

Implementation of NSW Government Business Case Guidelines and Carbon Emissions: New Requirements for Cost-Benefit Analysis of Transport Projects

February 2025

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1. NSW Business Case Guidelines

On 29 November 2024, NSW Government released the new [Business Case Guidelines \(TPG24-29\)](#). It establishes mandatory requirements and guidance to assist agencies in the preparation of business cases. They form part of the NSW Government Investment Framework and include changes to streamline and simplify business case development. The updated guidelines support a risk-based scalable approach and includes resources and templates to help build business case capability within agencies and reduce reliance on external stakeholders. There are four types of business cases under NSW Treasury (2024a) Business Case Guidelines.

- Full Business Case
- Preliminary Business Case
- Lean Business Case
- Short Form Assessment

This document provides guidance for Transport Cost Benefit Analysis to meet the new requirements under the NSW Business Case Guidelines (TPG24-29). It forms part of TfNSW (2024) [Cost Benefit Analysis Guide Ecosystem](#).

[Economic Advisory](#) within the Investment and Assurance Branch provides case-by-case advice on economic appraisal, financial appraisal, and cost benefit analysis. This guide is applicable to all new Economic Appraisals starting from December 2024.

2. Cost Benefit Analysis (CBA) under New Business Case Guidelines

Cost-benefit analysis (CBA) is the preferred evaluation method of the NSW Government and aims to measure the full impacts (including economic, social, environmental and cultural) of a decision on the NSW community. CBA is the preferred method for assessing the relative merit of proposed government initiatives. Its importance is emphasised in the new Business Case Guidelines. It is a mandatory requirement for full, preliminary and lean business cases. The CBA is also known as Economic Appraisal.

2.1 Introducing Three Levels of CBA

A Transport CBA should be fit for purpose as a tool for investment decision-making. The level of detail expected to be included in a CBA should be proportionate to the proposal cost, risk and how close it is to investment decision.

NSW Treasury (2024a) Business Case Guidelines (TPG24-29, Section 1.8, Table 2) provides an overview of the expected development level of a CBA for different stages and types of business case. It should be noted that what is suggested in the Business Case Guidelines is a minimum viable product.

Under the previous NSW Treasury (2018) *NSW Government Business Case Guidelines* (TPP18-06) and NSW Treasury (2022) *Submission of Business Cases* (TPG22-04), a full economic appraisal was required at both Gate 1 Preliminary and Gate 2 Full Business Case stages.

Under the NSW Treasury (2024a) *Business Case Guidelines* (TPG24-29), three levels of CBAs are introduced:

- Conceptual Economic Assessment
- Preliminary CBA
- Comprehensive CBA

Three levels of CBA reduce requirements on the level of detail and analysis for Tier 1 and Tier 2 projects at the Gate 1 preliminary assessment stage. They also change the need for preparing a CBA for Tier 3 and 4 projects at the Gate 1 preliminary assessment stage. Table 1 maps the level of CBA required for each investment stage (Gates 0-2) for Tiers 1 to 4 and business case types (Go/No Go Strategic Assessment, Preliminary Business Case, Full Business Case, Lean Business Case and Short Form Assessment). These requirements are shown for both the previous and new business case regimes.

Table 1: What type of CBA is most appropriate?

Tier & Stage & Threshold	Stage 0	Stage 1	Stage 2	Combined Stages 1 & 2	Combined Stages 0, 1 & 2
	Strategic assessment (Go/no-go)	Gate 1 Preliminary Business Case	Gate 2 Full Business Case	Lean Business Case	Short-form assessment*
	Recurrent: Over \$100m, Tiers 1&2 Capital: Over \$20M, Tiers 1&2 Digital: Over \$10M, Tiers 1&2			Recurrent: \$20-\$100M, Tiers 3 & 4 Capital: Over \$20m, Tier 3 Digital: Over \$10m, Tier 3	Recurrent: \$10-\$20M Capital: \$10-\$20M Capital: Over \$20m, Tier 4 Digital: Over \$10M, Tier 4
New requirements					
Level of CBA under NSW Treasury (2024) Business Case Guidelines (TPG24-29)					
Tier 1	Conceptual Economic Assessment	Preliminary CBA	Comprehensive CBA	N/A	N/A
Tier 2	Conceptual Economic Assessment	Preliminary CBA	Comprehensive CBA	N/A	N/A
Tier 3	Conceptual Economic Assessment	N/A	N/A	Comprehensive CBA	N/A
Tier 4	N/A	N/A	N/A	N/A	Conceptual Economic Assessment **
Previous requirements					
CBA Requirements under previous NSW Treasury (2018) Business Case Guidelines (TPP18-06) and NSW Treasury (2023) Submission of Business Cases (TPG22-04)					
Tier 1	N/A	Comprehensive CBA	Comprehensive CBA	N/A	N/A
Tier 2	N/A	Comprehensive CBA	Comprehensive CBA	N/A	N/A
Tier 3	N/A	Comprehensive CBA	Comprehensive CBA	N/A	N/A
Tier 4	N/A	Comprehensive CBA	Comprehensive CBA	N/A	N/A

