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Environment Institute of Australia and New Zealand Inc.

From the ruins: heritage conservation in transport projects

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THE CHALLENGE OF HERITAGE IN TRANSPORT PROJECTS

The New Zealand Transport Agency (NZTA for brevity) is responsible for maintaining and developing the national transport system. Its activities and projects can cause significant changes in the landscape, its use, and how it is perceived. Changes can include impacts on the landscape itself, the built structures that are elements in it, and the archaeology hidden beneath it. Any of these may carry historical or cultural information and value that would be affected by a transport project.

There is little argument that heritage should be conserved. The argument starts when conservation raises the costs of transport projects. Generally, cost increases either need to be accommodated within the project or by delaying or reducing the scope of other projects. And whereas the costs of improved safety or travel time can be easily justified by quantifying their benefits, this is much harder to do for the benefits of conserving heritage. In this sense, heritage faces very a similar challenge as environmental conservation does: how can heritage benefits and values be measured consistently and transparently?

Getting heritage conservation right is important to the NZTA, which is required to deliver an effective, efficient, and safe transport system that is also in the public interest. Moreover, there are real operational risks to not getting it right.

A heritage structure, for instance, can wind up as an asset on the NZTA's balance sheet. Unless assets can be used for transport, the NZTA does not want to hold them. But if structures are in poor condition due insufficient conservation investment, recovering their cost of conservation through use or sale at market rates is unlikely. Its disposal to another government entity may come with additional cost to the NZTA as compensation for future maintenance is demanded. If the structure is itself transport infrastructure, such as a bridge, there is the additional consideration that it must be safe if it can be accessed by pedestrians, cyclists or motor vehicles.

On the other hand, if there was an overinvestment to conserve a structure with heritage value the NZTA could end up with an overpriced asset on its books. Cost recovery is unlikely in this case because market rental rates or prices do not account fully for the value of conserved or restored heritage.

Transport projects may also create heritage impacts related to the landscape, when a new route requires permanent changes to local habitats. During earthworks, furthermore, archaeology may be uncovered that requires identification and some form of conservation. These kinds of heritage often have intrinsic or intangible value that are hard to capture in a project assessment form. Nonetheless, addressing such heritage impacts can be a sensitive process that requires developing and maintaining relationships and respect, and therefore time. Major benefits to the NZTA of handling such heritage impacts well are that the project at hand experiences minimal delay, and that the NZTA builds a reputation for being a trustworthy partner, which will help the development of future projects. But these cannot be measured or predicted ex-ante and often not even ex-post.

Being able to measure and express the benefits of heritage conservation in transport projects would therefore be of great value to the NZTA. It commissioned a research project that synthesised concepts and assessment methods from environmental and cultural economics and from the field of cultural heritage conservation. The resulting recommendations were aligned with the life cycle of transport projects to deliver a practical assessment method that can be tested.

COMMONALITIES, COMPLEMENTARITY AND DIFFERENCES

The research indicated that conceptually the values used in heritage conservation and in environmental and cultural economics have considerable overlap. This made it possible to streamline heritage and economic concepts into an internally consistent list of heritage benefits and values. Consistency is important in value assessments. If definitions overlap values are counted and presented double, inflating the aggregate of all heritage benefits and values.

In this project many debates were had on the use of 'value' and 'benefit', which have quite different meanings in environmental economics and in heritage conservation. In the compromise usage, economic benefits (revenue, jobs, growth) can also be referred to as "tangible values"; benefits that could potentially be expressed as monetary values are referred to as "intangible values"; and values strongly associated with culture are "intrinsic" values. This language aims to facilitate and clarify discussions about heritage conservation between project managers, experts, decision makers and others that have different backgrounds and interests.

The assessment methods used in economics and heritage conservation are quite different, as expected. Cultural and environmental economists are quite aware, however, of the limitations of economic valuation methods. Valuation techniques can be used when changes are small or when people have alternatives for something that they are about to lose. These conditions rarely apply to heritage impacts, particularly when intrinsic values come into play. In such cases, cultural and environmental economists would rely on community input to identify heritage values. This is akin to the 'rich narrative' approach that is gaining favour in heritage conservation. In a rich narrative assessment, experts and communities collaboratively identify the plurality of values of heritage sites. Rather than a source of conflicts, therefore, assessment methods in economics and heritage conservation proved to be complementary.

