

Broadening Transport Appraisal

ITF Roundtable Report

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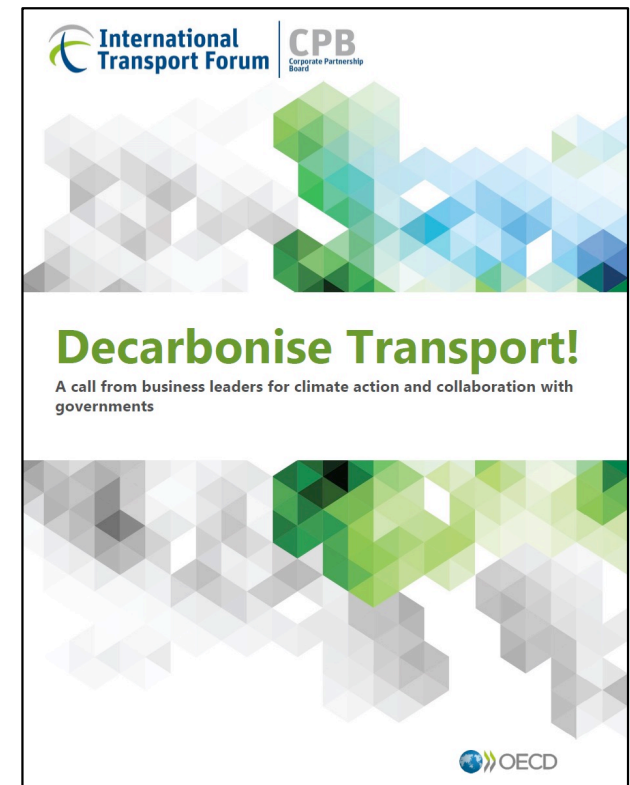
Roundtable context

- ▶ Widespread recognition that the objectives of transport policy have changed significantly
 - ▶ Traditionally, the focus was on mobility, travel time savings
 - ▶ Now, an increasing number of objectives, and broadening scope
 - ▶ Priorities are also changing
- ▶ How should appraisal practice change as a consequence?
 - ▶ To ensure appraisals systematically assess the performance of potential projects against **all** relevant policy objectives



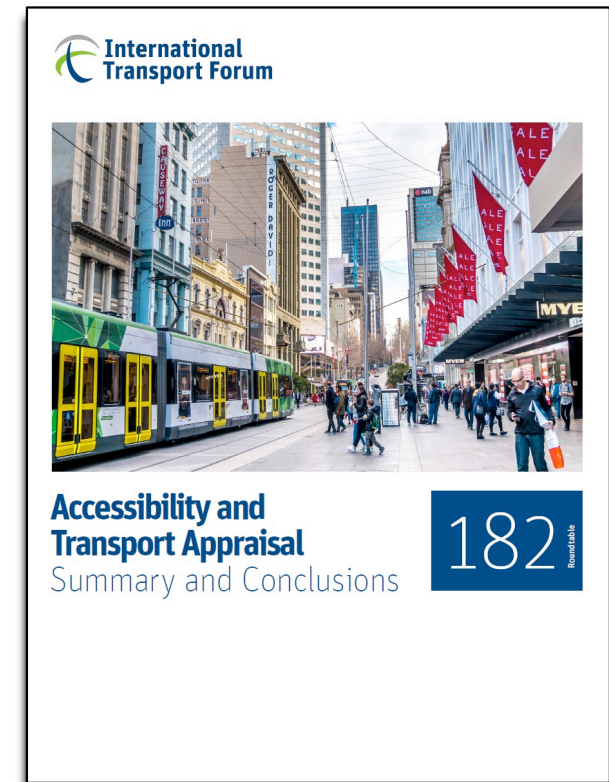
How are the objectives of transport policy changing?

- ▶ ***Decarbonising transport*** is an essential component of countries' broader responses to climate change
 - ▶ Transport emissions were 27% of the US total in 2020 – the largest single component
 - ▶ Need to ensure CO₂ impacts of different options are fully assessed & appropriately valued
 - ▶ Clear implications for modal choices across the transport system as a whole



Accessibility for all

- ▶ Adopting an accessibility (vs mobility) perspective
- ▶ Greater focus on **equity of access** to transport services
- ▶ Importance of the distribution of accessibility gains
 - ▶ Ensuring minimum levels of accessibility for all
 - ▶ Transport equity measured in regional, social and (increasingly) gender terms
 - ▶ (Note ITF Gender Analysis Toolkit 2022)
<https://www.itf-oecd.org/itf-gender-analysis-toolkit-transport>



