



Money talks? Pricing water, landscape community cohesion - and the rest

When planning transport projects, how do we assign dollar values to the environment, community cohesion, and heritage and cultural sites?

Monetising non-monetised benefits

Many aspects of transport projects in New Zealand are not currently valued monetarily. These include the projects' impact on:

- perceptions of safety and security
- system vulnerabilities and redundancies
- water
- land and biodiversity
- resource efficiency
- transport mode choice
- access to opportunities
- community cohesion
- heritage and cultural values
- landscape
- townscape
- te ao Māori.

In this study, researchers reviewed literature on how other countries value these impacts, and whether such values and methods could be used for valuing non-monetised items in the Waka Kotahi benefits framework. The researchers also prepared:

- a database of values and monetisation methods for these aspects
- a guide for readers on using the database and the implications for further monetary valuation.

International literature review

The researchers reviewed data from Australia, Canada, the Netherlands, Sweden and the United Kingdom. Each has a long history of cost-benefit analysis (CBA) relevant to New Zealand's situation.

However, most of these countries have limited monetary valuation beyond a core set of items covering capital and operating costs, savings in travel times, vehicle operating costs and transport crashes, and reductions in greenhouse gas emissions and noise.

There's a wide range and variety in non-monetised items covered by their frameworks, with very few items covered in more than one or two countries. The suitability of using overseas values in New Zealand depends on:

- the quality of the source studies
- the adjustments made to convert them to New Zealand values
- the similarities in setting between the two countries.

Definitions of what's being valued can also vary markedly between countries, complicating their transfer to New Zealand settings.

Meanwhile, many items in the Waka Kotahi non-monetised benefits are localised and vary widely across New Zealand. So, finding consistent standard values for use in different areas could be difficult.

Also, no other country tries to put monetary valuation for indigenous ethnic communities through CBA processes – they're included elsewhere in those countries' appraisals. Māori as Treaty of Waitangi partners may benefit more from being involved at the development stages of transport initiatives.

Valuation approaches

Monetisation techniques fall into two broad categories:

1. Market-based valuations and revealed preference valuations, which are:
 - a. relatively simple to do
 - b. incomplete – they don't cover non-use values for natural and heritage resources whose degradation would be irreversible.

2. Stated-preference valuations, which use population surveys to directly reveal value – including non-use values.

Stated preference studies are survey-based, relatively costly to undertake and quite specific to their subject matter.

- They can provide existing values for benefit transfer.
- In New Zealand, there are not enough empirical non-market value estimates to generalise them for widespread use.

Stated preference methods are appropriate for significant non-use values, such as some natural environment and cultural heritage sites. They must be done well, with steps taken to control well-documented sources of bias.

Overall, attaching values to the benefits framework is most appropriate for impacts that are ubiquitous and relatively constant across the country. Impacts that are highly site-specific are better addressed by project planning and consent approval processes.

Using the report's values and methods

The researchers compiled a sortable spreadsheet database of the current values they found, identifying subject matter, source and date. An extract is included in Appendix A of the main report.

Monetising non-monetised benefit items requires:

- primary research, which can be costly
- using less-customised results in benefit transfer.

Recommendations

- If adjusted for the New Zealand context, benefit transfer could help expand monetisation, but New Zealand has a limited pool of studies to draw on. This should be expanded.
- Australia provides a range of values that may be drawn on in the short term, and Australian agencies could be approached to learn more about their experience.
- In the longer term, Waka Kotahi would benefit from investing in a coordinated approach to primary valuations, to ensure contextually and culturally appropriate values are available in New Zealand.

This could be done with other interested agencies to develop a pool of local estimates of widespread use.

Summary assessment

	Non-market benefit item	Values found	Usable in NZ	Value feasibility
2.1	Impact on perceptions of safety and security	No		Low
4.1	Impact on system vulnerabilities and redundancies	Yes	Maybe	High
7.1	Impact on water	Yes	Maybe	High
7.2	Impact on land and biodiversity	Yes	Maybe	High
9.1	Impact on resource efficiency	Yes	Yes	High
10.2	Impact on mode choice	No		Medium
10.3	Impact on access to opportunities	No		Low
10.4	Impact on community cohesion	Yes	Maybe	Medium
11.1	Impact on heritage and cultural values	No		Medium
11.2	Impact on landscape	Yes	No	Medium
11.3	Impact on townscape	No		Low
12.1	Impact on te ao Māori	No		Low



RR 686 - Database of quantification and monetisation methodologies and value proxies for non-monetised benefits, Waka Kotahi NZ Transport Agency research report.
Available at www.nzta.govt.nz/resources/research/reports/686