MAURI MODEL ANALYSIS

Proposed Rotorua Eastern Arterial 4 Lane Highway Bypass

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Summary:

The Rotorua Eastern Arterial (REA) project is a New Zealand Transport agency (NZTA) roading project that has been accepted as the preferred option as a link between the Rotorua central business district and the Rotorua Regional Airport. The preferred option consists of a 4 lane highway bypass running from the south-western of Rotorua (with Sala St and Victoria Street entrances) to the north-eastern of Rotorua where it connects to Te Ngae Road.

The road upgrade is seen by some as necessary for Rotorua's future and is predicted to provide significant economic benefits as well as helping to provide a safer route for large agriculture and forestry trucks on their way to the Ports of Tauranga.

The proposed alignment could however have serious effects on culturally significant areas in the region as well as having an effect on the social wellbeing of the region. A proposed mitigation for the destruction of local sacred sites is to swap these sites for other ones of cultural value as stated by NZTA regional director Harry Wils" We actually own lands that have significant urupā that won't be needed by this designation that we want to swap as mitigation" (Rotorua highway plan meets resistance, 2013). These comments illustrate a significant lack of cultural understanding and can be seen as a substantial cultural slight on the importance of these sites. The misunderstanding could cause issues around decision making and therefore it is of interest to gain additional insight into the issue through an appropriate decision making analysis.

An initial breakdown of the three main stakeholders will be done by considering and quantifying their different worldviews. The Mauri Model Decision Making Framework will be used as a means to investigate the decision making process providing an understanding of how the preferred option was chosen, and the results will be presented using the mauriOmeter. A separate decision making tool (the analytical hierarchy process) will be used to compare results with the Mauri Model Decision Making Framework and develop further understanding of the issue.

Analysis of Three World views:

For each major stakeholder a worldview analysis was undertaken to help understand what each group considers to be the important factors when considering the decision for the REA. For each worldview there is a table with pair-wise comparisons between four different well-being dimensions (Environment, cultural, social and economic). When looking at the table, each dimension on the left column is compared to the three others in the top row. The comparison values range between -3 (the left column dimension is considered strongly less important than the top row dimension) to +3 (the left column dimension is considered strongly more important than the top row dimension). A comparison value of 0 indicates that the dimensions are considered equally important.

The accuracy of these tables is not guaranteed nor is it necessary. The analysis provides a general understanding of what each major stakeholder considers important when making decisions. Some description as to why that particular stakeholder may have the weightings presented are shown below each table, but again this is to provide insight.

The New Zealand Transport Agency (NZTA):

The NZTA are the governing body that overlooks New Zealand transport projects and manages the current transport network.

Table 1: Shows the world view of the NZTA

Worldview Quantification		**Four Dimensions**				**Calculate**	
Dimension	**Priority %**	Environment	Cultural	Social	Economic	**Sum**	**+9**
Environment	14	0	0	-2	-2	-4	5
Cultural	11	0	0	-2	-3	-5	4
Social	28	2	2	0	-3	1	10
Economic	47	2	3	3	0	8	17

The New Zealand Transport agency representatives have said during interviews that they plan on using a mitigation process of gifting culturally significant sites as replacements for any destroyed (Rotorua highway plan meets resistance, 2013). This shows that in the pursuit of an economically viable solution, cultural, social and environmental effects take second precedence. The environment scored a -2 instead of a -3 when compared with economic since any effect on the environment can have significant national backlash, so it is of greater concern than localised cultural / social issues.

Ngāti Te Roro o T eRangi

Te Roro o Te Rangi are the Hapu directly affected by the proposed REA project.

Table 2: Shows the world view for Ngāti Te Roro o Te Rangi

Worldview Quantification		**Four Dimensions**				**Calculate**	
Dimension	**Priority %**	Environment	Cultural	Social	Economic	**Sum**	**+9**
Environment	33	0	0	1	2	3	12
Cultural	36	0	0	1	3	4	13
Social	25	-1	-1	0	2	0	9
Economic	6	-2	-3	-2	0	-7	2

For Māori, the Environment is an integral part of their culture and both are equally important. Protection of the ecosystem and cultural integrity will override economic needs (with the use of a rāhui – restriction on food harvesting access or use of an area if necessary) giving the environment and cultural dimensions priority over social and economic. The ecosystem is an integral part of how the Hapu Ngāti Te Roro o Te Rangi maintain their identity, as without the environment there would be no life and as such it scores highly when compared to economic. Cultural custom and long standing traditions are what dictate the social interactions with others and as such the cultural dimension is of higher significance than social. For the Hapu Ngāti Te Roro o Te Rangi, their cultural history and practises take precedence over economic considerations.