The proposed assessment methods should be applied early on in the project life cycle before the major design options have been made. Only at the early stages of projects can heritage impacts on the environment, structures, and –if it is likely or sure to be encountered– archaeology and their solutions be assessed to inform design choices.

Moreover, comparing a more complete range of costs and benefits of project design options helps achieve value-for-money sustainability. It support efficiency without comprising on effectiveness and safety.

MĀTAURANGA MĀORI-BASED ASSESSMENTS OF HERITAGE

An additional layer of complexity in assessing heritage in New Zealand comes from its dual culture. Ma¯tauranga Ma¯ori-based assessments of heritage value are dependent on, for instance, the traditions of iwi affected by transport projects and the history of the area where the project takes place. The research group deemed it undesirable to include ma¯tauranga Ma¯ori in a generic framework for assessing heritage values and recommended that the NZTA should discuss heritage impacts with tangata whenua in a parallel process.

During the course of the research, there was nonetheless a recurring message about engaging with iwi: that one of the principles of the Treaty of Waitangi is partnership between tangata whenua and the Government. In national transport projects, for which the NZTA alone carries legal responsibility, partnership in the legal sense would bring immense challenges. There are few projects, although increasing, where the NZTA and mana whenua had a meaningful collaboration on project design. There are also projects where insufficient attention was given to maintaining relationships with iwi, or where iwi concerns about heritage impacts were not given due respect and attention. This can create problems for the project and do significant damage to the reputation of the NZTA.

In the long run, the NZTA must collaborate meaningfully with mana whenua to provide transport solutions that are true to principles of the Treaty. One element is to start building a relationship and trust at a very early stage in the project life cycle. If a relationship is only started after the most significant decisions have been made by the experts, then it has little value. To prepare project managers and engineers for a relationship with iwi, the research report describes and explains ma¯tauranga Ma¯ori-based assessment frameworks that have been applied successfully in New Zealand.

WAY FORWARD

The proposed assessment tool builds on extensive literature reviews of cultural and environmental economics, heritage conservation, and past projects. Its recommendations for concepts and definitions therefore speak to various disciplines and a common language can facilitate conversations about heritage conservation. The tool emphasises consistency, transparency, and documentation so that it may become easier to compare heritage impacts and conservation investment across projects.

The framework recommends using a parallel assessment process to determine heritage impacts and solutions in a way that is appropriate to the mana whenua. It is critical to establish contact in early stages of the project life cycle so that there can be a meaningful exchange of information about project design.

The recommended method relies on a ‘rich narrative’ approach, in which experts and communities collaborate to identify and assess important heritage benefits and values, the impact of transport projects and appropriate solutions. This engagement should also be started early on. It should include a number of projects and/or heritage conservation alternatives for a more informed comparison of the costs and benefits of project options.

The NZTA is currently discussing the merits of the recommended method with various stakeholders involved in heritage conservation. It actively invites all interested organisations to join this conversation. At some point, of course, the method must be tested in real projects to determine its strengths and weaknesses in practice. Here too, the NZTA would like to collaborate with any organisation that is about to start a project that involves heritage conservation. After experience has been developed in a number of projects, in-depth analysis of the project decisions can provide further recommendations about the 'right' level of heritage conservation in transport projects.

References

Eppink FV, S Awatere, B Frame 2016. *Understanding the value of transport investment in historic and cultural heritage*. NZ Transport Agency research report 601. 112pp.

Priceless Assets:

Measuring heritage benefits in transport projects

NZ TRANSPORT AGENCY WAKA KOTAHI

New Zealand Government

Problem statement

Regulatory context: 'Wicked' problem

LTMA: Effective, efficient, and safe transport system; exhibit a sense of environmental responsibility

RMA: Heritage is a matter of national importance; Maori culture, traditions and customary rights

HNZPTA: Requires archaeological authority when archaeological heritage may be affected

Conservation is not NZTA's core task. While costs can usually be estimated, the benefits are fuzzy.

