





Our transport networks and services are vital to the way we lead our lives and the success of our economy. We benefit from a substantial transport system, built up through investment over many years, in response to evolving challenges and opportunities. This system enables us to enjoy a higher standard of living by connecting us with jobs, business opportunities, friends, family and leisure activities. In simple terms, the better our transport system, the more of our lives we can spend being productive and doing the things we enjoy, with the people we care about, in a better environment.

The **transport appraisal process** is used for the complete spectrum of schemes, from smaller-scale sustainable travel initiatives and minor urban transport improvements through to large national-scale infrastructure projects. It is used to identify problems and opportunities and to select the best investment option, providing the necessary analysis at each stage in the decision-making process.

## Why is transport investment required?



Department  
for Transport



Transport Appraisal and Strategic  
Modelling Division

Decisions are based on assessing the case for intervention for each of the five cases.

The **economic** analysis supporting a business case uses the HM Treasury Green Book method of cost-benefit analysis. This assesses the value of a transport project by weighing the benefits against the costs to indicate whether it is value for money.


This approach is nationally and internationally recognised as the best way to assess the value for money of transport projects.



We use a '**5 Case Model**'. This means that the decision on whether or not to invest in a transport project – the business case – is considered from five perspectives:

## How do we decide on the best investments?

So what have appraisals told us?



© Supated/Alamy

### Sustainable Travel Town evaluation

These initiatives were found to provide very high value for money, with the majority of benefits attributable to the **health** benefits of walking and cycling.

### Smart Cities

Smart initiatives such as in Bristol have seen increased use of technology in the transport and energy sectors. The environmental impacts on **carbon** and **air quality**, among others, are included in the appraisal.

### Crowding relief

Public transport schemes aimed at reducing crowding provide a benefit to users who may travel in a more comfortable ambience and more likely to be seated. These are **journey quality** benefits.

### Managed motorways and hard-shoulder running

These interventions effectively increase road capacity and generate resulting **time savings** to users. They also decrease the number of incidents and hence realise **reliability** benefits.

Decisions are taken weighing up all of these factors.

Many of these impacts can be given a money value and directly included in the monetary assessment of the value for money of a scheme.



It's certainly not just about money and saving people time.

A wide spectrum of impacts is considered in a detailed appraisal, including various impacts on the **economy**, the **environment** and **social welfare**.

## What impacts do we cover?

How do we measure the impacts?

**Direct economic and social impacts** are measured by calculating the change in real and perceived costs of a journey (in time and money) as a result of an intervention across the population. If journey times are cut by ten minutes, we can value this. Also, where people change behaviour, such as shifting from the car to a train with comfortable seats, they have changed because it is of greater value to them and we can measure these benefits too. We also value attributes of the journey experience, such as travelling in less crowded conditions or increasing safety through improved cycling infrastructure.

Transport primarily enables economic activity (rather than creates it itself). Improving transport connections can boost firms' productivity and can facilitate interactions between different firms in a way that boosts productivity. We value these as **wider impacts**, including the effects of agglomeration, labour market participation and enabling the move to more productive jobs.

**Environmental impacts** are valued in different ways – e.g. air quality and noise impacts are monetised using information about how much people are willing to pay to avoid illnesses associated with poor air quality or annoyance from noise generated by transport. Carbon values are determined so they are consistent with Government's carbon reduction targets. Landscape impacts are considered using a set of qualitative indicators to describe what contributes to landscape character. It may be difficult to assign precise values to such qualitative factors. However, they are given equal prominence in the economic case and when scheme impacts are reported to decision-makers.



# Valuing the impacts of transport investment

## Objectives

What do we want our scheme to deliver, and what do we wish to avoid?

**Increase productivity, jobs and growth**

COST SAVINGS  
REGENERATION  
WIDER IMPACTS  
RELIABILITY

**Improve and preserve the environment**

AIR QUALITY  
TOWNSCAPE  
NOISE  
HISTORIC ENVIRONMENT  
GREENHOUSE GASES  
WATER ENVIRONMENT  
LANDSCAPE  
BIODIVERSITY

**Improve happiness, health and wellbeing**

ACCIDENTS  
ACCESSIBILITY  
PHYSICAL ACTIVITY  
SEVERANCE  
SECURITY  
PERSONAL AFFORDABILITY  
JOURNEY QUALITY  
OPTION VALUES

## Scheme options

What sorts of options might we consider to improve the problems or exploit the opportunities?

**Relieving congestion**



**Increased capacity**



© Hitachi

**Smarter choices**



© BlueMoon Stock / Alamy

**Improve connectivity**



**Improve town centres**



© Peter Barritt / Alamy

## Impacts

What impacts will there be as a result of this scheme?

Change in journey quality

Quicker, more reliable journeys

Changes in travel patterns

Changes in crowding

Changes in emissions

Change in mode of travel

Change in walking and cycling use

Changes in accidents

Change in accessibility

Change in the urban environment

## Outcomes

What are the outcomes and what do they mean for the economy, environment and social wellbeing?

### ECONOMY

- Time spent on more productive tasks
- Improved access to customers and suppliers
- Wider impacts on the economy through business agglomeration
- Allows regeneration of area

### ENVIRONMENT

- Reduced local air pollution from more optimal car use
- Reduced carbon emissions
- Less noise pollution
- Potential detrimental impact on local landscape that requires mitigation

### SOCIAL

- More comfortable journeys
- Improved health from physical activity
- Improved accessibility for vulnerable transport users
- Increased accidents may require mitigation through scheme design

## Using analysis to appraise options and facilitate investment decisions

In considering the options, it is essential that decision-makers have the fullest possible information about the impacts each option could deliver and how those impacts would align with their objectives. This is necessary to ensure both the best value for money in the spending of taxpayers' money, and that all the pros and cons for different people are given full consideration.

**Why might we need to invest in transport?**

What problems or opportunities are faced?

What do we want to achieve?