The western scientific viewpoint of typical New Zealand citizen:

World view is for a New Zealand citizen and how they view projects like the proposed REA.

Table 3: Shows the worldview for the average New Zealand

Worldview Quantification		**Four Dimensions**				**Calculate**	
Dimension	**Priority %**	Environment	Cultural	Social	Economic	**Sum**	**+9**
Environment	22	0	1	-1	-1	-1	8
Cultural	17	-1	0	-1	-1	-3	6
Social	33	1	1	0	1	3	12
Economic	28	1	1	-1	0	1	10

The average New Zealand citizen will consider the four different wellbeing's reasonably consistently, with an emphasis on the social wellbeing. Many New Zealanders lack a significant cultural heritage and thus relate more to the social aspects of being a New Zealander. The Environment although important is considered slightly less important than the economic and social well-beings.

Mauri Model:

"The Mauri Model Decision Making Framework provides a culturally based template within which indigenous values are explicitly empowered alongside Western knowledge" (Hikuroa, Slade, and Gravely 2011). The Mauri Model is able to show the holistic effects of a project under the four well-being dimensions (Environment, Cultural, social and economic). The Mauri Model will explore the effects on the four main wellbeing's by identifying indicators and how these will be influenced by the proposed REA project. The Mauri Model will therefore be able to compare the proposed REA project and the status quo (termed 'As is') and give an understanding of where the proposed option can be improved or changed.

Indicator explanation:

Environmental indicators	
Air Pollution	Traffic emissions from altered road alignment
Water Quality	Changes to the water quality of Lake Rotorua (road contaminants via runoff)
Native species	Any effects on native flora and fauna and animals
Flooding	The effect of impervious cover on stormwater flows and drainage conditions

Cultural indicators	
Wāhi Tapu	Modification or destruction of culturally significant areas
Mana	Recognition of Ngāti Te Roro o Te Rangi tino raNgātiratanga (Mana)
Whakapapa	The connection that Ngāti Te Roro o Te Rangi have to the land through ancestral connections (whakapapa)
Whanaungatanga	How the project will change the community and how it interacts internally

Social indicators	
Health and Safety	Removal of access to springs used for bathing / health
Recreation	How the use of the area for recreational activities will change
Traffic volumes	The effect of the proposed REA project on traffic through the area
Aesthetics	Aesthetic appeal of the road and any positive/negative impacts this will have

Economic indicators	
Total project cost	The total cost of the project relative to other options
Tauranga Harbour	The economic benefits to Ports of Tauranga
Commuter Times	How the project will change travel times and the economic impact of this
Future growth	How the project will influence economic growth in the region

The mauriOmeter analysis relies on everyone's intuitive understanding of cause and effect to determine the impact upon the mauri of the indicators chosen to represent the decision context. The mauriOmeter scale reflects intuition by allocating the following results:

A score of 0 represents no change in the mauri of that indicator.

If there is change then it must either enhance or diminish the mauri of that indicator.

Enhancing is positive + and diminishing is negative -.

Within a holistic understanding of sustainability the long timeframes involved suggest that only the degree of changes needs to be determined, in that the change is partial or total. If partial the score is 1 and for total change the score is 2. The mauriOmeter is provided in the appendix to this report.

Results:

Table 4: Results of the mauriOmeter analysis

	Indicator	As is (current)	REA (current)	As is (25 years)	REA (25 years)
Environmental	Air Pollution	0	-1	0	-2
	Water Quality	1	-1	1	-2
	Native species	1	0	1	1
	Flooding	1	-1	1	-1
Cultural	Wāhi Tapu	2	-2	2	-2
	Mana	2	-1	2	-2
	Whakapapa	2	-1	2	-1
	Whanaungatanga	2	-1	2	-1
Social	Health and Safety	1	0	-1	1
	Recreation	2	-1	1	-1
	Traffic Volumes	0	1	0	-1
	Aesthetics	2	1	2	1
Economic	Total project cost	0	-1	-1	0
	Ports of Tauranga	-1	2	-2	2
	Commuter Times	-1	2	-2	2
	Future growth	-1	2	-2	2

The mauriOmeter results for the four indicators of each dimension are averaged and presented in Table 5 together with the overall average impact upon mauri for each assessment context.

