

# Major Transport Scheme Appraisal An Overview

Alan Brett

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# Introduction

- Director of Atkins
  - 30+ years experience of major scheme appraisal
  - Parish councillor & vice chair
  - Chair of community bus team
  - Heritage railway volunteer
- ...a range of perspectives...



ATKINS



# Structure of presentation

Appraisal basics

WebTAG

Stages of the process

The Appraisal Summary Table (AST)

Modelling

Key 'drivers' of appraisal

Key 'absentees' from appraisal

How it works in practice



# Transport 'scheme' appraisal

Supports the decision making process

Explains the effects (impacts) of different solutions (interventions) – focus on changes/differences

Provides evidence for the business case

- Strategic – case for change, policy fit
- Economic – UK plc, value for money
- Financial – funding and accounting
- Delivery – implementation plan, engagement, risk
- Commercial – financing, risk allocation

# How appraisal works

## WebTAG - DfT

- Web based Transport Appraisal Guidance

Defines the process for appraisal

Identifies appropriate tools

Provides key parameters

Ensures consistency

...provides guidance – not rules – but ...



# WebTAG – the process



# Stages of the process

## Option generation

- Initial design and appraisal of options
- Early evidence – Strategic Outline Business Case (SOBC)
- Options Assessment Report (OAR) – short-listing for further analysis

## Detailed analysis of preferred options

- Appraisal Specification Report (ASR)
- Detailed design and full appraisal
- Appraisal Summary Table (AST)
- Outline Business Case (OBC)



# Stages of the process

## Preferred option

- Review/update design
- Review/update appraisal
- Final Business Case (FBC)

## Implementation - monitoring and evaluation

- Delivery according to plan?
- Is intervention delivering expected outcomes and objectives?





# The AST (appraisal summary table)

- **Economy** – users, regeneration, wider impacts
- **Environmental** – noise, air quality, greenhouse gases, landscape, townscape, historic, biodiversity, water
- **Social** – journey times, reliability, physical activity, accidents, security, access to services, severance, affordability
- **Public accounts** – costs and tax revenues

Monetised or quantified where possible, otherwise a qualitative assessment – driven by modelling...



# Transport modelling - inputs

- Travel demand – activities and land use
- Travel supply – network and services
- User choices – concept of ‘generalised cost’
- User groups – aggregation and averages
- External factors – trends – e.g. GDP growth, car ownership...
- Detailed guidance in WebTAG

...‘WebTAG compliance’...



# Transport modelling - process

- Base year model – representation of ‘today’ - calibration and validation
- Reference or do-minimum case – what would happen anyway
- Do-something cases – what happens with modelled intervention
- Appraisal examines changes from reference case
- Modelled changes limited to modelled attributes

...model processes well understood – issues arise from inputs to models...



# Transport modelling - outputs

- Volumetric data – person, passenger and vehicular flows
- Network performance – travel times, congestion (delays and queue lengths)
- Inputs to economic assessment tools
- Inputs to environmental assessment tools - noise, air quality, greenhouse gases
- Inputs to social impacts tools – distributional analyses

...modelling drives much of the appraisal...



# Key 'drivers' of appraisal

- **Economy** - Travel time changes tend to drive economic impacts
- **Environment** – traffic flows drive noise, air quality and greenhouse gas impacts
- **Social effects** – accessibility, severance, environmental impacts
- **Land take** – environmental and social impacts
- **Intervention costs** – capital and revenue



# Key 'absentees' from appraisal

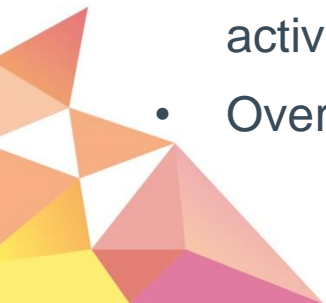
- Travel reliability – journey time variability
- Individual behaviour – effects of aggregation and averaging, how people use and value time
- Crowding on public transport – included in some rail models
- Seasonal effects – impacts on demand and supply
- Impacts of new technology – intelligent mobility

...land use and transport interaction is often missing – but not in Cambridgeshire!

# Example – high quality bus (BRT)

Model shows transfer from car to bus plus increased travel overall:

- Reduced traffic – environmental benefits (noise, air quality and greenhouse gases)
- Reduced highway congestion – travel time benefits, may be partially offset by release of suppressed traffic
- Improved accessibility, especially for non-car users – social benefits
- Increased use of bus mode – health benefits due to increased physical activity
- Overall increase in travel – wider economic benefits



# Example – Park and Ride

Model shows some car users divert to P&R site with small increase in travel overall:

- Increase in traffic in immediate vicinity of P&R site – environmental impacts (local noise and air quality)
- Reduced traffic in urban area – environmental benefits (noise, air quality and greenhouse gases), social benefits (severance)
- Reduced highway congestion overall – travel time benefits, may be partially offset by release of suppressed traffic
- Land take – environmental impacts (landscape, biodiversity, water)
- Overall increase in travel – wider economic benefits





# Example – Park and Ride

Hinterland	Traffic now	Add P&R	Divert traffic	New traffic
Rural	1500	1500	1500	1600
P&R site		300	400	500
Urban	1500	1200	1200	1200
Town/City				



# Summary

- Appraisal process a requirement of DfT
- Process well defined by WebTAG – provides tools and detailed guidance
- Appraisal a comparative process – focus on change from ‘what would happen anyway’
- Much of appraisal driven by transport modelling
- Transport modelling limited to attributes represented in the model



# Discussion

For further information see WebTAG guidance for the senior responsible officer:

<https://www.gov.uk/government/publications/webtag-tag-guidance-for-the-senior-responsible-officer>

The End