Notes: * A short-form assessment is not a business case. It is a short document that applies business case principles and concepts in a simplified format, suitable for low-cost proposals that fall under the relevant business case cost and risk thresholds. It is a mandatory requirement for Tier 4 projects.

** BCR and NPV estimates are recommended as this is the only stage that the project economic criteria are estimated for Tier 4 projects.

The main changes under the NSW Treasury (2024a) Business Case Guidelines (TPG24-29) are as follows:

- A Conceptual Economic Assessment is introduced for Gate 0, Go/No Go strategic assessment.
- A Preliminary CBA is required for a Gate 1 Preliminary Business Case for Tier 1 and 2 projects that streamlines the level of detail and analysis at the Gate 1 stage.
- For Tier 3 projects, only one CBA is required by combining CBAs at Gates 1 & 2.
- For Tier 4 projects, only one conceptual CBA is required through Gates 0, 1 & 2. A BCR and NPV may be required for Government investment evidence bank and transport outcome reporting purposes.

2.2 Analytical Requirements for Each Level of CBA

Conceptual Economic Assessment:

- The conceptual economic assessment should be limited to key points based on existing information and evidence.
- An economic assessment should be undertaken where benefits are identified, and qualitative and quantitative information is provided.
- A CBA summary is required if a conceptual level assessment is undertaken. The CBA summary should list high level project capital costs, operating costs, quantifiable benefits, and qualitative benefits. The CBA summary should be concise and limited to one or two pages.
- The estimate of BCR and NPV and provision of economic model are optional at Gate 0 stage. For Tier 4 project where conceptual economic assessment provides the only economic analysis in the project life cycle, a BCR and NPV estimate is recommended for investment evidence and transport outcome reporting purposes.

Preliminary CBA:

- The CBA should be completed with a basic level of detail and accuracy, that will be refined during the full business case.
- A preliminary level CBA will be less detailed and may include greater reliance on assumptions and less accurate costings compared to a comprehensive level CBA.
- All mandatory requirements of a CBA must be met. If a preliminary level CBA is undertaken, an economic model and an economic appraisal report are required for TfNSW economic concurrence review.

Comprehensive CBA:

- A complete and comprehensive CBA should be undertaken to support informed decision making.

- All mandatory requirements of a CBA must be met including an unlocked formula driven economic model and a comprehensive economic appraisal report for TfNSW economic concurrence review and other funding reviews by NSW and Federal Government agencies.

Table 2 provides details of analytical requirements for conceptual economic assessment, preliminary and comprehensive CBAs:

Table 2: Analytical requirements of transport CBA

Analytical components	Conceptual Economic Assessment	Preliminary CBA	Comprehensive CBA
Cost estimate	Order of magnitude estimates of costs, e.g. based on past projects	Less accurate, e.g., global estimate	Detailed, e.g. 100% concept design estimate
Benefit estimate	Benefits and beneficiaries identified, qualified, or quantified.	Quantified	Quantified
Transport modelling	Not required	Required for strategic modelling	Required for strategic and operating modelling
Economic appraisal report	A CBA summary	Required	Required
Economic model	Optional	Required	Required
Number of options	At least two realistic options should be assessed	A long list of realistic options	BCRs for at least two realistic options
Distribution analysis	Not required for Gate 0 Required for short-form assessment of combined Gates 0-2 of Tier 4 projects	Required	Required
Sensitivity analysis	Not required	Required	Required
BCR & NPV	Not required at Gate 0 Required for Tier 4 short-form assessment	Required	Required