Table 5: Results for the mauriOmeter

	As is (Present)	REA (Present)	As is (25 years)	REA (25 Years)
Environmental	0.750	-0.750	0.750	-1.000
Cultural	2.000	-1.250	1.750	-1.500
Social		+0.250	0.500	0.000
Economic		1.250	-1.750	1.500
Score		**-0.125**	**0.310**	**-0.250**

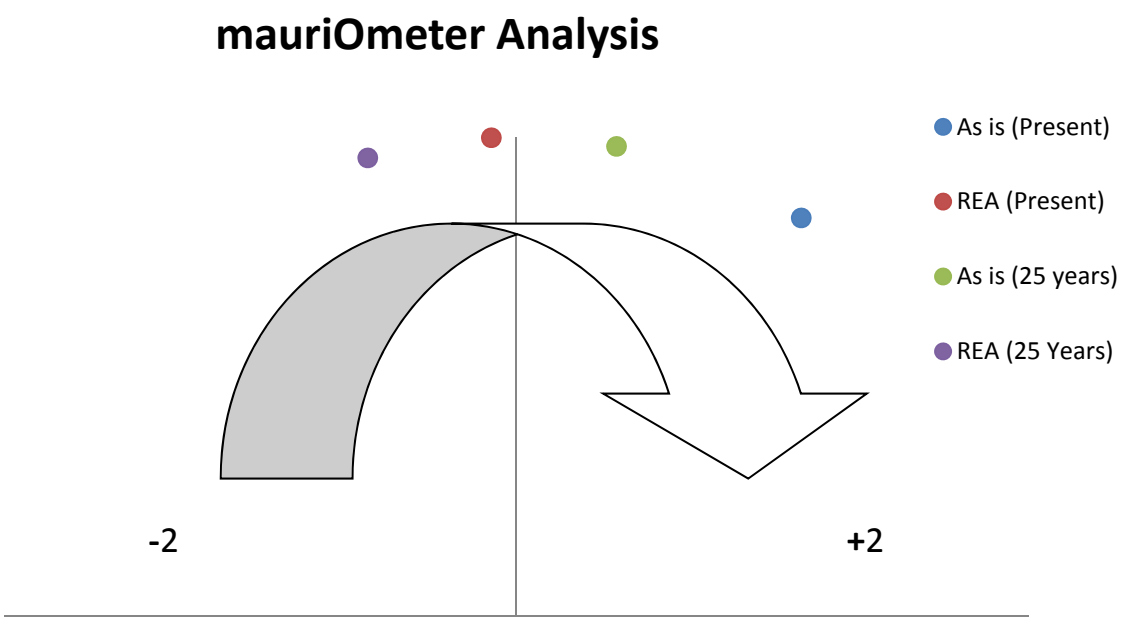

Figure 1: The mauriOmeter

Sensitivity Analysis:

A sensitivity analysis was done to compare the mauriOmeter results between the different stakeholders. The results are shown below:

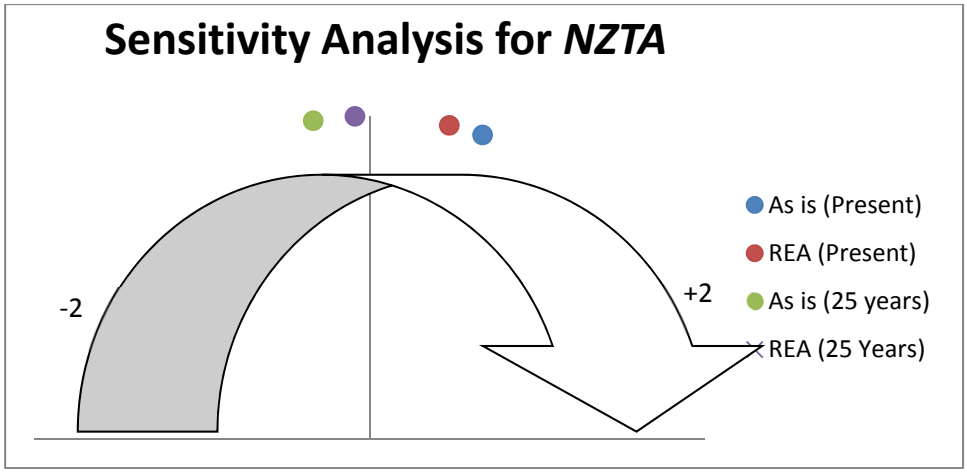

Figure 2: Sensitivity analysis for NZTA

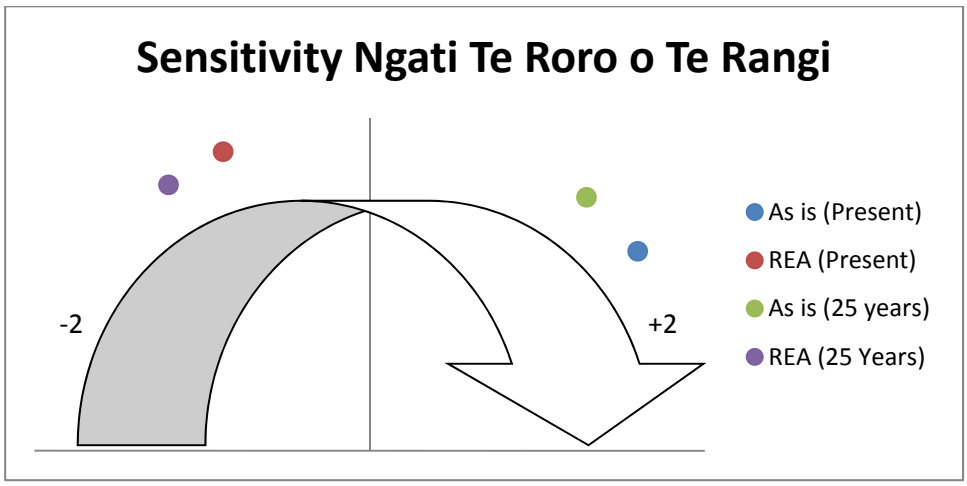

Figure 3: Sensitivity Analysis for Ngāti Te Roro o Te Rangi

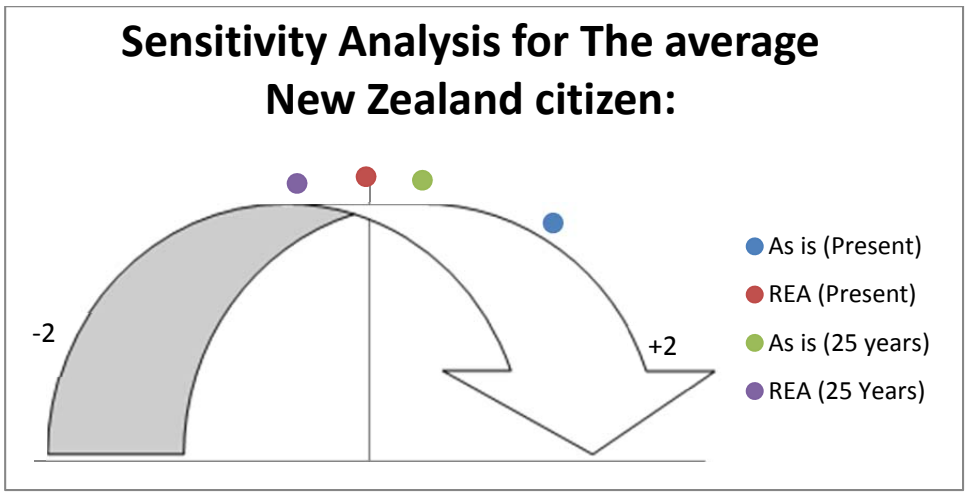

Figure 4: Sensitivity Analysis for The average New Zealand citizen:

Alternative analysis:

The Analytic hierarchy process (AHP) a decision making tool for analysing complex decisions. AHP uses different 'participants' to rank and compare different criterion selected by the decision maker. A matrix is then produced for each participant and a consolidated matrix averaging between all the participants can then be produced. From this the weightings associated with each criterion can be found and then used to evaluate the decision in question.

The AHP Goal: To make a decision on wither or not to go ahead with the REA route considering both the present and future situation.

The results of an AHP analysis are shown below:

Table 6: Consolidated matrix for AHP

Matrix		Economic impacts	Cultural impacts	Social impacts	Environmental impacts	normalized principal Eigenvector
		1	2	3	4	
Economic	1	0	1 1/5	1 1/4	1 1/4	28.57%
Cultural impacts	2	5/6	0	5/9	3/7	16.40%
Social impacts	3	4/5	1 4/5	0	1 3/5	29.72%
Environmental impacts	4	4/5	2 2/7	5/8	0	25.32%

Table 7: Weightings applied to project decisions (both present and future considered)

	As is (Present)	REA (Present)	As is (25 years)	REA (25 Years)
Economic	0.4	0.6	0.2	0.8
Cultural	0.7	0.3	0.7	0.3
Social	0.6	0.4	0.5	0.5
Environmental	0.6	0.4	0.6	0.4
	0.55932	0.44078	0.47246	0.52764

From Table 6: Consolidated matrix for AHPTable 6 the weightings to be used in Table 7 can be calculated, in Table 7 the weightings are multiplied by the weighted effect of each decision. Each heading is then split between each possible decision (As is vs. REA) and the total will add to 1 (for instance, economic is split between 'as is' and 'REA' with a ratio of 0.4 to 0.6 as the economic benefits of 'REA' outweigh 'As is').