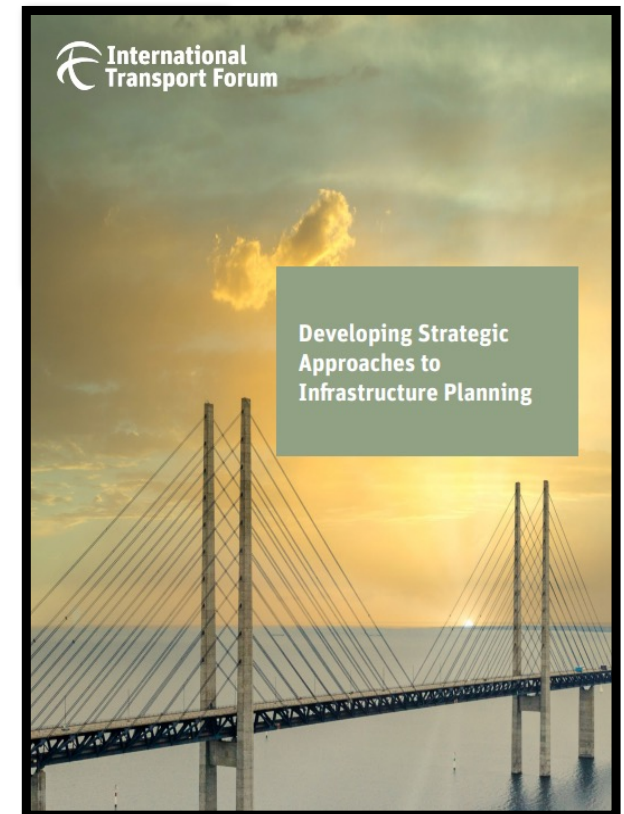
A broad urban policy agenda

- ▶ Better understanding of the health & safety implications of transport choices
 - ▶ Costs of noise & air pollution, collisions
 - ▶ Health benefits of active transport
- ▶ Focus on “liveability” & the allocation of urban spaces
 - ▶ Rational (opportunity cost) pricing of urban space – e.g. for roads and parking
- ▶ Understanding the interactions between transport & land use policy
 - ▶ *Forthcoming ITF RT Report: Urban Planning & Transport Behaviour (late 2022)*



Strategic infrastructure planning

- ▶ Infrastructure planning is becoming more strategically focussed
 - ▶ ITF (2021) recommends governments adopt strategic plans, based on identifying long-term objectives
 - ▶ Emerging role of independent advisory bodies documented & endorsed
- ▶ Need to bridge the gap between project-level appraisal and ensuring strategic objectives are systematically served



What are the broad implications for appraisal practice?

- ▶ The scope of appraisal must be broadened to ensure:
 - ▶ Impacts relating to all objectives are identified systematically & assessed accurately
 - ▶ Trade-offs and synergies are identified and understood
 - ▶ The results are communicated cohesively & intelligibly to decision-makers and stakeholders



How to modify appraisal practice to achieve this?

- ▶ Are fundamentally different appraisal methods needed?
 - ▶ Or should existing methods be modified and/or supplemented?
- ▶ Are there broader questions?
 - ▶ Should change extend beyond methods - to include decision models and processes?
 - ▶ How can we link individual appraisals with strategic policy objectives?



Cost-Benefit Analysis (CBA)

- ▶ Central to project appraisal for many decades. Key advantages:
 - ▶ Foundation in welfare economics – enables it to provide clear information on the relative welfare impacts of different options
 - ▶ Outcomes are expressed in terms of comparable metrics
 - ▶ These factors favour rational choice, in an often highly political decision environment
 - ▶ But CBA is criticised for its limited ability to address equity issues
 - ▶ More generally, CBA is said to downplay “what can’t be monetised”
 - ▶ Questions are also raised about very long-term assessments:
 - ▶ Does the use of discounting create a bias toward “short-termism”?
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Multi-Criteria Analysis (MCA)

- ▶ Some propose Multi-Criteria Analysis as an alternative
 - ▶ An “open-ended” and multi-dimensional method
 - ▶ Based on identifying all relevant objectives, assigning weights to each & assigning scores for each option against each criterion
- ▶ But it is criticised for arbitrariness in the assignment of both criteria weights and scores, thus being open to manipulation
- ▶ Its use is specifically rejected as an appraisal method in some countries (e.g. UK Green Book), or accepted only as an adjunct to CBA (Australia).