Built Heritage

Under or over-investment

Victoria Park Tunnel, Auckland

Archaeology

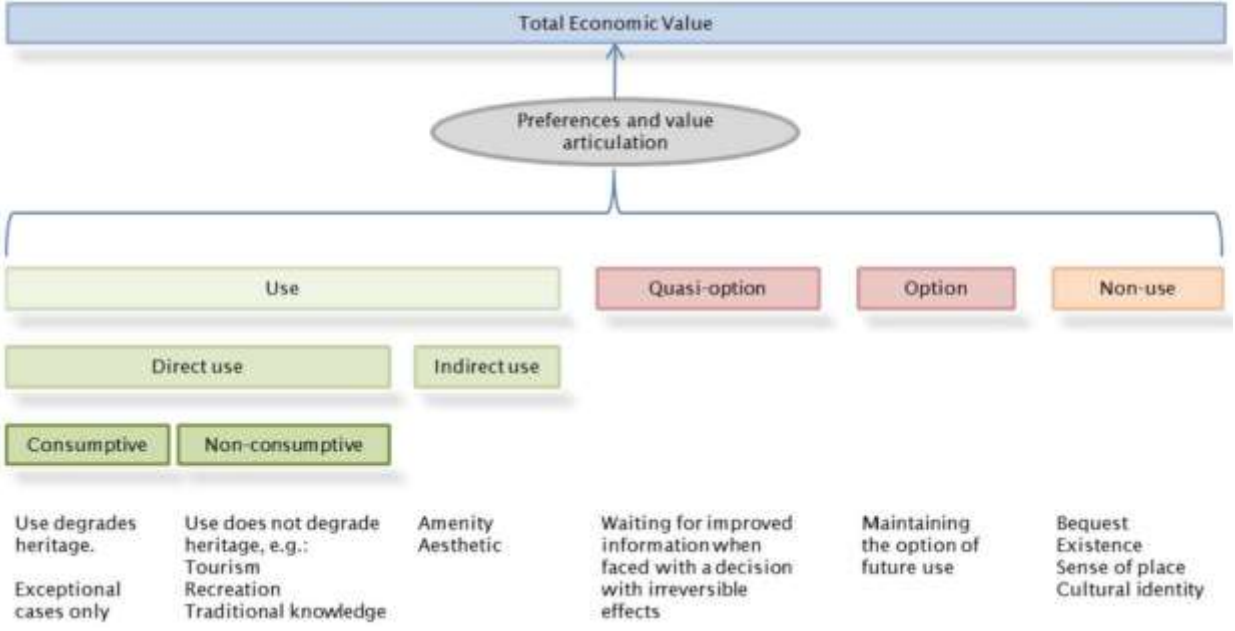
A cultural-economic synthesis

Culture & heritage frameworks

Cultural & environmental economic frameworks

ICOMOS AU	English heritage	HNZPTA	NZ Transport Agency	Cultural capital	CICES	TEEB	WRI
Aesthetic	Aesthetic	Aesthetic	Aesthetic	Aesthetic	Aesthetic	Aesthetic appreciation and inspiration	Aesthetic
-	-	-	-	-	Physical use	Tourism	Recreation and ecotourism
-	-	-	-	-	Entertainment	Recreation and mental and physical health	
-	-	Architectural	Architectural	-	-	-	-
Historic	Historical	Historical	People	Historic	-	-	-
-	-	Archaeological	Events	-	-	-	-
-	-	-	Patterns	Symbolic	-	-	-
Scientific	Evidential	Scientific	Scientific	Scientific	Scientific	-	-
-	-	Technological	Technological	-	-	-	-
-	-	-	Education	-	Educational	-	-
Social	Communal	Social	Identity	Social	-	-	-
-	-	-	Public esteem	-	-	-	-
-	-	-	Statutory recognition	-	Symbolic	-	-
-	-	-	Commemorative	-	-	-	-
Spiritual	Communal	Spiritual	Tangata whenua	Spiritual	Sacred and/or religious use	Spiritual experience and sense of place	Spiritual and religious
-	-	Cultural	-	-	Experiential	-	
-	-	Traditional	-	-	-	-	-
-	-	-	Rarity	Authenticity	-	-	-
-	-	-	Vulnerability	-	-	-	-
-	-	-	Integrity	-	-	-	-
-	-	-	Context	-	-	-	-