Discussion:

Two different decision making tools were used to analyse the Rotorua Eastern Arterial project and both give different insights into the issue. The Analytical Hierarchy Process created a similar matrix spread over the four main well beings as the Worldview analysis earlier in this report. The combined worldview for the three main stakeholders shows a slight emphasis on social, economic and environmental wellbeing's of the system and a reasonably significant drop in the emphasis on the cultural wellbeing.

The AHP results shown in Table 7 show the comparisons between going ahead with the project or leaving 'as is' in both present and future situations. The AHP model does not necessarily show the best decision but allows for insight into the decision that aligns with the AHP goal "To make a decision on wither or not to go ahead with the REA route considering both the present and future situation". The results show that when considering the situation at present, the decision to not go ahead is more favourable than to go ahead with the proposed REA route. However when looking into the future situation and considering future effects of the project the decision to go ahead with the REA route is the better choice. This presents an interesting situation where it is necessary to further investigate the effects of both the present and future situation to see when combining both present and the future into one decision continuum if it is possible to see a difference between the two.

The Mauri model analysis differs from the AHP approach as instead of considering the effect of the decision on a single wellbeing heading such as 'environment' it looks at several indicators within that wellbeing and the effect on individual indicators. As a result of the world view analysis and the AHP analysis a selection of indicators was chosen so that the indicators for a particular wellbeing were mainly indicators associated with the stakeholder that had emphasized that wellbeing heading as significantly important. If it was found that there was reasonable agreement between different stakeholders on the importance of wellbeing then an equal representation of indicators was used. By exploring the effect of the proposed project on different indicators it is possible to have a project decision having both positive and negative effects on the mauri of certain wellbeing dimension within a system. An example of this can be found in Table 4 where the effect on the Social wellbeing is being considered for the REA(current) situation, for the indicator Recreational activities the decision scores a negative mauri of one whilst for the indicator Health and Safety the decision scores a positive mauri of one. This is a unique advantage of using the Mauri Model, as it allows for a deeper understanding of the effects of different decisions on different wellbeing dimensions. As well the Mauri Model allows for the comparison of different decisions across a continuum (see Figure 1) providing another means of comparing different decision options rather than simply looking at numbers.

The Mauri Model DMF presented in the results section shows that if no projects were to go ahead (listed as "As is") the score is presently positive in Mauri for all the well beings except Economic. With a Mauri of 0.81, it is still however well below the ideal Mauri of 2. As outlined in (Opus International Consultants, 2011) without any upgrade to any of the roads through Rotorua there is a definite effect on the access to Tauranga Harbour for Logging trucks, traffic delay costs and future growth for the region. This has led to the low mauri score for 'economic' for this decision option. As well as economic, the mauri of both Social and Environmental are below the ideal mauri of 2 as well

due possibly to the effects of previous issues on the Social and Environmental indicators. The evaluated mauri value for the status quo therefore should be looked at as a bench mark for any future projects. Any project to be undertaken in the area should look to improve the Mauri from this initial value thereby promoting the mauri of the region.

If no project was to be undertaken, the future effect of such a decision (listed as No Change in 25 years) would result in the Mauri of the region deteriorating. The Mauri of the ecosystem will be unlikely to change, as nothing new is being done to either assist the return of Mauri or to weaken it. The Hapu (Social) Wellbeing of the region will be slightly negatively affected by not doing anything. This is due to the issues arising from not proceeding with the project, such as predicted traffic needs increasing (Opus International Consultants, 2011) the safety for both commuters and those living in the region would be negatively affected decreasing the mauri of the system. With higher traffic rates, there will be a negative impact on the social lives of those living in the region as it will take longer to get places (such as work and social gatherings).

The current situation if the proposed REA project was to be accepted and progressed scores negatively on the mauriOmeter analysis. This situation scores negatively for all the wellbeing dimensions other than Economic, with an overall mauri of -0.125. As can be seen in Table 4 some of the indicators with declining mauri from the status quo include air pollution and water quality. The proposed REA project would allow for traffic rates through Rotorua to increase with demand into the future, with an increase in traffic there is an associated increase in air pollution due to motor exhaust especially those of diesel and trucks. In the proposed REA project there is little to no future prospects for addressing the increase in air pollution consequently leading to a declining mauri of the system. With the proposed REA project running through mainly undeveloped land there is a significant increase in impervious area, this results in an increase in contaminated runoff and stormwater. Stormwater falling on roading systems, especially highly used major arterial routes, can pick up a varying number of pollutants. Without any stormwater treatment, of which there is none in the region, this stormwater will ultimately end up entering the lake system. Lake Rotorua has a water quality listed a poor, and so with an already low mauri for the system, any continued pollution through the increase in pollutant carrying stormwater entering the system, will result in further degradation of the lakes water quality (Rotorua Te Arawa Lakes Programme,2013). Some of the key issues surrounding the proposed REA development that resulted in the mauri of the cultural wellbeing of the system scoring negatively are discussed in Cultural Impact Assessment undertaken by the Hurunga Te Rangi Marae Trust and Ngapuna A 2nd Residue Trust. Outlined in the report are the Cultural and some Social impacts of the proposed roading project. These included Land loss, ahi ka (Land titles) and Wāhi tapu damage and loss. These are all serious cultural impacts that severely impact the mauri of the cultural wellbeing for the region (Hurunga Te Rangi Marae Trust and Ngapuna A 2nd Residue Trust, 2011).

