

Response to the March 2020 review of the cost–benefit analysis methodology set out in the Infrastructure Australia Assessment Framework

Introduction

The *Infrastructure Australia Act 2008* (Cth), requires that Infrastructure Australia’s approved cost–benefit analysis (CBA) methodology (which is set out in the Infrastructure Australia Assessment Framework) is reviewed every two years. The review considers whether the methodology takes into account social, environmental and economic costs and benefits adequately.

The most recent review was undertaken by the Centre for International Economics (CIE) and was published in March 2020. It is available at:

www.infrastructureaustralia.gov.au/sites/default/files/2020-03/CIE%202020%20IAAF%20review%20report_0.pdf.

In this paper, we have presented the review’s findings and our responses.

Overview of the review’s findings

In the final report of this 2020 review, CIE stated that:

Overall, the current Assessment Framework CBA methodology is fit for purpose. We believe the guidance provides an accurate view of the steps for undertaking an unbiased and objective CBA.

The review found 11 areas where the methodology could be strengthened. Some of these findings were for consideration, while others were recommended for action.

We have responded in full or in part to all of the 11 findings as part of the development of the 2021 edition of the Assessment Framework. For two of the findings we have ongoing work to complete in addition to the progress we have already made.

Findings and responses

Finding 1: Specification of base case	
Description	<p>Consider accepting base case specification with future investment included, so long as the base case does not include investment which is either complementary to the project being evaluated or a major substitute to the project being evaluated.</p> <p>Conflicting jurisdiction and Infrastructure Australia (IA) guidance around the base case specification may duplicate analysis for proponents.</p>
Scope of finding	For consideration
Status of our response	Complete
Commentary	<p>Our review of jurisdictional guidance found that some jurisdictions accept a 'planning reference case', which includes projects that are committed to by government but not funded.</p> <p>Our recommendation remains that a 'committed and funded' do-minimum base case should be used. However, we have updated our guidance to accept a 'planning reference case' with a requirement that sensitivities be conducted to assess the impact of complementary or substitute projects. The guidance in the Assessment Framework notes that under the 'planning reference case' approach, there is a risk that projects that have been included may reduce benefits of the project in question. We have included examples to make the guidance clearer.</p>
Document references	Guide to economic appraisal Section 2.3
Finding 2: Capital cost treatment	
Description	Provide clarity around whether proponents should use P50 or P90 cost estimates, or which cost estimate is preferred by IA for the central case.
Scope of finding	Recommended
Status of our response	Complete
Commentary	<p>We continue to encourage proponents to provide a range of costing information with business case submissions. This reflects the inherent need to consider a range of risks and uncertainties in cost estimation processes.</p> <p>We have reviewed guidance across jurisdictions and found that jurisdictions generally encourage an expected value capital cost, but some request P50 and/or P90 values.</p> <p>We have clarified our guidance in the Assessment Framework to explain that we prefer the expected value for the central case and P90 as a sensitivity, but will accept P50 and P90 values to align with jurisdictional guidelines.</p>
Document references	Guide to economic appraisal Section 2.6

Finding 3: Quantifying land use impacts

Description	<p>The Assessment Framework provides guidance around the measurement of land use benefits and is open to wide interpretation. More prescriptive guidance and worked examples are recommended.</p> <p>Post completion review guidance should be updated with respect to the data collection required to measure actual land use impacts.</p>
Scope of finding	Recommended
Status of our response	Ongoing (in coordination with Australian Transport Assessment and Planning guidelines)
Commentary	<p>Infrastructure Australia took a leading position to provide best-practice guidance on the estimation of land use impacts and their quantification in business cases in the 2018 publication of the Assessment Framework.</p> <p>The Australian Transport Assessment and Planning (ATAP) guidelines <i>O8 Land-use benefits of transport initiatives</i> is expected to be published in July 2021 with detailed guidance on land use impacts. As a member of the ATAP Steering Committee, we contributed to this work and the 2021 edition of the Assessment Framework aligns with this updated guidance.</p> <p>An update of post completion review guidance with respect to the data collection required to measure realised land use impacts will be considered once the ATAP guidance has been finalised.</p> <p>Opportunities include further enhancement of our post completion review guidance, potentially drawing on an update of ATAP <i>F7 Review and Post Completion Evaluation 2016</i>, which is due for revision in 2022.</p>
Document references	<p>Guide to economic appraisal</p> <p>Section 2.5, Appendix C, Appendix D</p>

Finding 4: Place-based guidance

Description	Provide specific guidance and worked examples for the evaluation of place-based projects.
Scope of finding	Recommended
Status of our response	Complete
Commentary	<p>We have developed new guidance for program business cases in our Guide to program appraisal, which includes place-based programs that aim to coordinate the planning and delivery of infrastructure within a defined place to improve overall outcomes. This guidance defines different types of programs, the consideration of individual projects that form a program, how programs should be assessed, and their relationship with project business cases.</p> <p>This is a developing area of work, and the Assessment Framework will be supplemented in the future with additional content in response to emerging practices as we engage further with relevant stakeholders.</p>

In addition, we accept the inclusion of benefits relating to 'place characteristics', such as liveability and amenity, in the detailed assessment and cost-benefit analysis of proposals for all relevant proposals. Where these are included, there should be robust evidence to justify their inclusion.

Document references

Guide to program appraisal

Finding 5: Equity and distributional impacts

Description

Provide greater guidance around assessing equity and distributional impacts, including whether CBA is the appropriate tool for this, or remove references to distributional and equity impacts in the Assessment Framework.