Economist view of heritage value



Economic values derived from heritage

Amenity
Bequest
Spiritual/cultural

Commemorative
Associative
Recreation

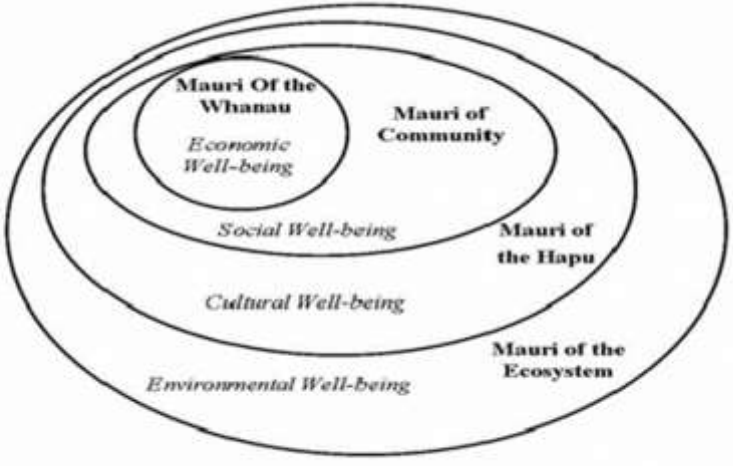
Historic education
Tourism
Functional

Mātauranga Māori-based assessment

Value-based: *whakapapa, kaitiakitanga, mauri, tapū, …*

Holistic assessments

Separate process requires early partnering



HEBF tool

Consultation and expert advice helps identify heritage places and values as the project proceeds through the project phases.

STEP 1: Identify and document

- Applying the first two columns of table 6.1, systematically identify the value/benefits for each heritage pace or area potentially afected by a project. Each heritage place or area can have multiple values/benefits, ad the documentation should carefully explain the basis for each.

STEP 2: Choose indicators

- Select appropriate indicators from the third column in table 6.1, keeping in mind that each heritage value should be reflected by one or more indicators. However, avoid the double-counting that may occur if the same indicator is used for more than one value/benefit.

STEP 3: Quantify

- Undertake analysis of heritage values/benefits using an appropriate quantification method. This should be done for each project alternative (or option). Individual heritage places or areas should be evaluated separately. Where a high-low or numeric scale is to be applied, ensure it is backed up by rich narrative descriptive material. Where a monetary value is being applied, ensure that the methodology is clearly described.