Improving CBA practice to address the criticisms

- ▶ Broadening the scope of CBA:
 - ▶ Progressively increasing use of indirect valuation methods (e.g. health impacts)
 - ▶ Incorporating intangible impacts (e.g. passenger satisfaction)
- ▶ Ensuring appropriate input prices are adopted (eg:, GHG)
- ▶ Including scenario analysis
 - ▶ To identify key uncertainties, and explore their potential impact




CBA and climate impacts – a key topic

- ▶ CBA's ability to address climate/environment issues recently reviewed in UK
 - ▶ Review concludes that CBA can address long-term environmental issues, including climate change, if appropriate input prices are used.
 - ▶ Concludes this is preferable to use of differential discount rates (in common with OECD 2009)
 - ▶ Major conceptual changes in shadow carbon pricing
 - ▶ New guideline values (UK, France) **based on need to achieve emissions reductions commitments (NDCs)**. Stern/Stiglitz also endorse this approach.
 - ▶ Much higher valuations result (e.g. GBP 280/tonne 2030 base case value in UK)
 - ▶ Expected to lead to major changes in project rankings, favouring less carbon-intensive modes
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Other possible improvements to CBA?

- ▶ Using distributional weights
 - ▶ Uniform value of travel time (cf., values based on wage costs)?
 - ▶ Inverse distributional weights (i.e. value accessibility gains to the least well off more highly)?
 - ▶ Possible use of valuation methods that distinguish between **consumer and citizen perspectives** where preferences regarding major public expenditures are concerned?
 - ▶ E.g., Participatory value evaluation (PVE), Deliberative monetary valuation (DMV).
 - ▶ Relatively untried to date, and criticised as departing from welfare economics principles
 - ▶ But recognise the “social” nature of preference formation on major issues
 - ▶ Further research may lead to wider use of these approaches
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Conclusions on analytical tools

- ▶ Expanded CBA should remain at the core of project appraisal
 - ▶ But significant improvements to current practice are feasible and desirable
 - ▶ Different analytical tools are needed to properly assess project impacts in different dimensions
 - ▶ Supplementing CBA results with accessibility & equity measures yields important additional information
 - ▶ Explicit analysis of impacts on achievement of strategic objectives is also needed
 - ▶ Recognise the long-term nature of major projects:
 - ▶ Update appraisals as project proposals evolve & available data accumulates
 - ▶ Maintain focus on the “needs case” – i.e., ensure the project continues to address identified objectives effectively
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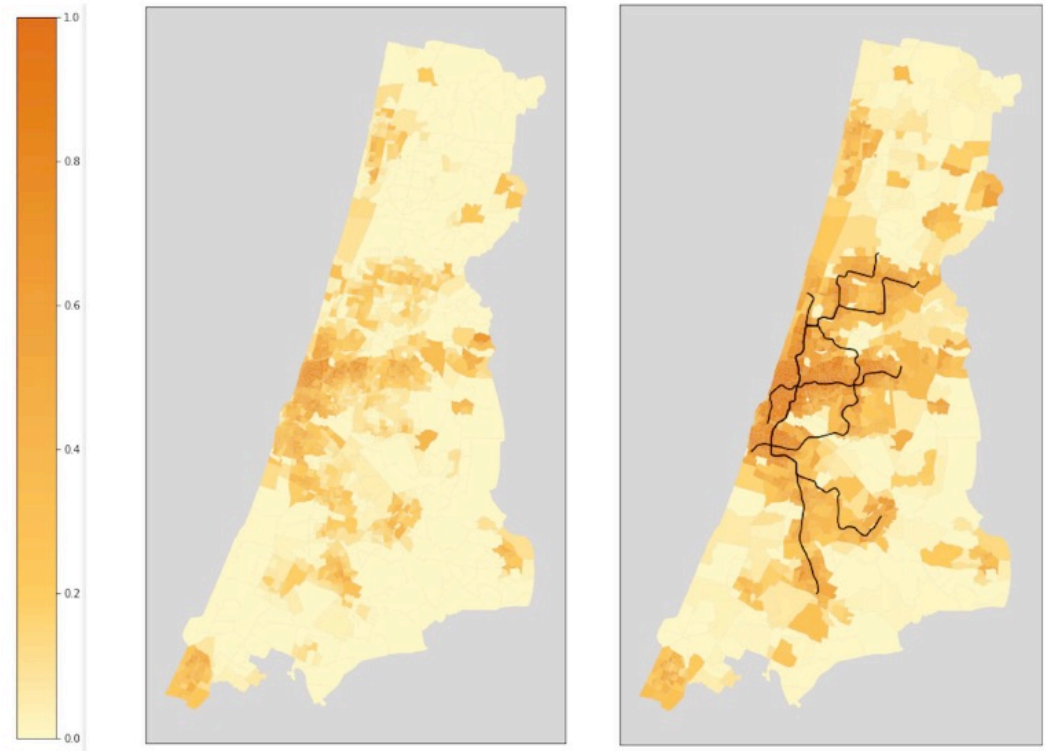
Communicating the results