Scope of finding

Recommended

Status of our response

Complete

Commentary

CBA has limited ability to highlight how a proposal is likely to impact equity and distributional outcomes. We have provided additional guidance in the Assessment Framework on the equity and distributional impacts of projects, and how these should be considered. This includes descriptive and distributional analysis to link impacts to user groups. We do not recommend the use of weighted CBA, due to the subjectivity this introduces into the analysis.

We have also provided references to relevant guidance for technical analysis. ATAP is also developing further guidance on equity and distributional impacts, which we will draw on, as appropriate, once it is complete.

Our assessments will consider equity and distributional impacts (where they have been considered) as part of the merit of proposals, primarily through the Strategic Fit criterion, and we have reaffirmed our requirement for evidence to support any claimed impacts.

Document references

Overview

Sections 2.5, 4.2, 4.3

Guide to economic appraisal

Section 2.7

Finding 6: Changes to supporting guidelines

Description

Future versions of the Assessment Framework should incorporate revisions from the supporting guidelines, such as ATAP guidelines for transport initiatives.

Scope of finding

Recommended

Status of our response

Complete

Commentary

The 2021 Assessment Framework provides references to the most recent guidance from jurisdictions and sector-specific sources.

Document references

Guide to economic appraisal

Finding 7: Climate change and resilience

Description The Assessment Framework provides guidance around climate change risks. There is an opportunity to enhance this with guidance on designing and planning infrastructure, in response to the impacts of climate change.

Provide additional guidance around measuring the resilience of infrastructure.

Scope of finding Recommended

Status of our response Ongoing

Commentary Infrastructure Australia and the other infrastructure advisory bodies now coordinate on this issue at an annual workshop to understand how governments and industry consider hazard risk, with a view to embedding a system-wide view of resilience in infrastructure planning and decision-making. A key objective is to create, locate or facilitate an agreed set of climate futures and associated common planning assumptions, which do not yet exist. The workshop identifies gaps in the consideration and application of climate scenarios within CBA, risk assessments, business case assessments and pre-existing infrastructure assessment approaches.

Infrastructure Australia also sits on the steering committee of the Resilience Valuation Initiative. This initiative aims to advance an accepted process and enabling methodologies for understanding the value of a resilience-building asset, feature or activity.

We have also included resilience as a specific assessment theme within the Assessment Framework to explicitly recognise the resilience benefits of infrastructure. This includes additional guidance on considering resilience at each progressive stage of project development, how to ensure consistent application and understanding of climate risk, and detailed technical guidance for analysing and valuing infrastructure resilience (including through scenario and real options analyses).

Document references **Overview, Stages 1-3**
Guide to risk and uncertainty analysis
Section 5

Finding 8: Discount rates

Description IA should consider whether the current discount rates in the Assessment Framework are appropriate given reductions in the cost of capital in financial markets and for regulated utilities.

Scope of finding For consideration

Status of our response Complete

Commentary Infrastructure Australia has engaged the treasuries of the Commonwealth and the states/territories for their views, and assisted the Commonwealth Treasury in their assessment of if and how social discount rates should be adjusted.

We await further guidance to determine changes for the Assessment Framework and will update our guidance if necessary

to align with changes to the central discount rates used in national, state and territory guidelines.

To increase transparency, our business case evaluations now present CBA results using a discount rate of 7% for the central analysis, and sensitivities with 4% and 10% where this has been provided by proponents.

Document references

Guide to economic appraisal

Sections 2.4, 2.10

Finding 9:

Uncertainty

Description

The previous review of the Assessment Framework recommended ordering benefit and cost items by certainty. This would help stakeholders better focus their efforts around quantifying less speculative benefits.

Scope of finding

Recommended

Status of our response

Complete (partial acceptance)

Commentary

The certainty of the estimation of benefits is likely to vary based on the maturity of methodologies and the degree to which benefits are directly linked to the intervention. However, there are no standard measures of the certainty that these benefits will be realised.

We have expanded our guidance to clarify that when presenting CBA results, benefits should be presented as separate line items, so that readers can better understand the contribution of benefits and the impact of uncertainty. We also recommend that both land use benefits and wider economic benefits are presented separately 'below the line'. This approach should similarly be adopted for any other benefits where measurement methodologies are still maturing.

We have also provided expanded guidance on the treatment of uncertainty during project appraisal in our **Guide to risk, uncertainty and sensitivity analysis**.

Document references

Guide to economic appraisal

Sections 2.5, 2.10

Guide to risk and uncertainty analysis

Finding 10:

Delay/deferral

Description

The Assessment Framework should require all projects to include a sensitivity test for deferring the project.

Scope of finding

Recommended

Status of our response

Complete

Commentary

We agree that there is merit in testing the desirability of proceeding with some projects immediately. We have added a recommendation, rather than a requirement, for a deferral test for

proposals where the benefit–cost ratio is marginal (less than 1.2) or where the first year rate of return is low.

Document references

Guide to economic appraisal

Section 2.9

Guide to risk and uncertainty analysis

Section 3.3

Finding 11:

Measurement of consumer surplus

Description

Consider providing detailed information around measuring consumer and producer surplus, including technical guidance, graphs and equations.

Scope of finding

Recommended

Status of our response

Complete (partial acceptance)

Commentary

The value of additional technical guidance needs to be weighed against providing simplified and streamlined guidance. Details on the measurement of consumer surplus is already provided in more technical guides and it is not the intention of the Assessment Framework to repeat guidance that is available elsewhere. Therefore, we have provided an outline of the approach in our **Guide to economic appraisal** and provided additional guidance on induced demand. However, our primary focus is to refer readers to *ATAP Guidelines T2 Cost-Benefit Analysis* (Step 6), which covers these issues in depth, as well as relevant jurisdiction and sector-based guidance that is available.

Document references

Guide to economic appraisal

Section 2.1