If the REA project were to proceed then the future mauri of the system was found to decrease from a score of -0.125 to -0.250. As the traffic demand for the regional roads increases into the future the mauri of the social wellbeing will increase as the health and safety benefits of the REA project will become more pronounced. The social mauri is the only wellbeing heading to increase in mauri into the future, the three other wellbeing headings show a decline. The decline in mauri for the environment mauri can be attributed to a further decline the mauri of some of the main indicators (air pollution and water quality). This is as a result of the continued existence of the REA road leading

to a continued existence of exhaust production and polluted stormwater runoff. The decline in mauri of the cultural wellbeing of the system can be similarly attributed to the continued existence of the REA road. The continued lack of recognition as a result of the project on the mauri for the ancestral connection and culturally significant areas resulted in a decline the mauri. As discussed when analysing the results of the current situation if the proposed REA project were to be progressed, the main concerns with the REA road on the effect on the mauri of the cultural wellbeing are discussed in the cultural impact assessment (Hurunga Te Rangi Marae Trust and Ngapuna A 2nd Residue Trust, 2011).

The sensitivity analysis done on the mauriOmeter results gives a deeper understanding beyond the combined mauriOmeter average, indicating the perceived effect of the proposed project on the different stakeholders. It shows how different stakeholders can be affected by the different options; however while these adjusted results may better define the perspectives of the different stakeholders, the averaged un-weighted mauriOmeter is the legal position to demonstrate the ideal decision as it combines the dimensions without exercising the bias inherent in any particular worldview. From the sensitivity analysis it can be seen that the stakeholder group with the largest impact on mauri from the proposed REA project is Ngāti Te Roro o Te Rangi. For the NZTA stakeholder the mauri increases with the implementation of the project, on the other hand the mauri for the typical New Zealand Citizen significantly decreases from the status quo mauri for the region.

Conclusions:

Overall the Mauri Model analysis shows that there are definite reasons to be concerned about the proposed Rotorua Eastern Arterial project and the effect it will have on the mauri of the local region. As stated previously, any project undertaken in the region should aim to enhance the status quo mauri of the different well beings, both the AHP analysis and Mauri Model show that this is not the case. The proposed option in fact deteriorates the mauri from the status quo. The Mauri Model analysis shows that the decision making process used by New Zealand Transport Agency to pick the proposed option is perhaps inadequate in the way it is unable to quantify the effect of a project when the potential effects are difficult to be monetized and accurately defined in a Cost Benefit Analysis or similar process. It would perhaps be prudent for those making the decision around the Rotorua Eastern Arterial project to undertake the decision making process again using different methods such as the Mauri Model in order to accurately and fairly represent the concerns of all the stakeholders.

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Overview of Mauri Model Decision Making Framework

The fourfold focus of sustainability assessment in Aotearoa based on Environmental, Cultural, Economic and Social well-being has its limitations when interpreted within the contemporary context of economic rationalism dominating the Western World. Economic rationalism is driving a political expediency in decision making that over-values monetary based (economic) performance indicators. Such decision making struggles to adequately represent the broader environmental, social and cultural implications, and continues the historic debasement of our ecosystems, cultures, and societies.

Sustainability assessment and decision making needs to be situated in a context of longer, broader and deeper views, beyond the immediate horizon of contemporary western thought. The widespread Māori opposition to municipal engineering wastewater practices is symptomatic of this need, and signals an opportunity for improved communication and understanding. The historic competition of Western Science with Indigenous Knowledge has perpetuated a paradigm of exclusion however, preventing the earlier combination of these taonga in a collaborative fashion for our collective well-being. By integrating these knowledge systems this research has developed a decision making framework that communicates sustainability issues equally well in both the indigenous and scientific paradigms.