- ▶ Effective presentation of the results of analyses is essential
 - ▶ For both decision-makers and stakeholders
 - ▶ Communication must be tailored to the audience
- ▶ Need for clear summary appraisal documents
 - ▶ Present impacts in relation to different objectives separately, to ensure transparency
 - ▶ Use figures, graphs, tables & other supporting tools



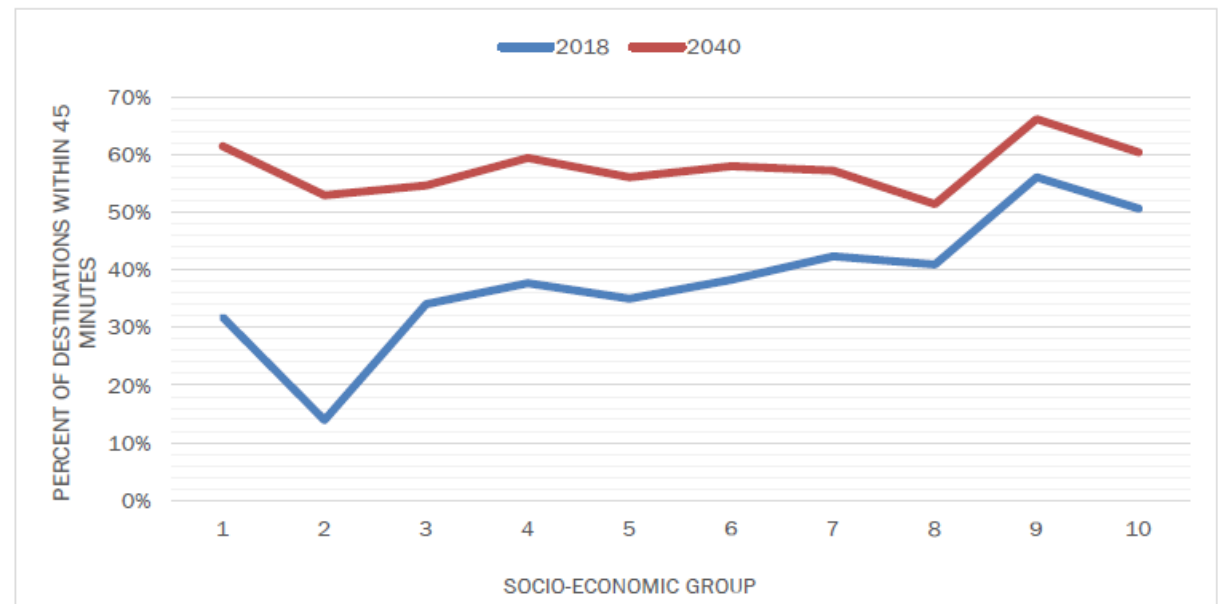
Example – presenting geographical accessibility impacts

- ▶ Figures summarise analysis of the estimated accessibility impact of a proposed transit system.
- ▶ Maps the impact on people living in each geographical zone
- ▶ Colour coding shows the average proportion of destinations accessible within 45 minutes



Example 2: Accessibility by income level

- ▶ The same data-set, analysed by socio-economic deciles.
- ▶ Shows clearly that the accessibility gains are widely shared
- ▶ But the largest gains accrue to those with the lowest initial accessibility levels.



Example of a summary appraisal table

Impacts	Summary of impacts	Assessment			
		Quantitative	Qualitative	NPV	Distributional (7pt scale)
Economic: Business users, transport providers, reliability impact, regeneration, WEBS					
Environmental: Noise, air, GHG, landscape, townscape, historic env., biodiversity, water					
Social: Commuters & other users, reliability impact, physical activity, journey quality, accidents, security, access, affordability, severance, option/non-use values					
Public accounts: Cost to transport budget, indirect tax revenues.					

