change

- Approaches can include:
  - Transport modelling
  - Benchmarking / using evidence
  - Other modelling / assumptions



# Valuing the change

- TAG is the key source
- TAG Data Book provides values for lots of things including journey times, accidents, mode shift etc
- Can also make use of AMAT and Small Schemes Appraisal Toolkit where appropriate

Department for Transport  
**TAG Data Book**  
July 2021 v1.15

**Links:**  
Contents | Hide sheets | Unhide sheets | Protect sheets | Unprotect sheets

**Contact:** **N.B: Always unprotect for un hiding, and hide before protecting**  
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Department for Transport  
**Active Mode Appraisal Toolkit User Guide**  
Moving Britain Ahead  
May 2020

Policy paper  
**Small scheme appraisal toolkit user guide**  
Updated 11 June 2021

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### Introduction

The small scheme appraisal toolkit has been created to provide a proportionate method to monetise the impacts of small highway and bus improvement schemes. The toolkit should only be used for schemes where there is likely to be limited routing or variable demand impacts. Where there are expected to be sizeable routing or demand impacts it is recommended that an appropriate model together with [TUBA](#) are used to assess the scheme impacts in line with the guidance in TAG.

The toolkit can provide, for a scheme based on the forecast impacts in the scheme opening year, an estimate of the:

1. Present value of benefits (PVB).
2. Present value of costs (PVC)
3. Benefit cost ratio (BCR).

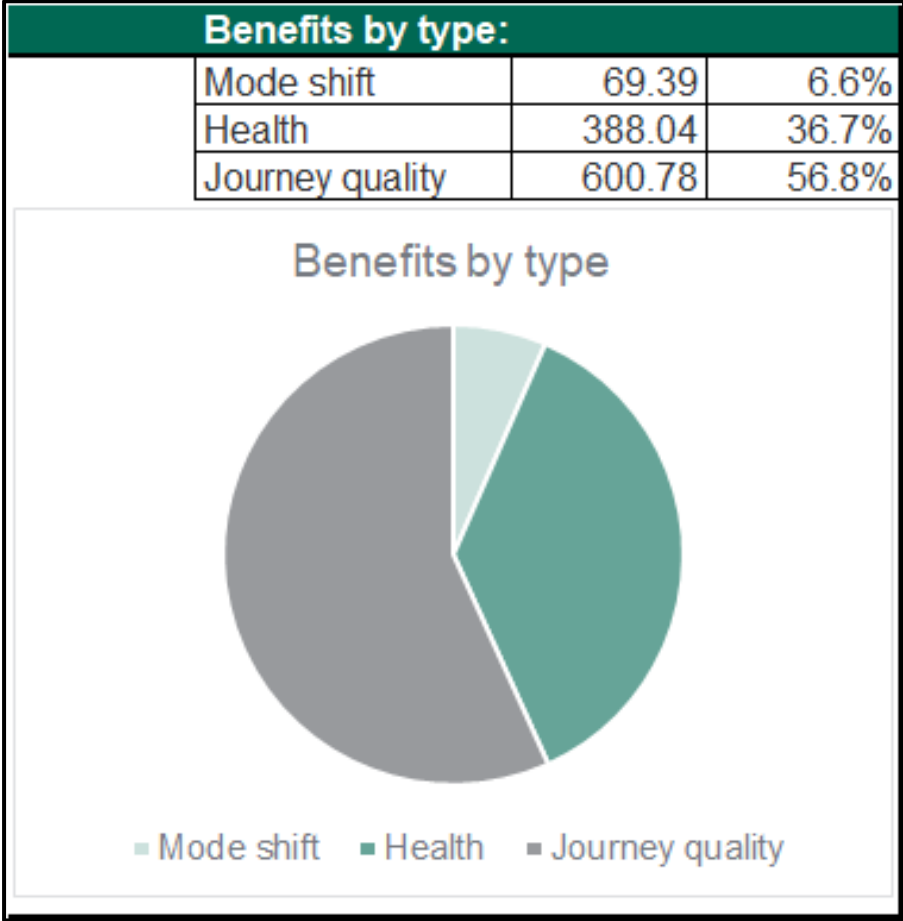
The impacts of the scheme, in terms of changes to journey times and journey distances, and level of user demand will need to be estimated outside the toolkit using observed and modelled demand information and outputs from assessment models or bespoke calculations. These can then be entered into the toolkit where they will be monetised and converted to appraisal period benefits.

# Example (1)

- Consider an active travel scheme that is intended to encourage shift from car to cycle through provision of a new segregated cycle lane – to be completed in 2023. Key impacts identified are improved health, benefits associated with reduced car use and improved journey quality
- Counts from 2018 suggest there were 500 cyclists a day on average. Past growth has been c. 3% a year, so the base position as of 2023 is assumed to be 580 cyclists a day
- An evaluation report for a similar scheme suggests that it increased demand by 10%. So the 'with scheme' demand is assumed to be  $580 + 58 = 638$

# Example (2)

- We are unsure how many of the additional cyclists are likely to have previously been using car, so we keep the default AMAT assumption of 19%
- We enter the base & new demand into AMAT, and select 'segregated cycle lane' from the list of possible interventions
- AMAT now gives us a value of monetised benefits under several categories, amounting to just over £1m of benefits



# Sensitivity tests

- Good practice to undertake some sensitivity tests in the economic case
- What happens if you change assumption x, y or z?
- E.g. lower baseline demand, different mode shares
- Can also apply a 'switching values' approach – how much would an assumption need to change by to reach a particular threshold / target?





**Thank you & questions**

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