The research questions addressed within this research with regard to resource management and sustainable development include:

- What are the priorities for sustainability decision making in Aotearoa NZ?
- Should the environment's life supporting capacity be preserved for the sake of humankind (instrumental value) or for its own sake (intrinsic value)?
- What relevance does mātauranga Māori have? Does it offer anything that is absent in the western scientific approach? Does a basis exist for the inclusion of mātauranga Māori?
- Which mātauranga Māori concepts would be appropriate for decision making, and how would a decision making process ensure that the adoption of these concepts makes a beneficial and consistent contribution?

A kaupapa Māori research methodology was chosen to investigate the potential synergy that exists between mātauranga Māori and society's legislated aspirations for sustainability. This methodology was able to address the requirements of sustainable development from an 'intrinsic value of the environment' perspective. The fundamental advantage of adopting a kaupapa Māori research methodology is that it is holistic, the very attribute necessary for truly sustainable development. Aspects of systems thinking and complexity science are adopted. A workshop process is also proposed for later evaluation of the decision making framework.

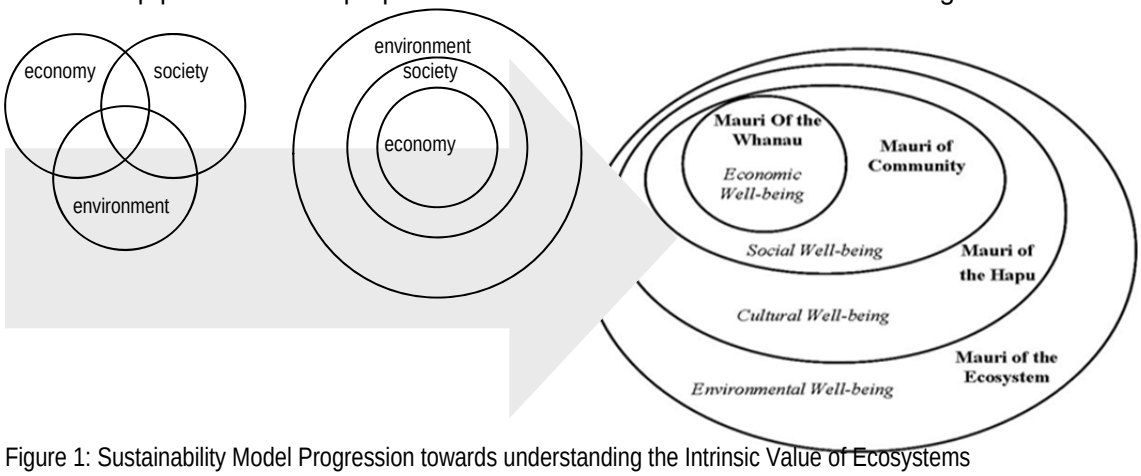

Figure 1: Sustainability Model Progression towards understanding the Intrinsic Value of Ecosystems

A decision making framework (DMF) is designed incorporating the essential attributes required in a decision support tool for the Aotearoa context. The Mauri Model integrates the intrinsic value of ecosystems (environmental), hapū

(cultural), whanau (economic), and communities (social) using the indigenous concept of mauri as the performance metric across all four sustainability dimensions. Mauri is the binding force between the physical and the spiritual, and it is the basis of kaitiakitanga as this is the ethic of working to enhance the mauri of all things around us. Mauri is considered as a potential metric for sustainability assessment and multi-criterion decision making.

Mauri bonds the spiritual and the physical and when this bond is extinguished the result is death in a living organism or alternatively the loss of capacity to support life in a material such as water or soil. The DMF incorporates this concept to determine whether the mauri of each dimension is being fully restored, enhanced, maintained, diminished, or denigrated / destroyed. This allows determination of the environmental, economic, social, and cultural sustainability of different courses of action. The use of mauri rather than money as the measure of sustainability avoids the constrained analysis of decisions based solely on psuedo-economic considerations.