Source: adapted from UK Webtag guidance



Appraisal and the wider transport planning context


- ▶ Significantly improved appraisal methods can and should be adopted.
- ▶ But a broader response to the changing transport planning environment is also needed, ***which covers the whole policy cycle.***
- ▶ Three key elements are:
 - ▶ Reforming the project identification process
 - ▶ Adopting a more fit-for-purpose decision model
 - ▶ Systematically using ex-post evaluation to improve future appraisal



Improving project identification processes

- ▶ Better appraisal only changes outcomes if the right projects are selected for appraisal
 - ▶ Hence, project identification practice must also respond to the changed set of transport planning objectives.
 - ▶ This means ***better framing problems*** to reflect the broader set of objectives, in the needs case, and identifying alternatives accordingly.
 - ▶ Need to ***take account of equity objectives from the outset***, as in other policy fields (health, education, housing)(Shiftan et al 2021)
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Improving project identification processes (2)

- ▶ Extensive stakeholder engagement is crucial to achieving broad support for decisions taken.
 - ▶ Especially as the expected result is a move away from a decades-long road infrastructure investment focus.
 - ▶ Ensuring project identification/appraisal supports the strategic objectives set out in infrastructure plans is also essential
 - ▶ Requiring appraisals to include ***explicit assessments of how proposals address strategic priorities*** (or conflict with them) is a key step
 - ▶ Portfolio-level reporting & analysis of progress on achieving strategic objectives is also needed
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Reforming decision processes

- ▶ Transport planning suffers from high failure rates – imposing major costs
- ▶ Complexity, uncertainty and stakeholder “veto rights” are major factors.
 - ▶ Technical limitations are one cause of such failures – and can be (partly) addressed through better processes/methods;
 - ▶ But uncertainty about behavioural variables (demand behaviour, stakeholder views over time) are partly beyond planners’ control
- ▶ A “fit for purpose” decision model must recognize these issues and respond appropriately
 - ▶ This renders a “decide-announce-defend” paradigm untenable



Reforming decision processes (2)

- ▶ A rational “cognitive”, multi-stage model helps to address these uncertainties:
 - ▶ Decisions are made progressively
 - ▶ “Feedback loops” enable decisions to be modified in light of new information
 - ▶ Stakeholder engagement occurs from the outset
 - ▶ When project objectives, constraints & problems, and “rules of the game” are agreed




Reforming decision processes (3)

- ▶ Effectively integrating ***technical assessment, process management & public engagement*** can help to:
 - ▶ Reduce the opportunity cost of ill-informed decisions
 - ▶ Expand coalitions, via effective stakeholder management
- ▶ The model arguably formalises some of the political elements of current decision processes, which are important but not explicitly acknowledged
 - ▶ Can be seen as “recognizing a more complex reality”.




Systematic use of ex post evaluation

- ▶ Evaluation can be a key means of improving ex-ante assessments, by:
 - ▶ Identifying sources of systematic bias
 - ▶ Identifying unanticipated impacts, potentially enabling their future inclusion
 - ▶ But insufficient, and unsystematic, use of evaluation has limited its practical value
 - ▶ Good quality evaluation requires:
 - ▶ a timely start (to capture “fleeting” data)
 - ▶ a sustained approach (to capture all effects)
 - ▶ independence of evaluators
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Recommendations

- Governments should develop ***long-term strategic infrastructure plans*** that explicitly identify transport policy objectives
 - ***Broaden project appraisal processes and practices*** to ensure they address all identified objectives of transport policy
 - Incorporate one or more ***accessibility indicators, or other equity measures***, in appraisals whenever equity issues may be significant
 - Provide detailed guidance on addressing climate change impacts. Clearly ***link shadow carbon prices and emissions reduction commitments***
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Recommendations (2)

- Present appraisal results in a ***transparent, summary format*** that can be readily understood by decision-makers and stakeholders.
 - Highlight the impacts on climate, inclusion and other key policy priorities
 - Focus reports to decision-makers on the results of the **needs-case** assessment and the summary appraisal document
 - Ensure decision processes for long-term infrastructure investments ***account for uncertainty and the need for broad stakeholder support***
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Recommendations (3)

- ***Integrate the three key elements*** of technical assessment, process management and public engagement into decision processes
- Undertake ***systematic ex-post evaluation*** for all major infrastructure projects entailing expenditure above an identified threshold level
 - Consider the merits of the ***permanent observatory model*** as means of maximising the quality of evaluation



Thank you

The Roundtable Report is now available for free download from the ITF website at:

<https://www.itf-oecd.org/broadening-transport-appraisal>

The other reports highlighted are also available

