

Using the Transport for NSW Digital Accelerator Design Thinking Process to Develop Business Case and Cost-Benefit Analysis Guidelines for Transport Initiatives

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Abstract

Transport for NSW (TfNSW) provides best-practice guidance on the development of business cases and cost-benefit analysis (CBA) through the Transport Business Case Guidelines and the Principles and Guidelines for Economic Appraisal for Transport Investment and Initiatives (PGEATII), which are supported by templates and tools (these products will be referred to collectively as the “Guidelines”). The Guidelines are in the process of major transformation and this paper outlines the innovative TfNSW Digital Accelerator Design Thinking Process that is being applied.

The Guidelines have several audiences – from project teams within the NSW Transport cluster, other NSW Government entities, industry to researchers. Therefore, the process of updating these documents required a considered and consultative approach.

To update the Guidelines, the TfNSW Digital Accelerator Design Thinking Process was used. A four phased approach underpins this process. Firstly, the Prioritise phase was used to scope the problem. The Understand phase involved workshops and interviews to understand the problems with the existing documents. The process is currently in the Ideate/Prototype/Solutions phase, with the drafting of the main documents. The Scale phase involves the drafts being put online for industry comment.

The improvements to be made can be grouped into three categories. Firstly, advice needs to be updated to the most recent research and address current issues. Secondly, several steps have been taken to tailor the documents to its audience. Finally, there will be improved communication within TfNSW to improve governance.

1 Introduction

A business case is a management tool for robust and transparent decision-making. A key component of a business case is the CBA. A CBA is an evidence-based method of establishing value-for-money which evaluates the social, environmental and

economic impacts of initiatives. TfNSW provides guidance on the development of business cases through these Guidelines (TfNSW, 2018). These documents were initiated in the 1990s and have been updated periodically.

2 The need

TfNSW is currently delivering the largest transport infrastructure program Australia has seen – \$51.2 billion of investment for major projects to facilitate a growing economy and population. Robust and consistent analysis is critical to making informed decisions. It is for this reason that the Guidelines need to be of high quality.

However, the existing Guidelines present some limitations. These include:

- a need to better reflect the most up-to-date research and government policy
- a lack of guidance on emerging issues such as place-making and agile delivery approaches
- a lack of effective usability and accessibility for different user groups.

These shortcomings will be addressed in the revised Guidelines.

3 The TfNSW Digital Accelerator Design Thinking process

TfNSW developed the TfNSW Digital Accelerator Design Thinking Process as a tool to enable the embedding of the Future Transport Strategy 2056 (TfNSW, 2018). This process uses the Design Thinking approach to address complex challenges through collaborative co-design teams.

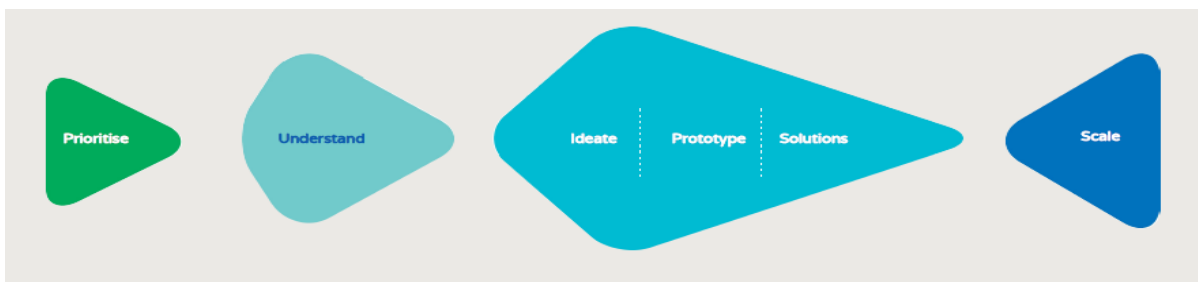
Unlike traditional methods, this process fits within TfNSW’s vision-led approach to deliver customer focussed outcomes by engaging different stakeholders. Traditional processes tend to use a linear approach to problem solving, restrict communication and creativity, and do not focus on incorporating the users’ needs.

Also, given the Guidelines have several audiences it was important to understand the various concerns different users had with the existing Guidelines. The TfNSW Digital Accelerator Design Thinking Process enabled a collaborative approach to understand the needs of all users and test our understanding of the problem rather than working with assumptions. This process contributes to the new Guidelines being evidence-based.

3.1 The four phases

A four phase approach was used to update the Guidelines.

Figure 1: TfNSW Digital Accelerator Design Thinking Process



3.1.1 Prioritise phase

In the Prioritise phase the problem was scoped using surveys. This enabled collaboration across the various project teams, CBA and business case practitioners and subject matter experts in the NSW Transport cluster.