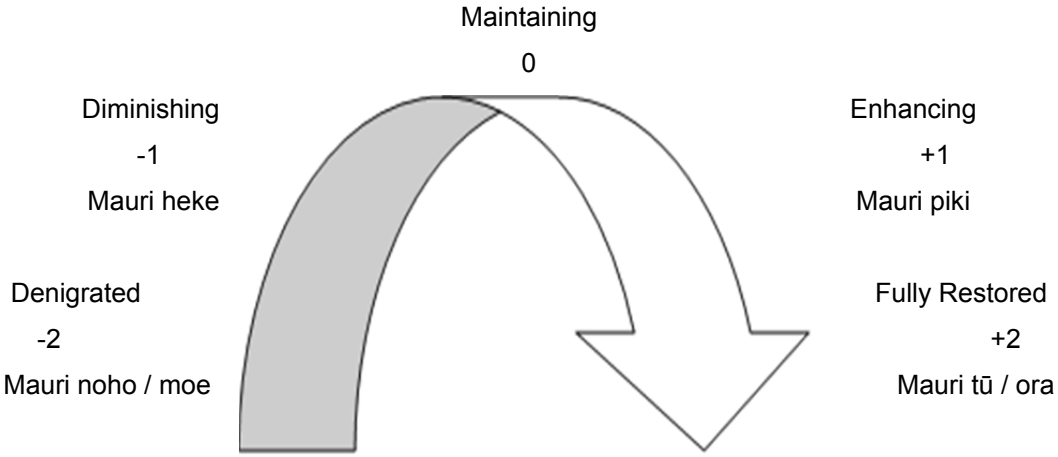

Figure 2: mauriOmeter for Absolute Sustainability Assessment

The Mauri Model DMF has been the focus of a series of facilitated workshops involving territorial and regional authorities, hapū, iwi, Māori professionals, and the Institution of Professional Engineers NZ. The Mauri Model has produced equally valid outcomes from these workshops involving indigenous communities and professional engineers with strong agreement regarding the sustainability of common western engineering approaches such as wastewater. The Mauri Model was found to satisfactorily integrate the mauri of ecosystems, hapū, whanau, and communities; as a unique performance metric aligned to the sustainability dimensions identified in legislation, for improved management of our future well-being.

The Mauri Model is able to incorporate preset thresholds for mauri dimensions and overall outcomes that can accommodate government policy or safeguards when decisions involve uncertainty or risk. The mauriOmeter results can also be interpreted individually or in combinations to identify potential improvements to the options being considered. A strength of the Mauri Model Decision Making Framework is its capacity to incorporate different stakeholder viewpoints and demonstrate how the perceived value of a particular option is skewed using a sensitivity analysis based on the stakeholder's worldview prioritisation of the well-being criteria associated with sustainability. Effective community commitment to sustainability is a significant global challenge. Therefore the modification of the Mauri Model to suit other cultural contexts including South East Asia, China and Japan has been carried out and published in recent publications.

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NZTA

Sensitivity Analysis		As is		REA		As is + 25yrs		REA + 25 yrs	
Dimension	**Priority**	**Mauri**	**Result**	**Mauri**	**Result**	**Mauri**	**Result**	**Mauri**	**Result**
Ecosystem	14%	0.750	0.11	-0.750	-0.11	0.750	0.11	-1.000	-0.14
Cultural	11%	2.000	0.22	-1.250	-0.138	1.750	0.193	-1.500	-0.165
Community	28%	1.250	0.35	0.250	0.07	0.500	0.14	0.000	0
Economic	47%	-0.750	-0.35	1.250	0.59	-1.750	-0.82	1.500	0.70
Total		**0.810**	***0.33***	**-0.125**	***0.41***	**0.310**	***-0.38***	**-0.250**	***0.40***

Ngāti Te Roro o Te Rangi

Sensitivity Analysis		As is		REA		As is + 25yrs		REA + 25 yrs	
Dimension	**Priority**	**Mauri**	**Result**	**Mauri**	**Result**	**Mauri**	**Result**	**Mauri**	**Result**
Ecosystem	33%	0.750	0.25	-0.750	-0.25	0.750	0.25	-1.000	-0.33
Cultural	36%	2.000	0.72	-1.250	-0.45	1.750	0.63	-1.500	-0.54
Community	25%	1.250	0.375	+0.250	0.063	0.500	0.125	0.000	0
Economic	6%	-0.750	-0.045	1.250	0.075	-1.750	-0.105	1.500	0.09
Total		**0.810**	***1.30***	**-0.125**	***-0.56***	**0.310**	***0.90***	**-0.250**	***-0.78***

Typical New Zealander

Sensitivity Analysis		As is		REA		As is + 25yrs		REA + 25 yrs	
Dimension	**Priority**	**Mauri**	**Result**	**Mauri**	**Result**	**Mauri**	**Result**	**Mauri**	**Result**
Ecosystem	22%	0.750	0.165	-0.750	-0.165	0.750	0.165	-1.000	-0.22
Cultural	17%	2.000	0.34	-1.250	-0.21	1.750	0.30	-1.500	-0.26
Community	33%	1.250	0.41	+0.250	0.08	0.500	0.165	0.000	0
Economic	28%	-0.750	-0.21	1.250	0.35	-1.750	-0.49	1.500	0.42
Total		**0.810**	***0.70***	**-0.125**	***0.06***	**0.310**	***0.14***	**-0.250**	***-0.06***