3. Carbon Valuations in Cost Benefit Analysis

NSW and Commonwealth Governments are committed to achieving net zero emissions by 2050. On 20 December 2024, NSW Treasury published TPG24-34 the “Carbon Emissions in the Investment Framework” (NSW Treasury 2024d, 2024e). This sets out NSW Carbon Values to be used in business cases and economic appraisals for NSW Government investment programs. The framework requires all projects with an estimated total cost (ETC) of \$100m or above to use NSW Treasury carbon values, applied to both embodied and operating carbons.

In February 2024, Infrastructure Australia (IA) released a guidance note “Valuing Emissions for Economic Analysis” (Infrastructure Australia, 2023, 2024). This sets out National Carbon Values to be used in business cases for IA Stage 1-3 submissions which seek to be considered on the national Infrastructure Priority List (IPL) and for Commonwealth funding.

To comply with NSW Government carbon emission requirements, all business cases from January 2025 should incorporate carbon valuation in project economic appraisals. The carbon evaluations are to be undertaken according to the following three categories:

1. For Federal and NSW jointly funded projects with an Estimated Total Cost (ETC) of \$100m or above, two BCRs should be presented:
 - a) A core BCR using NSW Carbon Values applied to both embodied and operating carbon.
 - b) A core BCR using National Carbon Values applied to both embodied and operating carbon.
2. For NSW funded projects with an Estimated Total Cost (ETC) of \$100m or above, the core BCR should use NSW Carbon Values applied to both embodied and operating carbons.
3. For projects with an ETC of less than \$100m, NSW Carbon Values should be used for BCR calculation applied to both embodied and operating carbons, however a valuation of embodied carbons is optional.

4. CBA for Fast Tracked Projects

NSW Treasury (2024b) [*Fast Track for Business Case and Assurance \(TPG24-30\)*](#) provides principles and procedures for fast-tracking certain business cases. In some cases, the government has already made a decision or commitment about an initiative. This could include an election commitment, other public commitment approved by the Premier or Cabinet, or intergovernmental agreements. In such cases, normal business case processes and requirements may be altered. This is because the government’s priority has already been confirmed and there may be a constraint on the scope of options that would typically be investigated.

The type of business case, the level of detail and options to be investigated will depend on the pre-existing government commitment or decision. If the commitment is unspecific, a CBA comprising an analysis of options, costs, benefits and risks can be critical to fill in the details of the commitment. However, if a commitment is more specific and well defined, it may be appropriate to exempt a proposal or group of proposals from some or all of the requirements outlined in the Comprehensive CBA. In such cases, preparing a more detailed CBA may be considered a poor use of public resources. CBA should not be completed as a compliance exercise to justify existing decisions or clearly scoped commitments.

When a project is fast-tracked, a Preliminary or a Comprehensive CBA is still mandatory. The CBA of fast-tracked projects should be adapted based on the following considerations:

- Time effective to allow a CBA to be completed within a constrained timeframe to meet fast tracking objectives.
- Agile and flexible by using strategic demand modelling and common planning assumptions to inform benefit estimates.
- Best use of existing information instead of committing to new modelling and studies.
- BCR and NPV for one option only is acceptable.

5. CBA of Federally Funded Projects

If a project is jointly funded by Australia and NSW Government, CBA should comply with requirements set out by the NSW Government, Australian Department of Infrastructure, Transport, Regional Development, Communities and Arts (DITRDCA) and Infrastructure Australia. It generally results in a comprehensive CBA regardless of Tier and Gate under NSW Government's Investment Framework. The preference is to generate one CBA to meet all NSW and Australian Government investment requirements, instead of generating different CBA reports for each investor. Table 3 summarises the CBA requirements of NSW Business Case, DITRDCA Planning & Delivery Project Proposal Submissions, and IA's Business Case submissions. The last column in Table 3 provides guidance on a single CBA that may meet all requirements of both NSW and Australia Governments.