3.1.2 Understand phase

The Understand phase explored the issues with the existing Guidelines. Extensive consultation was carried out through multiple workshops and interviews. Brainstorming with stakeholders was conducted using various Design Thinking activities. More than 150 issues were raised which were further clustered using the 'Hunching and Theming' technique. This helped to identify the underlying themes across the issues and defined the core problems faced by the business.

The understand phase also included research into transport economic guidelines from other jurisdictions. Elements of these approaches were drawn upon for best-practice such as the UK Department of Transport use of discrete products tailored to different audiences (UK DoT, 2019).

3.1.3 Ideate/Prototype/Solution phase

In the Ideate/Prototype/Solution phase the feedback was used to produce a prototype of the Guidelines. A co-design workshop was organised to develop the Business Case Template with participants across the NSW Transport cluster. The participants were grouped in small teams to develop the draft structure of the Business Case Template enabling project teams to capture the uniqueness of their projects.

The main guidance documents are in the process of being drafted.

3.1.4 Scale phase

In the Scale phase the draft Guidelines will be put online for comment external to the NSW Transport cluster. Feedback will be considered and the Guidelines will be updated accordingly.

4 The outcome

The extensive consultation process allowed a deep understanding of the core issues the stakeholders had with the existing Guidelines. Subsequently, a comprehensive assessment of the key findings enabled the development of a draft structure of the Guidelines. Additionally, a webpage has been created and the users can access the Guidelines through the internet.

4.1 Business case guidelines and template

The updated guidelines and template improves on the current guidance through:

- greater alignment with other relevant NSW Government Guidelines allowing for a best-practice and consistent approach to preparing business cases
- promoting principle based thinking
- further guidance on emerging areas such as place-based, agile as well as rolling programs
- a template which can be scaled depending on the stage, type, value and risk of the investment and other specific details
- case studies and examples to help the users grasp the content in the Guidelines.

4.2 CBA guidelines

The current PGEATII will be broken into a suite of products targeting different segments of the audience – senior management, project teams or CBA practitioners. For example, targeted at CBA practitioners, a document with clearly stated recommended parameter values has been written with accompanying Excel tools. This document will not include basic information on CBA, which the CBA practitioner is likely to already know. The content of the CBA guidelines has also been updated significantly (Table 1).

Table 1: Examples of updated content for Cost-benefit analysis guidelines

Update recommendations	Notes
Value of travel time	<ul style="list-style-type: none"> • Recommended values of time for light commercial vehicles (LCV) and heavy commercial vehicles (HCV) in urban areas are: <ul style="list-style-type: none"> • Urban LCV = \$36.30 per vehicle hour • Urban HCV = \$60.88 per vehicle hour. <p>These are to be used where project-specific data is not available</p>
Vehicle operating costs (VOC)	<ul style="list-style-type: none"> • TfNSW recommends the following VOC models based on the location of the initiative, and the availability of the model: <ul style="list-style-type: none"> • Urban VOC calculations should use the approach outlined for interrupted flow VOC models in the Australian Transport Assessment and Planning PV2 Road Parameter Values (2016) (referred to as the 'ATAP VOC model') • Urban projects which will receive federal funding or which will be assessed by IA for inclusion on the Infrastructure Priority List should also include, as a sensitivity, VOC calculations using the Austroads Guide to Project Evaluation (2012) (referred to as the 'Austroads VOC model') • Rural projects should use the approach outlined for uninterrupted flow VOC models in the Australian Transport Assessment and Planning PV2 Road Parameter Values (2016) • Rural VOC calculations may use the Rural Evaluation System model (REVS) as an alternative to the Australian Transport Assessment and Planning PV2 Road Parameter Values (2016), if it is available. If REVS is used for the CBA, the REVS model including inputs will need to be provided to TfNSW Economic Advisory. • For urban vehicle operating cost models, TfNSW recommends treating kilometres travelled at speeds below 5km/h as travelling at 5km/h for the purpose of calculating VOC, unless evidence can be provided for their inclusion. Indicative maximum parameter value for cars: <ul style="list-style-type: none"> • ATAP 2016 = \$1.80 per vehicle kilometre travelled • Austroads 2012 = \$0.48 per vehicle kilometre travelled.

5 Conclusion

The TfNSW Digital Accelerator Design Thinking Process enhanced capabilities within TfNSW and encouraged innovative thinking – leading to the delivery of user-friendly Guidelines. The revised Guidelines will be tailored to audience which will better support project development and planning. The process created awareness of the tools available, and led to learnings from the communication through interaction between various stakeholders.

Moreover, through encouraging collaboration, the TfNSW Digital Accelerator Design Thinking Process led to the collective ownership of the Guidelines throughout the NSW Transport cluster as many people participated in the process. Additionally, the process led to the utilisation of expertise throughout the NSW Transport cluster that will result in higher quality Guidelines.

The updated Guidelines will be easier to use and clearly articulate processes, which were key issues highlighted by stakeholders. They will provide additional value and more relevant guidance for the NSW Transport cluster, other NSW Government entities, researchers and industry.

References

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