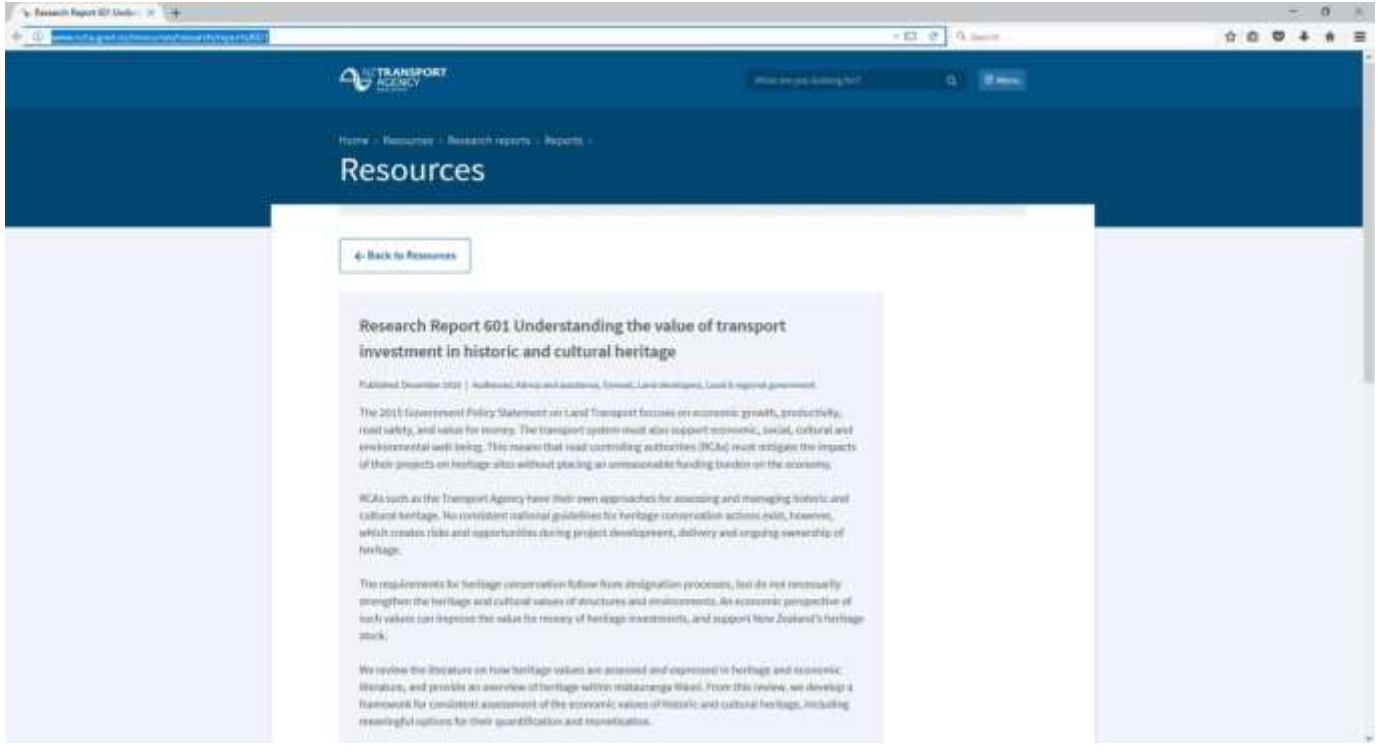
STEP 4: Compare

- Consider changes to the identified heritage values/benefits for all alternatives (or options) in terms of gains or losses of heritage value using the quantification methods applied in Step 3, and an appropriate scale. Ensure that the relevant information is included in the analysis of options and in the benefit and cost analysis of the preferred option. Mitigation, enhancement, or offset heritage values/benefits and costs should be integrated in a transparent way into this process.

Methods to express heritage values & benefits

Heritage value/benefit	Explanation	Potential indicator	Sources	Quantification Method	Appropriate Monetary Valuation Technique (where no technique is recommended, use rich narrative)
Amenity	The place/space/area is visually attractive and pleasant.	Visual qualities (including context); aspects of heritage place (fabric, material, structure); spatial characteristics	Community; expert	NECAMS; high-low; numeric scale; monetary unit	Hedonic pricing method
Spiritual/Cultural	Deeper experience of the place that transcends amenity associations and is distinct from commemorative associations	Presence or strength	Community; online and offline media	Present-absent; high-low	-
Bequest	The place is archaeologically or architecturally unique, or represents a historic technological development that is not found elsewhere, and needs to be preserved for future generations	Rarity; threat; integrity; presence or strength	Community; expert; online and offline media	High-low; numeric scale; monetary unit	Stated preference survey
Historic education	The place has the potential to be used for formal and informal educational purposes related to history, architecture, science, engineering, technology or design	Student visits; use of the place as an educational example; recognition in literature	Community; expert; online and offline media	High-low; numeric scale	-

Find the research report here…



Summary

Wicked solution: measurement tool for heritage benefits that could be extrapolated to broader green assets space

Effort to unify economics and heritage language

Mixture of quantitative and qualitative monetisation methods

Practical recommendations aligned with project lifecycle

Parallel but separate processes for tangata whenua to establish their values

Early engagement with iwi, heritage professionals and local community paramount

Next steps….

1. Join the conversation:
   How useful is the framework & tool to:
   - Culture & Heritage Sector
   - Wider Green Assets
   - Road Controlling Authorities
   - Government organisations
2. What refinements are needed to the framework or tool:
   - Gaps
   - Ambiguity
   - Other
3. What would be the most valuable next step for your organisation?

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