Table 3 CBA requirements of NSW Business Case, DITRDCA Planning & Delivery Project Proposal Submissions and IA Business Case Submission

Analytical components	NSW Business Case	DITRDCA Planning and Delivery Project Proposal Submissions	IA Business Case Submission	Recommended CBA to meet NSW, IA and DITRDCA requirements
Conceptual Assessment	Gate 0 - Conceptual assessment	NA	IA Stage 1 – Problem cost and value of opportunities	Problem costs and value of opportunities
Preliminary CBA	Tier 1 Gate 1 Tier 2 Gate 1	Planning Project Proposal Submission	IA Stage 2 Submission economic appraisal	Preliminary CBA
Comprehensive CBA	Tier 1 Gate 2 Tier 2 Gate 2 Tier 3 Gates 1/2 combined	Delivery Project Proposal Submission	IA Stage 3 Submission economic appraisal	Comprehensive CBA
Discount rate for core BCR	5 per cent	4 and 7 per cent	4 and 7 per cent	4, 5 and 7 percent
Carbon values for core BCR	NSW Carbon Values	National Carbon Values	National Carbon Values	National & NSW Carbon Values

Analytical components	NSW Business Case	DITRDCA Planning and Delivery Project Proposal Submissions	IA Business Case Submission	Recommended CBA to meet NSW, IA and DITRDCA requirements
Carbon valuations – embodied and operating carbons	Required if the project cost is \$100m or above	Required if the project cost is \$100m or above	Required if the project cost is \$250m or above	Required if the project cost is \$100m or above
Referent groups	NSW residents	Australian residents	Australian residents	Australian residents
Cost used in Core BCR	Tier 1 – P90 Tier 2 to 4 – P50	P90	P90	P90
Employment effect	Not required	FTEs supported at the peak construction period	Not required	FTEs supported at the peak construction period

* Definition of embodied carbon, operating and enabling carbons, B2, B6-B8 carbons can be found in INSW (2024, p.14)

6. Financial Appraisal and Ex-post CBA

NSW Treasury (2024a) Business Case Guidelines does not change requirements for project financial appraisal and Financial Impact Statement (FIS).

NSW Treasury (2024c) [Policy and Guidelines of Evaluation](#) recommends ex-post CBA for proposals with a total cost at or above \$50 million, or for pilot initiatives. Where an emergency proposal has been unable to meet business case requirements due to insufficient time for detailed analysis, it must at a minimum be supported by a short-form assessment that includes plans for an ex-post CBA.

7. Other Relevant Guidelines and Resource

In the launch of NSW Government Business Case Guidelines in December 2024, Treasury has provided or reiterated a suite of guidance, technical notes and tools for preparing a Cost-Benefit Analysis:

- TPG23-08: [NSW Government Guide to Cost-Benefit Analysis \(February 2023\)](#). This is the Treasury Policy and Guidelines paper that sets out how to undertake cost-benefit analysis (CBA) for NSW government initiatives.
- TPG23-17: [NSW Treasury Disaster Cost-Benefit Framework \(October 2023\)](#). This is the NSW Treasury Policy and Guidelines paper that sets out how to undertake disaster resilience cost-benefit analysis (CBA) that supplements and follows the principles and requirements of the NSW Government Guide to Cost-Benefit Analysis (TPG23-08).
- [NSW Treasury Rapid Cost-Benefit Analysis Tool](#) (Excel model) and [User Guide](#) (January 2024). These have been developed to support analysts to conduct calculations in Cost-Benefit Analysis (CBA). This User Guide provides details of the Tool's functions, parameters and inputs and provides a step-by-step guide on how to use the Tool.

- [NSW Treasury Business Case Guideline Technical Note – Resilience](#) (November 2024). This provides guidance for assessing climate change risks, climate projections, costs of shocks (e.g, bushfire, flooding, cyber-attack, pandemic, and extreme weather etc.) and stressors (demographic change, coastal erosion, climatic shift, loss of vegetation, and housing affordability etc.)
- [TPG24-28 NSW Treasury First Nations Investment Framework](#). This is a guide to good practice in working with First Nations people and communities on the design, appraisal and evaluation of initiatives. It includes an appendix of cost-benefit analysis of First Nations initiatives.
- [NSW Treasury Technical Note to NSW Government Guide to CBA Guide: Carbon Value in CBA](#) (February 2023). A new technical note is forthcoming to replace the 2023 version that will set out target consistent carbon values for project appraisals and evaluations.

Appendix – National and NSW Carbon Values

Financial Year	National Carbon Values (\$ per tonne of carbon dioxide equivalent (\$/tCO2-e) in 2023			National Carbon Values (\$ per tonne of carbon dioxide equivalent (\$/tCO2-e) in 2024		
	Low estimate for sensitivity test	Central estimate for core BCR	High estimate for sensitivity test	Low estimate for sensitivity test	Central estimate for core BCR	High estimate for sensitivity test
2024	\$44	\$56	\$66			
2025	\$56	\$66	\$77	\$90	\$130	\$230
2026	\$62	\$76	\$95	\$89	\$131	\$231
2027	\$69	\$88	\$107	\$88	\$133	\$233
2028	\$76	\$104	\$132	\$90	\$137	\$237
2029	\$87	\$123	\$152	\$96	\$146	\$246
2030	\$107	\$148	\$180	\$112	\$164	\$269
2031	\$124	\$171	\$210	\$141	\$196	\$313
2032	\$144	\$192	\$227	\$183	\$240	\$370
2033	\$159	\$209	\$258	\$225	\$284	\$426
2034	\$166	\$222	\$262	\$255	\$316	\$470
2035	\$172	\$234	\$280	\$270	\$334	\$501
2036	\$184	\$244	\$293	\$277	\$343	\$522
2037	\$191	\$254	\$308	\$278	\$347	\$538
2038	\$193	\$264	\$319	\$278	\$349	\$552
2039	\$206	\$273	\$329	\$276	\$350	\$565
2040	\$210	\$282	\$340	\$274	\$350	\$578
2041	\$212	\$291	\$351	\$272	\$350	\$590
2042	\$215	\$300	\$361	\$269	\$350	\$602
2043	\$228	\$309	\$370	\$267	\$350	\$614
2044	\$246	\$318	\$375	\$264	\$350	\$627
2045	\$267	\$326	\$380	\$262	\$350	\$639
2046	\$272	\$335	\$403	\$260	\$350	\$651
2047	\$274	\$344	\$421	\$257	\$350	\$663
2048	\$276	\$354	\$429	\$255	\$350	\$676
2049	\$284	\$363	\$437	\$252	\$350	\$688
2050	\$287	\$377	\$469	\$250	\$350	\$700

Reference

Infrastructure Australia (2023) Estimating a national emissions value for us in economic appraisal, modelling report, The CIE and WSP, 3 October 2023

Infrastructure Australia (2024) Valuing emissions for economic analysis, Guidance note, February 2024.

INSW (2024) Decarbonising Infrastructure Delivery Policy, Reducing Upfront Carbon in Infrastructure, Infrastructure NSW, April 2024

NSW Treasury (2018) NSW Government Business Case Guidelines, TPP18-06

NSW Treasury (2022) NSW Gateway Policy, TPG22-12, March 2022

NSW Treasury (2023) Policy and Guidelines: Submission of Business Cases, TPG22-04, February 2023

NSW Treasury (2024a) Business Case Guidelines, TPG22012, November 2024

NSW Treasury (2024b) Fast Track for Business Case and Assurance, TPG24-30, November 2024.

NSW Treasury (2024c) Policy and Guidelines: Evaluation

NSW Treasury (2024d) Carbon emissions in the Investment Framework (TPG24-34), December 2024.

NSW Treasury (2024e) NSW Carbon Values, Final Report, NSW Government and Deloitte, 26 April 2024.

TfNSW (2024) Transport for NSW Cost-Benefit Analysis Guide, August 2024, including economic parameter values and subject specific technical notes. Website:

<https://www.transport.nsw.gov.au/projects/project-delivery-requirements/project-cost-benefit-analysis/transport-for-nsw-cost-benefit>

Document Control

Version	1.0
Supersedes	Implementation of NSW Government Business Case Guidelines 2024 – Transport Cost Benefit Analysis Requirements
Date	February 2025
Author	Economic Advisory
Branch	Investment & Assurance
Division	Finance, Technology & Commercial

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